Paper Session
Models of Care & Transitions of Care

Thursday, April 30
7:30 am – 9:00 am

P1

Operational and Quality Outcomes of a Novel Mobile Acute Care for the Elderly Service.

J. Farber,[1] B. Korc,[1] Q. Du,[1] A. Siu.[1,2] *1. Brookdale Department of Geriatrics and Adult Development, Mount Sinai School of Medicine, New York, NY; 2. Bronx VA New York Harbor Geriatric Research, Education, and Clinical Center, James J. Peters Veterans Affairs Medical Center, New York, NY.*

Supported By: Drs. Farber and Korc are recipients of Geriatric Academic Career Awards from the Department of Health and Human Services. Dr. Siu is the recipient of a Midcareer Investigator Award in patient-oriented research from the National Institute on Aging.

Background: The traditional ACE unit has demonstrated improved functional outcomes without increased costs or changes in length of stay. It is, however, limited in scope to those patients cared for on a fixed geographical unit.

Objectives: To compare operational and quality outcomes of a mobile Acute Care for the Elderly (MACE) service to: a) patients admitted to a unit-based ACE the prior year and b) matched patients admitted to general medical services during the same time frame.

Methods: Retrospective cohort study with propensity-score matching in an urban academic medical center. Participants were 597 patients admitted to the MACE from 7/07 to 7/08, 450 admitted to a unit-based ACE the previous year, and 6330 other older patients admitted to acute medical services from 7/07 to 7/08 (from which matching cases were drawn).

Measurements: MACE patients were matched to other patients on general medical services with the identical DRG and APR DRG Severity (SOI) and the closest propensity score (derived using age, gender, race, comorbidities, and admission source). Length of stay (LOS), total cost, 7- and 30-day readmission rates, and in-hospital mortality were adjusted for these same variables, using multivariate methods.

Results: Mean LOS and total costs were significantly lower for patients in the MACE service compared to the prior year's ACE unit (6.0 vs 8.3 days, P=0.001, and $10,923 vs $14,164, P=0.009). In-hospital mortality and 7-day and 30-day readmission rates were not significantly different (4.2% vs 4.9%, P=0.46, 4.0% vs 4.9%, P=0.56, and 20.0% vs 20.9%, P=0.48). Similarly, when compared to propensity-score matched controls, mean LOS and total costs on the MACE were significantly lower (6.0 vs 6.5 days, P=0.04, and $10,923 vs $14,202, P<0.0001). Of note, laboratory, nursing, and pharmacy components of total costs were significantly lower in the MACE. In-hospital mortality and 7-day and 30-day readmission rates were similar (4.2% vs 4.5%, P=0.14, and 4.0% vs 5.2%, P=0.47,20.0% vs 20.3%, P=0.12).

Conclusions: A novel mobile ACE service may result in reduced LOS and lower costs with no change in in-hospital mortality or 7-day or 30-day readmission rates when compared to standard medical service and a traditional unit-based ACE service.

P2

The Use of a Computerized System to Improve Information Transfer during Patient Transition from a Skilled Nursing Facility to the Emergency Department.

F. Hustey,[1] R. M. Palmer.[2] *1. Emergency Medicine, Cleveland Clinic, Cleveland, OH; 2. Geriatrics, University of Pittsburgh, Pittsburgh, PA.*

Supported By: This research was supported by a Dennis W. Jahnigen Career Development Award in conjunction with the John A. Hartford Foundation and Atlantic Philanthropies Group

Objectives: To determine whether a standardized electronic transfer form improves the amount of essential information conveyed between a skilled nursing facility (SNF) and the emergency department (ED) during patient transitions to the ED. Methods: Design: Before and after. Setting: The largest SNF affiliated with the ED of an urban tertiary care center. Participants: Consecutive sample of all patients transferred from SNF to ED over a 16 month period between June 2006 and January 2008. Intervention: Implementation of a standardized electronic transfer form via closed internet connection between SNF and ED. A scoring system was devised to measure communication of 9 elements of essential information during patient transitions: reason for transfer, past medical history, medications, allergies, baseline functional status, baseline mental status, advanced directives, contact at SNF, and primary or other responsible physician. Scores were assessed pre and post intervention via chart review by a trained reviewer using a standardized data abstraction form. Additional outcomes include measurements of information transfer efficiency, markers of quality of care, and staff satisfaction. Results: 234/237 pre-intervention and 276/276 post-intervention transitions were reviewed. The transfer form was used in 130/276 (48%) of patient transitions (electronic version 76 (28%), paper copy 54 (20%). The mean number of elements of essential information per patient transfer pre-intervention was 1.85 (STD 2.41); the mean number of essential elements documented post intervention was 4.29 (STD 3.65) (p<.0001). Fewer pages of transfer information were sent per patient transition post-intervention (5.2 vs. 24.5 pages; p<.0001). ED staff satisfaction with the overall SNF-ED communication process was higher post-intervention (improvement: 11.1%; 95%CI, 0.4-21.8%). Conclusion: Communication between the SNF and ED during transitions of care and ED staff satisfaction was improved after implementation of a standardized electronic transfer form.

P3

Association Between PCP Communication for Hospitalized Older Patients and Reported Complications after Discharge.

M. L. Prochaska,[1] J. M. Farnan,[2] M. D'Arcy,[2] K. Schwanz,[2] D. O. Meltzer,[3] J. K. Johnson,[2] V. M. Arora.[2] *1. Pritzker School of Medicine, University of Chicago, Chicago, IL; 2. Department of Medicine, University of Chicago, Chicago, IL; 3. Departments of Economics and Graduate School of Public Policy Studies, University of Chicago, Chicago, IL.*

Supported By: NIA 1T35AG028785 Short Term Aging-related Research Program

AHRQ 1P02HS017110-01 A Model for Effective Inpatient Ambulatory Care Transitions

AHRQ 1U18HS016967-01 Hospital Medicine and Economics CERT

Hartford Geriatrics Health Outcomes Research Scholars Award

NIGMS 1RO1GM075292 Effectiveness of TEACH Research

Background: With increasing numbers of hospitalists, communication with PCPs may be especially important to ensure that frail older patients do not suffer from complications after discharge. The aim of this study was to assess the association between PCP awareness of older patients hospitalization and post-discharge complications.

Methods: Every 10th patient admitted to a single medical center was invited to participate. To oversample frail older patients, every patient identified as a "vulnerable elder" using the VES-13 was also invited to participate. Patients were asked to participate in a telephone interview 2 weeks after discharge. The critical incident technique was used to elicit post-discharge complications (i.e. problems with medications, follow-up appointments, readmission, etc.). Each patient's PCP was also faxed a survey 2 weeks after discharge to assess PCP awareness of the hospitalization. Interview transcripts were analyzed and coded for post-discharge complications using the constant comparative method with review by 3 independent investigators. A Fisher's exact test was used to test the association between PCP awareness of hospitalization and patient report of a post-discharge complication.

Results: From May to June 2008, 64 (53%) patients (mean age=73 years) completed the 2 week post-discharge phone interview. Forty-two percent (27) of patients reported 42 different post-discharge complications. The most frequently reported complications were difficulty with follow-up appointments or tests (12). Other complications included readmission or return to the Emergency Department (10), problems with medications (8), not-prepared for discharge (8), and medical complications or questions (4). For 30% of patients, PCPs were unaware of hospitalization. Patients were 2 times more likely to report a complication if their PCP was not aware of hospitalization (31% PCP aware, vs. 67% PCP not aware; p=0.05).

Conclusion: Many older patients reported experiencing post-discharge complications and are more likely to do so when their PCP was not aware of the hospitalization. Interventions to improve communication with PCPs for hospitalized frail elders are needed.

P4

Validity of the Emergency Severity Index for Identifying Elderly Patients Requiring an Immediate Life Saving Intervention.

T. F. Platts-Mills,[1] K. J. Biese,[1] M. A. LaMantia,[2,3] D. Travers,[1] B. McCall,[2] J. S. Kizer,[2] C. B. Cairns,[1] J. Busby-Whitehead.[2,3] *1. Emergency Medicine, University of North Carolina, Chapel Hill, NC; 2. Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC; 3. Institute on Aging, University of North Carolina, Chapel Hill, NC.*

Supported By: Supported by the Hartford Center of Excellence in Geriatric Medicine and Training

Objectives

The Emergency Severity Index (ESI) is a widely used 5-level triage instrument which has been shown to predict resource use, hospital admission, and survival at 1 year for elderly patients. An ESI 1 score is intended to identify patients requiring an immediate intervention. The purpose of this study is to evaluate the validity of ESI in identifying elderly patients requiring an immediate life saving intervention.

Methods

We conducted a prospective observational study of consecutive patients > 65 years seen in an academic Emergency Department (ED) with Level I trauma center over a one month period. We compared ESI version 4 (v.4) triage scores designated by triage nurses to actual ED course with attention to immediate life saving interventions or death within 24 hours. An immediate life saving intervention was determined by expert review by a research nurse and defined using criteria published in the ESI v.4 Implementation Handbook. A physician did a blind review of a sample of cases and inter-rater agreement as to the occurrence of an immediate intervention was calculated between the physician and research nurse.

Results

Of 754 patients aged 65 or older, 23 required an immediate intervention. ESI triage scores for these 23 individuals were: ESI 1=10 patients, ESI 2=9 patients, and ESI 3=4 patients. Two of the 754 patients died within 24 hours, but neither received or, on expert review, should have received an immediate intervention. Blinded physician chart review found excellent inter-rater agreement as to the occurrence of an immediate intervention (kappa 0.91). The sensitivity of an ESI 1 score to identify patients requiring an immediate intervention was 43% (95% CI 25%-63%) and the specificity was 97.7% (95% CI 96.3%-98.5%).

Conclusions

Modifications to the ESI triage system may be necessary to improve the early identification of elderly patients requiring an immediate life saving intervention. Some improvement may be obtained by further education of triage nurses in the application of ESI criteria to elderly patients.

P5

Supervised Exercise to Reduce Agitation in Severely Cognitively Impaired Persons.

E. Aman. *Saint Louis University School of Medicine, St. Louis, MO.*

Supported By: American Foundation for Aging Ressearch (AFAR) through the Medical Student Training in Aging Research (MSTAR) Grant

Background

Several studies have shown an improvement in depression, activities of daily living, and agitation in cognitively impaired subjects who undergo a long-term exercise program. These studies have not considered the short-term effects of exercise.

Objectives

The purpose of this study is to investigate the short-term effects of a limited, supervised exercise program on agitation, depression, and activities of daily living in cognitively impaired patients residing in the special needs unit of a nursing home.

Methods

This study was a prospective comparative study. A 3 week exercise program was implemented at the special needs units of two nursing homes. The exercise program involved 30 minutes of exercise (15 minutes of aerobic and 15 minutes of resistance), 3 days per week. 50 residents were in this study (76% female, 24% male) and they had a mean age of 79.24+/-9.67. The subjects had a mean SLUMS (Saint Louis Mental Status Examination Score) of 1.45+/-2.07 (SLUM score range 0-30, 30 meaning full cognitive faculty). Each subject had their depression, agitation, activities of daily living, and 6 m walk time measured before and after the 3 week exercise program. The Cornell scale of depression, Pittsburgh agitation scale (PAS)/Cohens Mansfield index of agitation, and ADCS-ADL (Alzheimer's disease cooperative study-activities of daily living) were used to measure depression, agitation, and activities of daily living, respectively. Multiple paired t-tests were calculated for each outcome measurement.

Results

The post exercise program scales showed an improvement in the 6 m walk test and, using the PAS (0-16, 0 meaning no agitation), an improvement in agitation. The improvement in agitation in the entire population was $p<.05$; mean PAS Pre-Exercise Program Scores were 5.80+/-4.76 and mean PAS Post-Exercise Program Scores were 4.50+/-3.70 . Amongst the patients with PAS Pre-Exercise Program Scores >3, thus categorized as agitated, there was a greater decrease in agitation; PAS Pre-Exercise Program Scores were 9.14+/- 3.35 and PAS Post-Exercise Scores were 6.07 +/- 3.39 ($p<.001$). There was also an improvement in 6m walk times; pre-exercise program times were 12.52+/-5.19 and post-exercise program times were 10.11+/-4.39 ($p<.001$).

Conclusion

There was an improvement in agitation scores and the 6m walk times in the exercise subjects after their engagement in the 3 week exercise program. Further study is needed in order to expand on these results.

P6

Improved Mortality for Same Hospital Readmission following Colorectal Cancer Resection in Octogenarians and Nonagenarians.

H. Kunitake,[1] S. R. Matula,[1] D. S. Zingmond,[2] C. Y. Ko.[1] *1. Surgery, David Geffen School of Medicine, UCLA, Los Angeles, CA; 2. General Internal Medicine, David Geffen School of Medicine, UCLA, Los Angeles, CA.*

Purpose: To determine whether readmission to the same hospital as the index resection results in better outcomes for patients ≥ 80.

Methods: All patients ≥ 80 undergoing colorectal cancer resection in California (1994-2005) were retrospectively identified by ICD-9 procedure codes (45.71-45.79, 45.8, 48.5, 48.61-48.69) using the California Office of Statewide Health Planning and Development (OSHPD) Patient Discharge Database linked with the California Cancer Registry and 2000 US Census. Univariate and logistic multivariate analysis were used to determine significant outcome predictors.

Results: Patients ≥ 80 comprised 24% (n=26,658) of all patients undergoing colorectal cancer resection in 1994-2005. 10,445 (39%) had at least one readmission within the first year (22% in 30d, 33% in 90d, median time to first readmission 71d). For all readmitted patients, 74% had a surgical complication and 29% required a colorectal cancer resection-related procedure. The most common procedures were percutaneous abdominal drainage, peritoneal adhesiolysis, and wound revision. 81% returned to the index hospital for their first readmission. Index hospital readmission was associated with significantly lower 1yr mortality (33% vs. 38%, $p<0.001$), 15% shorter length of stay ($p<0.001$), and 5% fewer readmissions ($p<0.005$) compared with readmission to a different hospital. Patients readmitted within 30 days had the most benefit from index hospital readmission with a 23% reduction in 1yr mortality ($p<0.001$). Multivariate logistic regression confirmed lower 1yr mortality with return to the index hospital (OR: 0.81, $p<0.001$) controlling for revised Charlson score, cancer stage, hospital volume, and unscheduled admission.

Conclusion: Octogenarians and Nonagenarians are a growing and unique patient population with complex comorbidities requiring close follow-up and coordination of multiple medical and surgical teams. Readmission to the index hospital following colorectal cancer resection was associated with significantly lower long term mortality indicative of the importance of in depth knowledge of each patient and continuity of care. Although proposals have been made for selective referral to specialty centers for primary resection, our study demonstrates the additional importance of return to the same hospital.

Paper Session
Plenary

Thursday, April 30
10:45 am – 11:45 am

P7

Effects of the Curriculum for the Hospitalized Aging Medical Patient (CHAMP) on Patient Care and Outcomes.

D. Meltzer,[1] V. Arora,[1] P. Podrazik,[1] A. Baron,[1] C. Whelan,[1] S. Levine,[1] C. DeBeau,[1] G. Sachs.[2] *1. University of Chicago, Chicago, IL; 2. Indiana University, Indianapolis, IN.*

Supported By: Donald W. Reynolds Foundation, The Hartford Foundation, the Agency for Healthcare Research and Quality, and the National Institute of Aging.

Purpose: The Curriculum for the Hospitalized Aging Medical Patient (CHAMP) is a year-long faculty development program developed by geriatricians and hospitalists to improve geriatric inpatient teaching by general medicine inpatient attendings. This study examines the effects of CHAMP on patient care and outcomes.

Methods: Twenty of 77 general medicine inpatient attendings participated in CHAMP from July 2004 to June 2007. Data on length of stay, cost, inpatient mortality, and 30-day readmission and ER visits was collected for 30,567 patients admitted between July 2001 and June 2007 before or after their general medicine attending's participation in CHAMP. Geriatric process of care measures based on the Assessing Care of Vulnerable Elders (ACOVE) meaures were also collected for a subset of 1330 vulnerable older patients cared for by attendings before or after their participation in CHAMP.

Results: In multivariate analyses controlling for patient characteristics and date of hospital admission, patients cared for by CHAMP physicians after their attending's participation in CHAMP showed no difference in length of stay, costs, or 30-day ER visit rates, but were 58% less likely to die in-hospital and 22% less likely to have been readmitted at 30 days compared to patients cared for by the same physicians before their partcipation in CHAMP. Patients cared for by CHAMP physicians after CHAMP did not receive better care acording to any of the ACOVE process of care measures, including cognitive and functional status assessment, receipt of an exercise program, discharge planning, or screening for chronic pain, compared to patients cared for by those physcians before their particiation in CHAMP.

Conclusions: CHAMP reduced in-hospital mortality and 30-day readmission rates for patients cared for by physicians particpating in CHAMP but this effect was not mediated by changes in ACOVE quality measures. Faculty development programs such as CHAMP have the potential to improve outcomes for hospitalized older patients. Future studies will be needed to understand the mechanism and potential generalizabiluty of these findings.

P8 New Investigator Awardee

A Video Decision Support Tool for Advance Care Planning in Dementia: A Randomized Controlled Trial.

A. E. Volandes,[1,4] M. K. Paasche-Orlow,[2] M. J. Barry,[1,4] M. R. Gillick,[3] K. L. Minaker,[1,4] Y. Chang,[1,4] E. F. Cook,[5] E. D. Abbo,[6] A. El-Jawahri,[4] S. L. Mitchell.[7,8] *1. Medicine, Massachusetts General Hospital, Boston, MA; 2. Medicine, Boston University School of Medicine, Boston, MA; 3. Department of Ambulatory Care and Prevention, Harvard Medical School, Boston, MA; 4. Harvard Medical School, Boston, MA; 5. Medicine, Brigham and Women's Hospital, Boston, MA; 6. Medicine, University of Chicago, Chicago, IL; 7. Aging, Hebrew SeniorLife, Boston, MA; 8. Medicine, Beth Israel Deaconess Medical Center, Boston, MA.*

Supported By: National Alzheimer's Association,

Hartford Foundation,

Foundation for Informed Medical Decision Making

Objective: To compare preferences among elderly persons listening to a verbal description of advanced dementia or viewing a video decision support tool of the disease, and to measure the stability of those preferences after 6 weeks.

Methods: This study was a multicenter, randomized controlled trial in a convenience sample of community-dwelling elderly participants (≥65 years) comparing preferences after standard verbal description of advanced dementia versus using a video decision support tool between September 1, 2007 and May 30, 2008. (Video available online at www.ACPdecisions.com). End points were goal of care (life-prolonging care, limited care, comfort care, or uncertain) following the verbal description or video, and stability of preferences after 6 weeks.

Results: A total of 200 participants were randomized to verbal narrative (n=106) or video (n=94). Mean age was 75 and 58.0% were women. Among participants receiving the verbal narrative, 68

(64.2%) preferred comfort care; 20 (18.9%) chose limited care; 15 (14.2%) desired life-prolonging care; and 3 (2.8%) were uncertain. In the video group, 81 (86.2%) preferred comfort care; 8 (8.5%) chose limited care; 4 (4.3%) desired life-prolonging care; and, 1 (1.1%) was uncertain (P=.003). In multivariable analysis, participants in the video group were more likely to prefer comfort care than those in the verbal group (adjusted odds ratio 3.9; 95% confidence interval 1.8-8.6). After 6 weeks, 94 of 106 (88.7%) participants in the verbal group were interviewed and 27 (28.7%) changed preferences (kappa = .35); 84 of 94 (89.4%) participants in the video group were interviewed after 6 weeks and 5 (6.0%) changed preferences (kappa = .79) (P<.001).

Conclusion: This randomized trial demonstrates that older participants who view a video depiction of advanced dementia are more likely to opt for comfort as their goal of care compared to those who listen to a verbal description.

P9

Enhancing Care for Hospitalized Older Adults with Memory Problem: the e-CHAMP Trial.

M. A. Boustani,[1] N. Campbell,[2] M. Farber,[1,2] M. Weiner,[1] S. Hui,[1] P. Castelluccio,[1] S. Munger,[1] T. Campbell,[1] C. Callahan.[1] *1. Medicine, Indiana University, Indianapolis, IN; 2. Wishard Health Services, Indianapolis, IN.*

Supported By: Beeson Career Development Award (1-K23-AG026770-01) from the National Institute on Aging, American Federation of Aging Research, John Hartford Foudnation, and the Atlantics Philantropy.

BACKGROUND: Approximately 40% of hospitalized older adults have cognitive impairment (CI). These vulnerable elders are more prone to hospital acquired complications, death, and higher health care costs. A recent report from the Institute of Medicine suggested that integrating information technology into health care is the best route to improve the overall safety and quality of the health care system.

OBJECTIVE: Evaluate the efficacy of a proactive screening program for CI combined with a computerized decision support system (CDSS) to improve the quality of care for hospitalized older adults with CI.

DESIGN: A Randomized Controlled Clinical Trial.

SETTINGS: A public hospital in Indianapolis

POPULATION: 997 hospitalized older adults were screened for CI and 424 patients with CI were enrolled in the randomized controlled trial with a mean age of 74.8, 59% African Americans, and 68% female.

INTERVENTION: A computerized decision support system that alerts the physicians of the presence of CI, recommends early referral into a Geriatric consult (ACE), and suggests discontinuation of the use of Foley Catheterization (FC), physical restraints (PR), and Anticholinergic drugs (AD).

CONTROL: Patients with CI receiving usual care with no CDSS.

PRIMARY OUTCOMES: Electronically and blindly collected orders of ACE and D/C orders of FC, PR, or AD.

ATTRITION RATE: 50 out of the 424 (12%) randomized patients were discharged on the same enrollment day but were inlcuded in the final Intent-To-Treeat Analysis.

RESULTS: Using Intent-to-treat analysis, there were no differences between the intervention and the control groups in ACE orders (56% vs. 49%, P =0.21); FC D/C orders (16% vs. 19%, P = 0.45); or PR D/C orders (0.5% vs. 0%, P = 47). However, the Intervention group had more D/C orders of AD (11% vs. 5%, P = 0.03). There were no differences between the two groups in mean length of stay (7.6 days vs. 6.8, p = 0.16); 30 day-survival rate (94% vs. 94.2%, p = 0.99), or home discharge rate (43% vs. 37%, P = 0.20).

CONCLUSION: A simple screening for CI followed by a computerized decision support system improves prescribing for hospitalized older adults with CI but does not change their hospital outcomes.

Paper Session
Health Services and Policy Research

Thursday, April 30
12:30 pm – 2:00 pm

P10 Clinical Student Research Awardee

Higher Quality of Care for Hospitalized Frail Older Adults is Associated with Improved Survival One Year After Discharge.

M. Fish,[1] A. Basu,[2] J. Olson,[3] C. Plein,[1] K. Suresh,[2] G. Sachs,[4] D. O. Meltzer,[2] V. M. Arora.[2] *1. Pritzker School of Medicine, University of Chicago, Chicago, IL; 2. Medicine, University of Chicago, Chicago, IL; 3. Medicine, University of Washington, Seattle, WA; 4. Medicine, Indiana University, Indianapolis, IN.*

Supported By: The Hartford Geriatrics Health Outcomes Research Scholars Award, the National Institute on Aging Short-Term Aging-Related Research Program (1T35AG028785-01A1), the Agency for Healthcare Research and Quality Centers for Education and Research on Therapeutics (1U18HS016967-01), the Donald W. Reynolds Foundation, and the National Institute of General Medical Sciences Effectiveness of TEACH Research grant (1 RO1 GM075292-01)

Background: The relationship between adherence to quality measures for hospitalized older adults and patient outcomes is unknown. This study aims to assess the relationship between quality of care, measured by ACOVE (Assessing Care of Vulnerable Elders) quality indicators (QIs), and survival one year after discharge for frail older inpatients.

Methods: Inpatients age 65 and older identified as "vulnerable" using the Vulnerable Elders Survey (VES-13) at a single medical center were included. A composite quality score reflecting % adherence to 16 ACOVE QIs was calculated. Post-discharge death date was obtained from the Social Security Death Index. Multivariate logistic regression and Cox proportional hazards models, controlling for demographics and other possible confounders (VES-13 score, baseline ADL limitations, DNR/DNI status, length of stay, Charlson index, and number of QIs triggered), were used to assess the relationship between quality of care (quality score and adherence to individual QIs) and post-discharge mortality.

Results: From May 2004 through June 2007, 1856 frail older inpatients were enrolled. Patients triggered a mean of 8.3(SD 2.0) QIs. Mean quality score was 59.3%(SD 19.2). 495(27%) patients died within one year of discharge. Multivariate logistic regression demonstrated that a 10% increase in quality score was associated with a 7% decrease in the odds of death one year post-discharge [OR 0.93(95%CI 0.87-1.00),p=0.045]. Using Cox proportional hazards regression, patients receiving higher than the median quality score were 18% less likely to die 1 year after discharge [HR 0.82(95%CI 0.68-1.00),p=0.05]. This relationship was particularly significant for assessment of nutritional status, which was associated with a 39% reduction in mortality 1 year after discharge [HR 0.61 (95%CI 0.40-0.93),p=0.022].

Conclusion: Higher quality of care for hospitalized vulnerable elders, as measured by ACOVE quality indicators, was associated with improved survival one year after discharge. This relationship was particularly significant for older patients receiving inpatient nutritional assessments. Future research should aim to confirm and understand the rationale for these findings.

P11

Cost Analysis of the Geriatric Resources for Assessment and Care of Elders (GRACE) Care Management Intervention.

S. R. Counsell,[1,2] C. C. Callahan,[1,2] W. Tu,[1,2] T. E. Stump,[1,2] G. W. Arling.[1,2] *1. Indiana University Center for Aging Research, Indianapolis, IN; 2. Regenstrief Institute, Inc., Indianapolis, IN.*

Supported By: This work was supported by grant R01 AG20175 from the National Institute of Aging, National Institutes of Health. Support for the GRACE intervention team was provided by the Nina Mason Pulliam Charitable Trust and Wishard Health Services, Indianapolis, Indiana. Dr. Callahan is supported by grant K24 AG024078 from the National Institute of Aging.

Background: The GRACE intervention has been shown to improve quality and outcomes of care in low-income seniors, and reduce acute care utilization in those at high-risk of hospitalization.

Purpose: To provide a cost analysis of GRACE from the healthcare system perspective.

Methods: Controlled clinical trial of 951 adults aged ≥65 who received care at one of 7 community-based health centers of an urban public healthcare system. Subjects were randomized to receive the intervention (n=474) or usual care (n=477). The GRACE intervention includes a nurse practitioner and social worker who provide in-home assessment and care management over two years in collaboration with the primary care physician and a geriatrics interdisciplinary team, and guided by care protocols for common geriatric conditions. Main outcome measures were chronic and preventive care costs (including intervention costs), acute care costs, and total costs; in the full sample and predefined groups at high-risk (n=226) and low-risk (n=725) of hospitalization. Cost data were obtained from a comprehensive database that contains the actual charges for inpatient and outpatient services which were converted to costs using cost-to-charge ratios.

Results: Baseline characteristics were similar between groups with mean age 72 years, 76% women, 60% black, 52% perceived health fair/poor, 15% needed help in basic ADLs; and mean chronic disease count 2.7 and hospital admission rate in prior year 0.23. Mean two-year total costs for intervention patients were not significantly different than costs in usual care patients in the full sample ($13,840 vs. $11,834; P=.38) and high-risk group ($17,163 vs. $18,776; P=.31). Two-year total costs were higher for intervention patients in the low-risk group ($12,812 vs. $9,654; P = .02). In the high-risk group, increased chronic and preventive care costs ($9,173 vs. 6,210; P = .02), were offset by reduced hospital costs ($7,343 vs. $11,731, P < .001); and the intervention was cost-saving in the post-intervention or third year ($5,088 vs. 6,575; P = <.001).

Conclusion: In patients at high risk of hospitalization, the GRACE intervention is cost neutral and may be cost-saving when viewed from the healthcare system perspective. A cost-effectiveness analysis is needed to help guide decisions of implementation in low risk patients.

P12

A Practice Redesign Intervention to Improve the Quality of Dementia Care: Results of a Pilot Study.

D. B. Reuben,[1] J. C. Frank,[1] D. Katz,[1] C. Roth,[2] S. H. Hirsch,[1] N. S. Wenger.[1] *1. Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA; 2. Rand Health, Santa Monica, CA.*

Supported By: Alzheimer's Association

Purpose: To determine whether a practice redesign intervention coupled with referral to local Alzheimer's Association (AA) chapters can improve the quality of care provided to dementia patients

Methods: 2 community-based practices (5 physicians in each) adapted the Assessing Care of Vulnerable Elders (ACOVE)-2 intervention including screening for dementia, efficient collection of condition-specific clinical data (eg, information collected by non-physicians), medical record prompts to encourage performance of essential care processes, patient education/empowerment materials, and physician decision support/education. In addition, physicians faxed referral forms to local AA chapters who assessed patients, provided counseling and education, and made recommendations, which were faxed back to physicians. Pre- (5 per physician) and post- (10 per physician) intervention medical record audits were performed using ACOVE-3 quality indicators (QIs) for dementia to measure quality of care.

Results: Based on 47 pre- and 90 post-intervention medical record audits, overall pre-post quality scores (% of QIs satisfied) rose from 38% to 46% (p <0.05) after implementation of the practice redesign with significant (all p<0.05) differences on QIs measuring the assessment of functional status (20% versus 51%), discussion of risk/benefits of anti-psychotics (32% versus 100%), and counseling caregivers (2% versus 30%). Before the intervention, no patients were referred to the AA and after 17% were (p<0.05). Those who had been referred had higher quality scores (65% versus 41%, p<0.05) and were more likely to have received (all p<0.05) counseling about driving (50% versus 14%), caregiver counseling (100% versus 15%) and specification of a surrogate decision-maker (75% versus 44%). However, some QIs related to cognitive assessment and examination did not improve.

Conclusions: This pilot study suggests that a practice-based intervention can increase referral to AA chapters and improve quality of dementia care. Further research will be needed to confirm these findings and enhance the intervention's effectiveness.

P13

Point-based vs. equation-based Framingham risk models: Minor simplification with major consequences.

W. Gordon,[1,2] J. Polansky,[3] J. Boscardin,[5,6] K. Fung,[4,5] S. Patil,[4,5] M. Steinman.[4,5] *1. Weill Cornell Medical College, New York, NY; 2. Medical Student Training in Aging Research Program, San Francisco, CA; 3. Centers for Medicare and Medicaid Services, Baltimore, MD; 4. San Francisco VA Medical Center, San Francisco, CA; 5. Division of Geriatrics, UCSF, San Francisco, CA; 6. Division of Biostatistics, UCSF, San Francisco, CA.*

Supported By: This work was supported by the Medical Student Training in Aging Research (MSTAR) program of the National Institute of Aging, the American Federation of Aging Research, and the Hartford Foundation (Mr. Gordon) and by Career Development Transition Award 01-013 from the VA Health Services Research and Development Service (Dr. Steinman).

Dr. Polansky is lead plaintiff in United States of America ex. rel. Polansky v. Pfizer, Inc. This litigation alleges that Pfizer, which manufactures the lipid-lowering agent Lipitor (atorvastatin), conducted an improper marketing campaign to encourage unnecessary use of Lipitor. One of the allegations in the plaintiff's complaint was that Pfizer promoted the use of the point-based version of the Framingham model in order to increase Lipitor sales, including through wide distribution of the paper-based point-based risk calculator, using the point-based calculation in its Lipitor website, and funding the ePocrates cholesterol management PDA software that employs the point-based Framingham system.

Dr. Polansky's contribution to this article is made in his personal capacity, not as a Centers for Medicare & Medicaid Services employee.

BACKGROUND: National cholesterol guidelines use the Framingham model to estimate future coronary risk. The original, complex Framingham model and a simplified, point-based ("score sheet") version are both widely used, yet may stratify patients into different risk groups with different lipid treatment strategies. METHODS: Using data from 2005-2006 National Health and Nutrition Examination Survey (NHANES), we compared risk estimates for elders

aged 65-79 years generated by the original and point-based Framingham models. Our sample included 262 persons for whom guidelines recommend formal risk stratification into groups at <10% 10-year coronary event risk, 10-20% risk, and > 20% risk. All analyses were adjusted to make our results nationally representative. RESULTS: Estimates of future coronary risk under the two models were substantially different, diverging by >=3% in 30% of subjects. The original model categorized 35% of elders into the <10% risk group, 47% into the 10-20% risk group, and 17% into the >20% risk group. When applied to the same population, the point-based system reclassified 23.5% of these subjects into different risk groups, including 14.4% into higher risk groups and 8.1% into lower risk groups. Patterns of risk group reclassification varied markedly by underlying coronary risk. For example, 44% of elders classified into the highest-risk (>20%) group by the original Framingham model were reclassified into a lower risk group by the point-based system. Overall, use of the point-based system instead of the original model would classify a net of 2 million elder Americans into different risk groups than the original model, resulting in different LDL treatment goals. CONCLUSION: The point-based Framingham risk model produces substantially different estimates of coronary risk than the original model, reclassifying 2 million American elders into different risk groups for which guidelines recommend different LDL treatment strategies. Guidelines and risk prediction tools should adopt a clinically consistent, transparent, and standardized approach to cardiovascular risk assessment.

P14

Physician consultation, multidisciplinary care, and one-year mortality among Medicare recipients hospitalized with hip and lower extremity injuries.

A. L. Adams,[1] M. A. Schiff,[2] T. D. Koepsell,[2] F. P. Rivara,[2] B. G. Leroux,[2] T. M. Becker,[1] J. R. Hedges.[3,1] *1. Oregon Health & Science University, Portland, OR; 2. University of Washington, Seattle, WA; 3. University of Hawaii, Honolulu, HI.*

Supported By: Department of Emergency Medicine, Oregon Health & Science University

Objective: Hip fractures and lower extremity injuries are common in older adults, impair independent living, and threaten survival. We hypothesized that lower one-year mortality would be associated with the following two potentially modifiable hospital characteristics: 1) routine surgeon consultation with medicine specialists, and 2) multidisciplinary care conferences. Methods: This was a retrospective cohort study of Medicare recipients aged 67 years or older hospitalized in Oregon hospitals in 2002 with hip or lower extremity injuries. Demographic, injury, comorbidity, and survival information were gathered from Medicare records for the years 2000-2003. All Oregon hospitals with a qualifying case were surveyed using a structured telephone interview to collect information about routine surgeon consultations and multidisciplinary care conferences for older adult orthopedic patients. Multivariable generalized estimating equation models were used to estimate odds ratios (OR) and 95% confidence intervals (95% CI) for the associations between hospital characteristics and mortality. Results: After adjusting for age, injury severity, comorbid conditions, trauma center status, and hospital annual hip fracture patient volume, and accounting for clustering by hospital, the relative odds of dying in the post-injury year for Medicare inpatients treated in settings with routine surgeon consultation with medical staff (primary care physicians, hospitalists, or internal medicine physicians) was 0.69 (95% CI 0.57-0.83), compared to patients not treated in such settings. Inpatient treatment in settings with routine multidisciplinary care conferences, including nursing, occupational/physical therapy, and social work staff, did not affect the relative odds of dying in the one-year post-injury (OR 1.06, 95% CI 0.89-1.26). Conclusion: Routine consultation by attending orthopedic surgeon with medicine or primary care specialists for Medicare inpatients is associated with improved survival at one-year post-injury.

P15

Impact of Educational Interventions Targeting Antibiotic Use for Nursing Home-Acquired Pneumonia (NHAP).

S. A. Linnebur,[1] D. D. Fish,[1] J. Ruscin,[2] T. Radcliff,[1,3] K. Oman,[1] D. Liebrecht,[1] R. Fish,[1] M. C. McNulty,[1] E. Hutt.[1,3] *1. , University of Colorado Denver, Aurora, CO; 2. University of Southern Illinois, Edwardsville, IL; 3. Denver VA Medical Center, Denver, CO.*

Supported By: AHRQ R01HS13618-01A1

Purpose: Academic detailing in nursing homes (NH) has been shown to improve drug use patterns and adherence to guidelines. The purpose of this study was to evaluate the impact of multidisciplinary detailing on adherence to national guidelines related to use of antibiotics (AB) for NHAP.

Methods: This quasi-experimental study evaluated the effects of a multidisciplinary intervention targeting implementation of national evidence-based guidelines for NHAP. The study was conducted over 3 years (1 baseline year and 2 intervention years). Interventions took place in 8 NHs in Colorado, and 8 additional NHs in Kansas and Missouri served as controls. Interventions included: 1)educational sessions for nurses to improve recognition and timely treatment of NHAP symptoms; and 2)academic detailing to clinicians by pharmacists regarding diagnostic and prescribing practices. Pharmacists met with available clinicians approximately 2 times per year to discuss recommendations on selection, timing and duration of AB for NHAP. Differences in AB use between groups were compared after two intervention years relative to baseline.

Results: 549 episodes of NHAP were evaluated in the intervention group and 574 in the control group. Compared to baseline, 1 facility in the intervention group significantly improved in guideline adherence for optimal AB use (p=0.007), while no facilities in the control group improved. The mean adherence score for optimal AB use in intervention NHs increased from 58% to 65%, while the control NHs increased from 33% to 39%. Overall, improvement in optimal AB use was no greater in the intervention NHs than in the control NHs. Mean adherence to guidelines recommending antibiotic use within 4 hours of NHAP diagnosis increased from 57% to 75% in intervention NHs, but decreased from 38% to 31% in control NHs. This difference was significant (p=0.0003). There was no difference between intervention and control NHs for guideline adherence regarding optimal duration of AB use.

Conclusions: Academic detailing as part of a multi-faceted intervention improved adherence to AB guidelines for NHAP in some facilities. Facility-specific factors may influence efficacy of academic detailing.

Paper Session
Geriatric Education

Thursday, April 30
2:15 pm – 3:45 pm

P16

Keys to successful implementation of a QI-based, geriatric education intervention for primary care.

C. Weir,[2,1] N. McLeskey,[1] C. Brunker,[1] D. Brooks,[1] M. A. Supiano.[1,2] *1. University of Utah, Salt Lake City, UT; 2. VA SLC Health Care System, Salt Lake City, UT.*

Supported By: D.W. Reynolds Foundation

PURPOSE. Generally, quality of care for common geriatric conditions is poor. Changing provider behavior through educational in-

terventions is challenging. We describe a new educational intervention, **A**dvancing **G**eriatrics **E**ducation through **Q**uality **I**mprovement (**AGE QI**), based on core components of the PRECEDE/PROCEED implementation model.

METHODS. Primary care clinics (n=21) from three institutional settings, the University of Utah, Intermountain Health Care and VA Salt Lake City Health Care System, were invited to participate. The intervention consisted of an initial 2-hour presentation on geriatric assessment essentials conducted onsite for the entire clinic staff, followed one month later by a 1-hour QI presentation when their projects were selected. The key *predisposing factors* include: 1) established electronic medical records; 2) institutional experience with QI programs; and 3) support and involvement of institutional leaders and IT managers. *Reinforcing factors* include incentives for participation, e.g. providing 20-free Category 1 CME credits that also meet maintenance of certification and CMS Pay for Performance requirements. *Enabling factors* include regular support calls over the 6-month period, provision of performance feedback and development of computerized reminders and templates.

RESULTS. To date, 91 providers and 159 clinic staff from 19 clinics who have been offered the program have either completed their projects or are in progress (a 90% participation rate). Of the nine clinics that have completed their projects, average performance improvement on targeted QI outcomes (e.g. screening for fall risk, completion of advance directives) averaged 41% and ranged from 22% to 100%. All pre/post comparisons were statistically significant. 72% of the providers in the nine completed clinics received all 20 available CME credits. Formative evaluation results demonstrate the importance of flexible clinic-specific strategies, supportive contact and congruence with institutional goals.

CONCLUSIONS. An educational intervention based on the PRECEDE/PROCEED model that includes key predisposing, enabling and reinforcing factors resulted in demonstrable changes in provider behavior. Keys to success include: using a QI approach, offering CME, and institutional support.

P17

Outcomes of a Curriculum to Teach Thoughtful Prescribing to Internal Medicine Residents.

L. E. Brandt,[1] C. Rand,[2] N. Ratanawongsa,[2] R. C. Ziegelstein,[2] C. Christmas.[1] *1. Division of Geriatric Medicine and Gerontology, Johns Hopkins, Baltimore, MD; 2. Department of Medicine, Johns Hopkins, Baltimore, MD.*

Supported By: Generous donation from Mrs. Aliki Perroti.

Purpose: Suboptimal prescribing leads to nonadherence, adverse health outcomes, and increased costs. Studies show that residents are inadequately trained in prescribing, are unaware of prescription drug costs, and rarely engage in safe prescribing practices. We describe early outcomes from a novel curriculum to teach thoughtful prescribing to internal medicine residents.

Methods: We teach the curriculum during a 4-week inpatient internal medicine rotation called "The Aliki Initiative," during which a reduced patient load permits increased time to learn to deliver patient-centered care. Each block, we orient housestaff to the learning objectives for the prescribing curriculum. For three inpatients, housestaff complete self-directed worksheets emphasizing drug costs, regimen complexity, drug interactions, herbal remedies, and medication appropriateness in the elderly. During the rotation, faculty lead a 30-minute reflection session. Quantitative and qualitative data from worksheets and field notes are collected and analyzed.

Results: Over 8 months, 22 worksheets were completed. All housestaff who completed worksheets underestimated the cost of the patient's medication regimen. The mean difference between estimated and actual costs was $1298. Number of daily medications and doses ranged from 3 to 17 (mean 8.7) and 3 to 33 (mean 13.6), respectively. Eight housestaff made changes to simplify the medication regimen after completion of the worksheet. 73% identified at least one potential drug interaction, and 22% identified an inappropriate medication in an elderly patient. Themes from residents' self-reflections included surprise over cost of drugs and an appreciation of the importance of considering the number of daily doses and necessity of looking up drug interactions. Field notes show that while residents learned to identify problems, they were reluctant to change regimens without the involvement of primary care providers.

Conclusions: The curriculum has taught residents about important elements of thoughtful prescribing. Increased faculty support may help increase completion of worksheets and facilitate residents applying their insights to more effective prescribing behaviors. Future plans include studying the long-term impact of this curriculum on residents' prescribing practices.

P18

Medical Students' Assessment and Management of Falls.

M. Burzynski,[1] R. Leake,[1] D. Brown,[1] E. H. Duthie,[2] D. Simpson,[1,3] D. Bragg,[1] K. Denson,[2] L. Meurer,[3] G. Collaborative.[1] *1. Office of Academic Affairs, Medical College of Wisconsin, Milwaukee, WI; 2. Medicine, Medical College of Wisconsin, Milwaukee, WI; 3. Family and Community Medicine, Medical College of Wisconsin, Milwaukee, WI.*

Supported By: Wisconsin Geriatric Education Center and National Institute on Aging: Institutional National Research Service Award T35

Purpose

The 2008 AAMC Graduation Questionnaire (GQ) results reveal that 77% of graduating seniors nationally and 76% locally report (strongly agree + agree) that they are able to assess an "older adult patient's fall risk, identify underlying causative factors, and make recommendations for further evaluation and initial management". This study aimed to evaluate the degree to which third year medical students' (M3's) self-reported competency in assessing and managing falls equates to performance during patient care interactions.

Methods

Two rising M2's recorded the results of M3 "tag along" observations in five required clinical rotations during June-July 2008. Observations focused on M3s' falls assessment and management in the geriatric patient. Observations were recorded using a checklist linked to evidence-based literature on falls and the AAMC/Hartford Consensus Conference on Minimum Geriatric Competencies for Medical Students. Data analysis was performed using SPSS for Windows. Study was determined to be exempt following IRB review.

Results

Fifty-eight M3's were observed during 113 clinical encounters; 26% of encounters involved geriatric patients. Falls were assessed in 6.3% of encounters with patients > 65 yo compared to 1.3% of encounters with patients < 65. Balance was the only fall etiology pursued for patients > 65 yo, associated with 10% of fall interactions (e.g., no environment, medication related etiologies pursued). Students' queries regarding fall etiology in >65 yo falls varied significantly by clinical rotation (p= <.007): Neurology (100% of interactions in which falls were reported), internal medicine (40%), family medicine (5%), all other rotations (0%). Documentation of falls by students also varied by rotation (p= <.023): Internal medicine (25%), family medicine (23%), and all others (0%) No statistically significant difference was found between June and July students.

Conclusion

Medical students report that they can assess an older adult's fall risk and etiology per AAMC GQ. However, this self-reported competence does not equate to M3s observed performance in clinical clerkships. AAMC GQ questions in geriatrics may need to be reframed to ask respondents to focus on actual behavior rather than self-reported competence.

P19

Cadaver Treasure Hunt: Introducing Geriatrics Concepts in the Anatomy Class.

L. McNicoll, A. Nanda, R. Besdine. *Medicine, Alpert Medical School of Brown University, Providence, RI.*

Supported By: Department of Health and Human Services Geriatric Academic Career Award, Donald W. Reynolds Foundation Grant

Introduction: All medical students go through the ritual of anatomy class dissection, but few medical schools use this class as an opportunity to teach geriatrics. Most cadavers donated to medical schools are older persons with many physical findings, providing an outstanding opportunity to start to teach the principles of geriatrics.

Purpose: To develop an educational program to introduce geriatrics concepts to medical students early in their medical education, using epidemiologic and anatomical findings of cadavers.

Methods: The educational program involves 2 parts: (1) a geriatrics lecture early in the course summarizing the cadaver data, and (2) a treasure hunt in the anatomy laboratory, with geriatrician assistance, at the end of the semester. For part 1, a geriatrician presents the demographic data (age, gender, death certificate diagnoses) of the cadavers, followed by comparison of cadaver data with national data on leading causes of death. In part 2, the students have become knowledgeable about the detailed anatomy of the cadaver, and have nearly completed their dissections of the body. For one of the dissection sessions, geriatricians join the anatomy class, each spending 45 minutes with each cadaver group reviewing the anatomical findings and facilitating a discussion of clinical correlations and implications. Prior to the session, a list of common anatomical findings, both aging (e.g., LV thickening, shrinkage of the kidneys) and disease (e.g., scar of AMI, prosthetic devices) related, is distributed to the students as an aid in identifying findings of interest.

Results: In the first two years of the project, students have been shocked to learn that the mean age of the 24 cadavers exceeded 80 years and primary and contributory causes of death mirrored the national causes. The students leave appreciating that their cadavers are a valuable resource, to learn human anatomy, but also to begin understanding aging. The students acquire a new holistic perspective regarding their cadavers that gets lost during the dissection process. Students and faculty find the experience valuable in understanding the interplay of disease and aging. Evaluations have been extremely positive. Details of curriculum, the "treasure hunt" and evaluation data are described.

Conclusion: The anatomy lecture and treasure hunt experience are unique strategies for utilizing cadavers to introduce geriatrics principles into the medical school.

P20

A Longitudinal Interprofessional Mentor Program: A New Model for Chronic Illness Care Education, Year 2.

L. Collins, C. Arenson, M. Rose, C. Borden, S. Kern, L. Hewston, R. Antony, J. Necky. *Thomas Jefferson University, Philadelphia, PA.*

Supported By: AAMC-Josiah Macy CICE Grant, 2006-2008, Rattner, PI

Purpose: Chronic disease prevention and management is critical for care of older adults. Highly functioning teams of professionals are needed to provide rational, patient-centered, evidence-based care of chronic disease. However, health professions have evolved in parallel with very different traditions for education and clinical service. To address this gap in chronic illness care education, an interprofessional group of faculty at Thomas Jefferson University developed a longitudinal chronic illness mentorship program for incoming students.

Methods: The interprofessional curriculum uses the person with chronic conditions or disabilities, the health mentor, as the teacher. Teams of 4 to 5 students from medicine, nursing, physical therapy, occupational therapy, pharmacy, family & couples therapy, and public health are paired with a health mentor to complete 8 modules over 2 years. Modules include placing chronic illness in life context, obtaining a comprehensive health history, access to care and systems barriers, patient expectations of health care providers and professionalism, polypharmacy and adverse drug reactions, patient safety, and functional assessment. Team visits are followed by interprofessional debriefing sessions, faculty-facilitated small groups, and individual reflection papers.

Results: Over 1000 students are enrolled in the program and paired with 256 health mentors, 60% of whom are over age 65. Following the first year, students completed a number of assessments. Survey results showed that entering students had more positive attitudes toward chronic conditions than graduating students and that these attitudes were associated with taking a personal interest in patients. Qualitative analysis also revealed that students had an increased understanding of chronic illness and the elderly, valued the experience of interprofessional team learning, and saw the value in patient-centered care.

Conclusion: Findings suggest that a longitudinal, interprofessional mentorship program may be a promising tool for the development of higher-quality interprofessional healthcare teams. Community health mentors with chronic conditions can have a positive impact on health professions' student attitudes and should be utilized in chronic illness care education.

P21

Challenges of Geriatric Education for Surgical Subspecialists.

A. G. Botts, S. M. Barnett. *Beth Israel Deaconess medical Center, Boston, MA.*

Supported By: Geriatric Academic Career Award

Purpose: As the volume of geriatric surgical patients increases, geriatric education of resident physicians in surgical subspecialties is recognized as vital to improve competence and patient care. Our goal was to increase knowledge regarding postoperative pain management in hospitalized elders.

Methods: A geriatric inpatient pain management curriculum was developed for resident physicians from general surgery and anesthesiology. To ensure relevance, curriculum content was reviewed by senior educators from the subspecialties. Mandatory educational sessions were endorsed by specialty faculty.

Results: Eight educational sessions utilizing didactics, case discussions, and Jeopardy games were presented to 112 learners. Despite mandatory attendance requirements, only 50% of learners attended the sessions. Pre and post assessments were only completed by 40% of learners. Pre knowledge assessment using multiple choice questions demonstrated low baseline geriatric knowledge among learners: only 42.9% chose scheduled acetaminophen as first line analgesic therapy and 0% recognized symptoms evaluated by the PAINAD scale. In contrast, learners reported moderate self rated knowledge and comfort regarding geriatric pain management issues. Post knowledge assessment demonstrated little improvement even among learners who attended multiple learning sessions during which material was presented several times in a variety of manners. For example, no first-year residents correctly answered a multiple choice question regarding bedside evaluation of delirium despite repeated presentations of this information.

Conclusions: Our results demonstrate that surgical subspecialty resident physicians have a poor knowledge base regarding geriatric inpatient pain management. Furthermore, there was little improvement in knowledge despite multiple educational sessions. This suggests that a standard educational curriculum taught in a traditional manner is not appropriate in this learner group. Possible impediments include: failure to recognize the relevance of geriatric education in patient care responsibilities, inability to implement what is learned due to individual practice patterns of attending physicians, lack of repeated exposure to geriatric education time, and discordance with the

learning style of generation Y learners. If successful geriatric education is to be implemented for residents in the surgical subspecialties, these barriers must be explored and addressed.

Paper Session
Prevention

Friday, May 1
1:00 pm – 2:30 pm

P22

Longitudinal Effect of Depression on Subsequent Functional Transitions in Older Persons.

L. C. Barry, H. G. Allore, T. M. Gill. *Internal Medicine/Geriatrics, Yale University School of Medicine, New Haven, CT.*

Supported By: National Institute on Aging; 1 K01 AG031324-01A1, R37AG17560, R01AG022993.

Background: Transitioning between states of disability and independence, over time, is common among older persons. However, little is known regarding the effect of clinically significant depressive symptoms, often referred to as depression, on these functional transitions. We sought to determine the effect of depression on subsequent transitions between independence, mild disability, severe disability, and death.

Methods: Participants included the 754 members of the Yale Precipitating Events Project, a longitudinal study of community-dwelling persons, aged 70+ years, who underwent monthly assessments of disability in essential activities of daily living (ADLs) for up to 108 months. Depressive symptoms, assessed every 18 months using the 11-item Centers for Epidemiologic Studies-Depression scale, was categorized as depressed (score >=20) and non-depressed (score <20), respectively. We used a multi-state extension of the proportional hazards model to determine the effect of depression on transitions between independence, mild disability (1-2 ADLs), severe disability (3-4 ADLs), and death, adjusted for age, gender, race, education, number of chronic conditions cognitive status, and physical frailty.

Results: As compared with those who were non-depressed, older persons who were depressed were more likely to transition from independence to either mild (HR= 2.11; 95% CI 1.85, 2.43) or severe disability (HR=1.56; 95% CI 1.16, 2.11); and from severe disability to mild disability (HR=1.61; 95% CI 1.20, 2.15). Depression had no effect on transitions from mild disability to any other state or from any disability state to death.

Conclusions: Among older persons, depression is an important determinant of transitions from independence to a disabled state and may perpetuate disability among those with severe disability. Early recognition and treatment of depressive symptoms in older persons may help to reduce the onset of both mild and severe disability, ultimately reducing the burden of disability in this population.

P23

THE EFFECT OF BASELINE HEALTH STATUS ON THE PRIORITIZATION OF INTENSIVE CONTROL OF GLUCOSE AND BLOOD PRESSURE LEVELS IN ELDERLY PATIENTS WITH DIABETES.

E. Huang, A. N. Winn, P. M. John, M. H. Chin, D. O. Meltzer. *Department of Medicine, University of Chicago, Chicago, IL.*

Supported By: This work is supported by a NIA career development award (K23 AG021963) and the University of Chicago Diabetes Research and Training Center (P60 DK20595).

Purpose: Diabetes care guidelines now recommend that cardiovascular prevention should be prioritized over glucose control among sicker, elderly patients with limited life expectancy (LE) (<5 years). Using decision analysis, we assess the impact of varying baseline comorbid illnesses, functional status and associated life expectancy on the comparative benefits of intensive blood pressure and glucose control.

Methods: We used an integrated model of diabetes complications that includes individual prediction models of diabetes complications and a 4-year mortality prognostic index that accounts for age, functional status, and comorbid illness. We considered care for hypothetical patients 60-80 years of age with new onset diabetes and varying prognostic index scores. Main outcomes were the lifetime differences in average quality-adjusted days (QADs) comparing intensive and conventional blood pressure (SBP 130 mm Hg vs. 140 mm Hg) and glucose control (HbA1C 7% vs. 8%).

Results: Intensive blood pressure and glucose control produced similar health benefits among young old healthy patients (e.g, 60-64 year old, 101 QADs for blood pressure and 105 QADs for glucose). However, intensive blood pressure control conferred a larger benefit than glucose control at advanced ages (e.g., 75-79 years old, 83 QADs for blood pressure and 28 QADs for glucose. Within each age group, the expected benefits of both therapies steadily declined as the level of comorbid illness and functional impairment increased. For patients 60-64 years of age, the benefits of intensive blood pressure control declined from 101 QADs at baseline good health (LE 15.5 years), to 37 QADs with 3 additional prognostic index points (LE 9.7 years), and to 9 QADs with 6 additional index points (LE 5.4 years). A similar and slightly steeper decline in expected benefits occurred for intensive glucose control over the same intervals of baseline health status.

Conclusions: Intensive blood pressure control confers larger expected benefits than intensive glucose lowering among very old diabetes patients. However, the expected benefits of both treatments are dramatically reduced among patients with significant baseline illness. Prioritization of preventive treatments may not be beneficial among diabetes patients with less than five years of life expectancy.

P24

Influenza Immunization in Old Adults Over 70 Years of Age: How Effective Is It?

X. Tian,[1] J. Bogdanovic,[2] B. Resnick,[3] Q. Xue,[1] X. Xu,[4] R. Hamilton,[2] S. X. Leng.[1] *1. Division of Geriatric Medicine & Gerontology, Johns Hopkins University School of Medicine, Baltimore, MD; 2. Division of Allergy & Clinical Immunology, Johns Hopkins University School of Medicine, Baltimore, MD; 3. Department of Gerontology, University of Maryland School of Nursing, Baltimore, MD; 4. Influenza Division, CDC, Atlanta, GA.*

Supported By: National Institute on Aging and American Federation for Aging Research

According to the CDC, influenza affects 5-20% of the US population each year. Older adults are at high risk for influenza infection and its complications, bearing more than 90% of influenza-related mortality. In fact, influenza is the fourth leading cause of death in older Americans. Thus, annual vaccination with a trivalent inactivated vaccine (TIV) is recommended. Although recent studies have questioned the mortality benefit of influenza vaccination in older adults, little is known about the effectiveness of TIV in older adults over 70 yrs of age. The purpose of this study is to evaluate the effectiveness of TIV in this targeted older adult population. To achieve this, we conducted an influenza immunization study in 71 community-dwelling older adults (mean age 84.5 yrs, range 72-95) during the 2007-2008 season, funded by the Paul Beeson Award (www.beeson.org). Serum samples were collected from the participants before and 4 weeks after vaccine administration for pre- and post-vaccination antibody evaluation, respectively. Antibody titers to each of the 3 vaccine virus strains were measured using standard hemoglutination inhibition (HI) assay. Symptoms and signs of influenza-like illness (ILI) were

monitored through self report and bi-weekly phone contact throughout the post-vaccination season. Clinical diagnostic criteria of ILI include any three of the following: fever, cough, malaise, myalgia, coryza, sore throat, or headache. The results showed that 88% of the participants failed to mount a 4-fold antibody response (seroconversion) to any of the 3 vaccine virus strains; only 2 had such antibody response to both H1N1 and H3N2; and none to all three strains. In addition, 25 (35%) participants developed ILI during post-vaccination season. These findings suggest poor clinical and immunologic (antibody response) effectiveness of currently recommended TIV in older adults over 70 yrs of age. They provide a basis for the development of more effective immunization strategies against influenza for this fast growing segment of older adult population.

P25

Diet and Exercise Interventions Reduce Intrahepatic Fat Content and Improve Insulin Sensitivity in Obese Older Adults.

K. Shah, A. Stufflebam, T. N. Hilton, D. R. Sinacore, S. Klein, D. T. Villareal. *Geriatric and Nutritional Science, Washington University School of Medicine, Saint Louis, MO.*

Supported By: This study was made possible by Grant Number UL1 RR024992 from the National Center for Research Resources (NCRR), National Institutes of Health grants AG025501, DK 37948, DK 56341 (Clinical Nutrition Research Unit).

Objective: Both obesity and aging increase intrahepatic fat (IHF) content, which leads to non-alcoholic fatty liver disease and metabolic abnormalities such as insulin resistance. We evaluated the effects of lifestyle interventions on IHF content and associated metabolic abnormalities in obese older adults.

Methods: Eighteen obese (BMI ≥ 30kg/m2) older (≥ 65 years old) adults completed a 6-month clinical trial. Participants were randomized to diet (D group; n=9) or diet+exercise (D+E group; n=9). Primary outcome was IHF quantified by magnetic resonance spectroscopy. Secondary outcomes included insulin sensitivity (assessed by oral glucose tolerance), body composition (assessed by DXA), physical function (VO2peak and strength), glucose, lipids, and blood pressure. Results: Body weight (D: -9±1%, D+E: -10±2%, both $p<0.05$) and fat mass (D: -13±3%, D+E -16±3%, both $p<0.05$) decreased in both groups but there was no difference between groups. IHF decreased to a similar extent in both groups (D: -46±11%, D+E: -45 ± 8%, both $p<0.05$), which was accompanied by comparable improvements in insulin sensitivity (D: 66±25%, D+E: 68±28%, both $p<0.05$). The relative decreases in IHF correlated directly with relative increases in insulin sensitivity index ($r=-0.52$; $p<0.05$). Improvements in VO2peak, strength, plasma triglyceride and HDL-cholesterol concentration, and diastolic blood pressure occurred in the D+E group (all $p<0.05$) but not in the D group.

Conclusion: Diet with or without exercise results in substantial decreases in IHF content accompanied by considerable improvements in insulin sensitivity in obese older adults. The addition of exercise to diet therapy improves physical function and other obesity and aging related metabolic abnormalities.

P26

Vitamin D Status and Frailty Status: Results from WHAS I and II Studies.

P. Chaves,[1] Q. Xue,[1] A. Frisoli Jr.,[2] L. P. Fried.[3] *1. Division of Geriatrics, Johns Hopkins University, Baltimore, MD; 2. Federal University of São Paulo, São Paulo, SP, Brazil; 3. Mailman School of Public Health, Columbia University, New York, NY.*

Supported By: National Institute on Aging (NIA) Grants: R37 AG19905, N01 AG12112, and R01 AG11703

The multiple biological effects of vitamin D, along with recently reported associations of low vitamin D levels with impairments (eg, osteoporosis, sarcopenia, abnormal balance) that are risk factors for frailty provide initial support for the hypothesis that low vitamin D levels might contribute to frailty, a major geriatric syndrome. As a preliminary step in this line of research ultimately aimed at determining if vitamin D therapy might offer an opportunity for frailty prevention, we assessed the relationship of serum 25-OH vitamin D levels with frailty status in older women.

We conducted cross-sectional analysis of data from community-dwelling women 70-80 yrs pooled from the Women's Health and Aging Studies I (1992–95) and II (1994–96), Baltimore, Maryland. Frailty was defined according to the phenotype developed by Fried et al; i.e., presence of 3 or more of the following: weakness, slowness, weight loss, low energy expenditure, and fatigue. Serum 25-OH vitamin D measurements were used for vitamin D status classification. Sample size was 680.

Mean age was 74.2±2.9 years. Prevalence of frailty was 14.3% (n=97). Percentages of participants with deficient (<15 ng/mL), insufficient (15-30 ng/mL), and optimal (>30 ng/mL) serum 25-OH vitamin D levels were, respectively, 23.4% (n=159), 60.2% (n=409), and 16.5% (n=112). Crude probability of frailty was highest in those with vitamin D deficiency (20.1%), intermediate in those with vitamin D insufficiency (13.7%), and lowest in those with optimal vitamin D levels (8%). As estimated by a logistic regression model that adjusted for major confounders (age, race, education, smoking status, cardiovascular disease, diabetes, osteoarthritis, depression, creatinine clearance, and MiniMental scores), frailty likelihood was 2.5 (95%CI:.79-7.7) and 3.6 (95%CI:1.1-12.2) times higher in those with vitamin D deficiency and insufficiency, respectively, as compared to those with optimal vitamin D levels.

We observed a meaningful, statistically significant, independent, negative dose-response relationship between vitamin D levels and the probability of being frail in older women. This finding provides preliminary support for the hypothesis that vitamin D might be a potentially modifiable, causal risk factor for frailty, which remains to be ultimately tested.

P27

Outcomes of Fecal Occult Blood Testing (FOBT) Among Elderly Veterans.

D. Lee,[1,2] K. Lindquist,[1] M. Casadei,[1] L. C. Walter.[1,3] *1. Geriatrics, VAMC, San Francisco, CA; 2. University of Arkansas for Medical Sciences, Little Rock, AR; 3. Geriatrics, University of California San Francisco, San Francisco, CA.*

Supported By: This work was supported by a Medical Student Training in Aging Research (MSTAR) award administered by The American Federation for Aging Research (AFAR) and the National Institute on Aging (NIA).

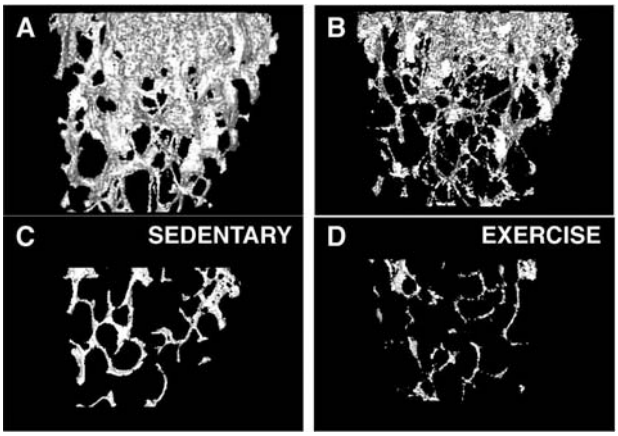
Purpose: The downstream consequences of colorectal cancer screening among the elderly population are unknown. The goals of the current study are to determine how often veterans with a positive FOBT result (+FOBT) receive follow-up colonoscopy in the subsequent year after initial screening and to determine the outcomes in those who received follow-up colonoscopy.

Methods: Subjects included 2,867 veterans aged ≥70 years who were screened with FOBT at 4 VA facilities in 2001, who did not have a history of colorectal cancer, polyps, colitis, colectomy or GI symptoms 6 months prior to test. We assessed receipt of colonoscopy within one year of +FOBT using VA and Medicare claims. Outcomes of the follow-up colonoscopy, including potential burdens and benefits of screening, were determined by detailed chart review. Burdens included complications, false-positive FOBT, and identification & treatment of inconsequential disease. Benefits included identification and treatment of large adenomas (≥1cm) and colorectal cancers (CRC) in persons with substantial life expectancies.

Results: 21% of veterans were ≥80 years old. Among the 2,867 veterans screened, 11% had +FOBT. 30% of those with +FOBT re-

ceived a colonoscopy within one year. Of the 98 veterans who received colonoscopy, 7 were diagnosed and treated for CRC and were still alive after 2 years, and 12 had large adenomas removed and were alive after 5 years. These patients potentially benefited from screening, although 3 of these patients also had complications from colonoscopy (e.g., bleeding, hypotension). 72 patients had a normal colonoscopy, indicating that the screening FOBT was a false-positive. 2 of these patients also experienced complications of bleeding. 2 other patients died within 5 years of adenoma removal, and one died within 2 years of CRC treatment. These patients suffered through the burdens of screening without benefit.

Conclusions: Follow-up rates of colonoscopy after +FOBT are low among older veterans. Among patients who pursued colonoscopy after +FOBT, 7% had early stage cancer diagnosed, were treated, and were still alive 5 years following treatment. Major complications from colonoscopy were rare (2%). Follow-up colonoscopy should be pursued in older adults with +FOBT unless they have limited life expectancy.



Paper Session
Geriatric Bioscience & Organ Specific Disorders

Saturday, May 2
9:30 am – 11:00 am

P28

Exercise has a Deleterious Effect on Bone Quality in Lamin A/C-Deficient Mice.

G. Duque,[1] W. Li,[1] L. Yeo,[2] D. Fatkin.[2] *1. Aging Bone Research Program, Nepean Clinical School-University of Sydney, Penrith, NSW, Australia; 2. Molecular Cardiology Program, Victor Chang Cardiac Research Institute, Darlinghurst, NSW, Australia.*

Supported By: University of Sydney Medical Research Foundation

BACKGROUND: Exercise is an effective intervention for fracture prevention in older adults. Although the gain of bone mass with exercise has been associated with induction of osteoblastogenesis, the mechanisms explaining this effect remain to be elucidated. Recently, we have reported that lamin A/C, a protein of the nuclear envelope, is required in osteoblastogenesis (Akter et al.,J Bone Miner Res,2008), suggesting that lamin A/C may play a role in the effect of exercise on bone. AIM: To determine whether lamin A/C is required for bone accretion during exercise. METHODOLOGY: Three-month-old female wildtype (WT) and heterozygous lamin A/C-deficient (*Lmna*$^{+/-}$) mice were subjected to a strenuous maximal exercise protocol (2 sessions/week,40 min/session) for 6 weeks. Body and cardiac weights and bone microarchitecture assessed by microCT evaluation of the distal femur were quantified and compared to sedentary mice. RESULTS: Body and heart weights were not affected by exercise in either WT or *Lmna*$^{+/-}$mice. MicroCT analysis showed a significant increase in bone structure (SMI) in exercised vs. sedentary WT mice ($p<0.001$). In contrast, exercised *Lmna*$^{+/-}$ mice showed a significant reduction in bone quality (Figure, panels B and D) as compared with sedentary *Lmna*$^{+/-}$ controls (panels A and C) including lower SMI (-47%, $p<0.02$) and trabecular thinning (-22%,$p<0.02$). CONCLUSION:Our data indicates that the presence of lamin A/C is required for the beneficial effect of exercise on bone quality. In conclusion, using a model of exercise in lamin A/C-deficient mice, we have identified a new role for lamin A/C in bone biology.

P29

Immunotherapy Attenuates Monoaminergic Neurodegeneration in Transgenic Mice.

E. Oh,[1] Y. Liu,[1] D. Borchelt,[2] J. Troncoso,[1] M. Lee.[1] *1. Johns Hopkins University, Baltimore, MD; 2. University of Florida, Gainsville, FL.*

Supported By: Johns Hopkins Alzheimer's Disease Research Center (National Institutes of Health Grant P50 AGO05146), the Adler Foundation, John A. Hartford Foundation grant #2007-0005, Center of Excellence Renewal, at the Johns Hopkins School of Medicine, and an Anonymous Foundation.

Amyloid plaques, along with neurofibrillary tangles and neuronal loss have been attributed to the pathogenesis of Alzheimer's disease (AD). Aβ peptide is derived from the cleavage of the amyloid precursor protein (APP), and is the major component of the amyloid plaques. In addition to these neuropathological changes, there are also changes at the level of neurotransmitters in AD, such as changes in the monoaminergic system.

We assessed whether immunotherapy with antibody against Aβ 1-11 (7B6) can attenuate neurodegeneration of monoaminergic system as well as reduce Aβ deposition in a transgenic mouse model of amyloidosis. Young APP/PS1dE9 transgenic (tg) mice were injected with 5 doses of 7B6 at 250 μg, from 6 to 9 months of age. The density of monoaminergic afferent fibers and area fraction of the Aβ deposits were determined using stereological methods.

APP/PS1dE9 tg mice that received 7B6 injections had significantly greater serotonergic (5-HT) axon length density (Lv) in the cortex (0.025 μm/ μm3 ± 0.002) compared to those that received Phosphate Buffered Saline PBS (0.013 μm/ μm3 ± 0.002) ($p<0.0005$). Similar findings were also seen in the hippocampus of the tg mice that received 7B6 (0.031 μm/ μm3 ± 0.003) compared to those that received PBS (0.013 μm/ μm3 ± 0.002) ($p< 0.0008$). Similar trends were also seen in the catecholaminergic (TH) axon length density (Lv). 7B6 injections also resulted in significant reduction of Aβ deposits in the hippocampus of the tg mice. We observed 28% reduction in the cortical Aβ deposits of the tg mice that received 7B6 (7.9 ± 0.9, N = 7) compared to those of the tg mice that received PBS (10.9 ± 1.3, N = 6) with trends toward significance ($p< 0.08$). There was 38% reduction in the hippocampal Aβ deposits in the tg mice that received 7B6 (4.8 ± 0.7) compared to those of the tg mice that received PBS (7.7 ± 1) ($p< 0.03$). We also observed almost three-fold increase in the plasma Aβ levels within 24 hours of 7B6 administration, which was not observed with PBS.

Immunotherapy with 7B6 has significant neurotrophic effect on monoamingergic system, and also reduces Aβ deposition in the

APP/PS1dE9 tg mice. As multiple neurotransmitter systems are thought to be involved in preservation of cognitive function, treatments that target Aβ in earlier stages of the disease may be more effective in protecting different neurotransmitter systems.

P30

Normocytic, normochromic anemia in 18 month C57BL/6 mice resembles anemia of inflammation.

O. D. Prince,[1] I. C. Prince,[1] Q. Yu,[1] C. I. Civin,[2] J. Walston,[1] C. N. Roy.[1] *1. Geriatric Medicine and Gerontology, Johns Hopkins University School of Medicine, Baltimore, MD; 2. Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD.*

Supported By: University Hospital of Basel, Switzerland; National Institute on Aging; Johns Hopkins Older Americans Independence Center; National Cancer Institute; National Foundation for Cancer Research Fellow Award; National Institute of Diabetes and Digestive and Kidney Diseases; Nathan and Margaret Shock Foundation; American Society for Hematology Scholar's Award

10% of Americans 65 years of age and older are anemic. While one third of the anemia can be attributed to nutritional deficiency, one third is associated with chronic disease and the remaining third has no clear etiology. Anemic older adults are prone to mobility difficulties, frailty, hospitalization, and have higher mortality than older adults who are not anemic. Without a clear understanding of the pathogenesis of anemia in the elderly, we lack appropriate diagnostic tools and targeted treatments to care for this critical co-morbid condition of older adults. We investigated erythropoiesis in 18-month old (aged) C57BL/6 female mice purchased from the National Institute on Aging Aged Rodent Colony. We found that aged mice had a normocytic, normochromic anemia compared to 2-month old (young) C57BL/6 female mice (hemoglobin= 13.0 ± 0.6 vs. 14.6 ± 0.8 g/dL, p<0.001). The anemia of aged mice resembled the normocytic, normochromic anemia found in young mice with chronic sterile abscess (hemoglobin= 13.8 ± 0.8 vs. 14.6 ± 0.8 g/dL, p= 0.001; neutrophils = 1.22 ± 0.72 vs. 0.65 ± 0.47 K/ μL, p= 0.02). Aged mice also had increased circulating phagocytes (neutrophils= 1.50 ± 1.29 vs. 0.65 ± 0.47 K/ μL, p= 0.01; monocytes= 0.4 ± 0.3 vs. 0.13 ± 0.06 K/ μL, p< 0.0001), consistent with anemia driven by inflammation. p-values were determined by ANOVA with tests for differences of least square means, adjusting for multiple comparisons. Next, we analyzed markers of erythroid maturation in the mouse bone marrow to assess erythroid precursor development. Flow cytometric analysis of bone marrow erythroid progenitor-precursors revealed elevated mean CD71 expression in Ter119+CD71+ precursors from aged mice as compared to young controls. We found similar results in the bone marrow of young mice with chronic sterile abscess. This result suggests a greater proportion of Ter119+CD71+ precursors are less mature in aged mice and mice with abscess. Together, these data support the hypothesis that even mild induction of inflammation in aged mice may inhibit the maturation of erythroid precursors and result in anemia.

P31

Chitotriosidase activity, a serum marker of chronic macrophage activation, exhibits age and gender differences in older adults.

R. Ramanathan,[1] A. Jain,[2] N. Fedarko.[2] *1. Medicine/Geriatrics, Albert Einstein College of Medicine, Bronx, NY; 2. Medicine/ Geriatrics, Johns Hopkins University, Baltimore, MD.*

Supported By: National Cancer Institute, National Institute on Aging, National Institutes of Health.

Background. Macrophages form the first line of defense in immune function and altered macrophage activity would have direct effects on immune function/activity. Chitotriosidase is an enzyme of the chitinase family known to be secreted only by chronically activated macrophages. Our purpose was to observe the distribution of serum chitoriosidase activity in a population of clinically defined normal subjects and study the interaction with age, gender and BMI.

Methods. Serum samples from normal (n=206) adults 20 to 90 years, were collected under IRB approved protocols. Inclusion criteria as a normal healthy serum donor included measures within the normal range for fasting glucose (< 100 mg/dl), TSH (0.5 - 2.1 mIU/mL), BMI (18.5- 25 kg/m^2). Exclusionary criteria included a history of hypertension, heart disease, diabetes mellitus, dementia, renal or hepatic dysfunction, cancer, or any chronic inflammatory condition. An aliquot of serum was added to substrate (4-methylumbelliferyl-β-D-N',N',N" triacetylchitotrioside) in reaction buffer and the evolution of fluorescent product over time was measured. The slope over 10 minutes was used to calculate enzyme activity expressed as nmol/min/ml. Comparisons between groups were investigated using a Mann-Whitney t-test. Correlations with age were tested using a Spearman correlation. Multiple regression of log transformed chitotriosidase activity was employed to study the influence of age, gender and BMI.

Results. Median values of chitotriosidae activity were significantly different ($p < 0.05$) for women versus men: 2.14 nM (range 0.21 – 5.39) versus 1.31 nM (range 0.11 to 4.24). Spearman rank correlation analysis of serum biomarker levels and donor age yielded $r = 0.54$ and $p < 0.0001$ for women and $r = 0.61$, $p < 0.0001$ for men. There was no association between chitotriosidase activity and BMI.

Conclusions. Our data clearly illustrates an age-associated increase in chitotriosidase activity. Since serum chitotriosidase arises from chronically activated macrophages, these results indicate chronic macrophage activation in older adults. This is the first study that shows chronic macrophage activation in older individuals.

P32

Prognostic Value of Newly Recognized Hyperglycemia and Diabetes in Elderly Hospitalized Patients with Heart Failure.

I. Sleiman,[1] R. Rozzini,[1] S. Boffelli,[1] A. Giordano,[1] M. Trabucchi.[2] *1. Internal Medicine & Geriatrics, Poliambulanza Hospital, Brescia, Italy; 2. Geriatric Research Group, Brescia, Italy.*

Purpose of the study: Data in the literature identify risk factors for heart failure such a age, coronary artery disease, reduced left ventricular ejection fraction, renal dysfunction male gender. C-reactive protein, systolic blood pressure, anaemia and hyponatraemia have been associated with poor prognosis. The predictive role of diabetes is controversial and few data describe the role of newly recognized hyperglycemia. For these reasons we describe characteristics of a cohort of elderly patients hospitalized with HF and the factors associated with their poor prognosis, in particular the role of newly recognized hyperglycemia and diabetes on 3-month mortality.

Methods: Three hundred forty-eight patients with AHF (mean age = 78.9 ± 8,0 years) admitted consecutively to Geriatric Ward Unit of the Poliambulanza General Hospital (Brescia, Italy) from May 2006 to May 2008 were studied. 204 patients with normal glycemic value, 104 with diabetes and 39 with newly recognized hyperglycaemia (fasting blood glucose = 126 mg/dl) have been considered. Age, gender, NYHA Classes, left ventricular ejection fraction, Acute Physiology Score (APACHE II-APS), comorbid conditions, serum albumin, serum urea, serum cholesterol, fasting serum glucose, drugs, mental and functional status, and length of stay were recorded.

Results: Total 3-month mortality was 8.1 %. In patients with normal glycemic values mortality was 5.6 %, in diabetic patients mortal-

ity was 9.6 % and in newly recognized hyperglycemia mortality was 18 %. After controlling for confounders, newly recognized hyperglycemia (=127 mg/dl) (adjusted odds ratio = 3.1, 95% confidence interval = 1.1-8.6), APS score (adjusted odds ratio = 1.1, 95% confidence interval = 1.0-1.2), and dementia (adjusted odds ratio = 2.4, 95% confidence interval = 1.0-6.7) were independently associated with 90- day mortality.

Conclusions: In elderly patients with heart failure dementia, APS score, and newly recognized hyperglycemia are associated with higher mortality rate.

P33

Atrial Fibrillation Increases Risk of Incident Coronary Heart Disease: The Honolulu Heart Program.

M. Uechi,[1] I. Schatz,[1] R. Chen,[2] C. Bell,[1] R. Abbott,[2,1] J. Curb,[1,3] P. Blanchette,[1] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI.*

Supported By: The Hawaii Medical Student Training in Aging Research (MSTAR) National Training Center (NIA, John A. Hartford Foundation & AFAR grant); The John A. Hartford Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; National Institute on Aging; National Heart, Lung, and Blood Institute.

Background: While previous studies have suggested a link between coronary heart disease (CHD) and development of subsequent atrial fibrillation (AF), little is known on whether AF is a risk factor for CHD. We studied the association between mid-life and late-life AF and incident CHD in elderly Japanese-American men.

Methods: The Honolulu Heart Program, which began in 1965, is a longitudinal study of cardiovascular diseases in 8,006 Japanese-American men born between 1900 and 1919. Subjects participated in three examinations in mid-life (between 1965 and 1974) and the 4th and 5th examinations in late-life (between 1991 and 1996) during which they had a 12-lead ECG. Mid-life AF was defined as atrial flutter or fibrillation at any of the first 3 exams, and late-life AF was defined as atrial flutter or fibrillation at either the 4th or 5th exam. Incident CHD was defined as new angina pectoris, definite myocardial infarction, PTCA or CABG, or unexplained sudden death, and all diagnoses were coded by a trained physician panel using standardized research criteria. Prevalent CHD was excluded from analyses of incidence. Complete surveillance data were available for incident CHD through December 1999, providing up to 28 years of follow-up for mid-life AF and up to 5 years of follow-up for late-life AF.

Results: The prevalence of AF was 0.7% in mid-life, 4.4% in late-life, and increased significantly with age ($p<0.05$). Age-adjusted incidence rates of CHD were significantly higher in those with AF in mid-life (25.0 vs 11.9 per 1,000 person years, $p=0.0006$) and late-life (27.1 vs 16 per 1,000 person years, $p<0.05$). Cox proportional hazards models adjusting for age, BMI, hypertension, diabetes, smoking, physical activity, cholesterol, alcohol intake, LVH, and prevalent stroke found that subjects with mid-life AF had a significantly increased risk of developing incident CHD over 28 years (RR=1.88, 95% CI=1.14-3.12, $p=0.01$). Using multivariate Cox models, subjects with late-life AF also had a significant increase in risk of developing incident CHD over 5 years (RR=1.90, 95% CI=1.02-3.53, $p=0.04$).

Conclusions: AF was a significant independent predictor of incident CHD both in mid-life and late-life. AF may be a marker of subclinical disease or may predispose to CHD due to additional shared risk factors.

Paper Session
Epidemiology

Saturday, May 2
11:15 am – 12:45 pm

P34

Endogenous Serum Testosterone and Estradiol and All-Cause Mortality in Older Men: The Honolulu-Asia Aging Study.

S. Cholitkul,[1] L. Launer,[5] S. Cholitkul,[1] C. Bell,[1] R. Chen,[2] R. Abbott,[2,1] H. Petrovitch,[2,1] W. Ross,[4,1] P. Blanchette,[1] L. White,[1,3] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI; 4. Department of Veterans Affairs, Honolulu, HI; 5. National Institute on Aging, Bethesda, MD.*

Supported By: The John A. Hartford Center of Excellence in Geriatrics, Department of Geriatric Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; National Institute on Aging.

Introduction: Serum testosterone gradually declines with age in men. Low endogenous testosterone has been associated with cardiovascular events, whereas high endogenous estrogen has been linked to risk of stroke and coronary heart disease in elderly men. We studied the associations between endogenous serum testosterone and estradiol and mortality in elderly men.

Methods: The Honolulu-Asia Aging Study is a longitudinal cohort study of elderly Japanese-American men in Hawaii, a continuation of the Honolulu Heart Program that began in 1965. At examinations that were conducted between 1991 and 1993, serum testosterone and estradiol levels were measured in 3,168 men aged 71 to 93 years. Subjects were divided into quintiles based on levels of bioavailable testosterone and estradiol. Data on all-cause mortality were available through December 2007, providing 16 years of follow-up. This study was approved by the IRB of Kuakini Medical Center.

Results: Men in the lowest quintile of bioavailable testosterone were significantly more likely to die during follow-up compared to those in the highest quintile (84.7% vs 69.7%, $p < 0.0001$). Using Cox proportional hazards models adjusting for age, BMI, hypertension, diabetes, pack-years smoking, physical activity index, cholesterol, alcohol consumption, and prevalent coronary heart disease, stroke, cancer and dementia at baseline, men in the lowest quintile of bioavailable testosterone levels had a significantly higher risk of all-cause mortality compared to those in the highest quintile (RR=1.29, 95% CI=1.12-1.48, $p<0.001$). Conversely, men in the highest quintile of bioavailable estradiol levels had a significantly higher risk of all-cause mortality compared to those in the lowest quintile (RR=1.19, 95% CI=1.04-1.37, $p=0.012$) adjusting for the above factors.

Conclusions: Low endogenous testosterone and high endogenous estradiol levels were associated with an increased risk of all-cause 16-year mortality in elderly Japanese-American. These findings should be confirmed by other prospective studies.

P35

Comorbidities and the Gender Difference in Disability: Analysis of the Cardiovascular Health Study.

H. E. Whitson,[1,2] L. R. Landerman,[2] A. B. Newman,[3] L. P. Fried,[4,5] C. F. Pieper,[2] H. J. Cohen.[1,2] *1. Internal Medicine, Duke University, Durham, NC; 2. Aging Center, Duke University, Durham, NC; 3. Medicine, University of Pittsburgh, Pittsburgh, PA; 4. Aging Center, Johns Hopkins, Baltimore, MD; 5. Mailman School of Public Health, Columbia University, New York, NY.*

Supported By: John A. Hartford Foundation Duke Center for Excellence, Hartford Geriatrics Outcomes Research Award, Duke Claude D. Pepper Older Americans Independence Center, Paul B. Beeson K23 Career Development Award, N01-HC-85079 through N01-HC-85086, N01-HC-35129, N01 HC-15103, N01 HC-55222, N01-HC-75150, N01-HC-45133, grant number U01 HL080295 from the National Heart, Lung, and Blood Institute, with additional contribution from the National Institute of Neurological Disorders and Stroke. A full list of principal CHS investigators and institutions can be found at http://www.chs-nhlbi.org/pi.htm

Background: Older women experience greater disability than their male peers. The cause of the gender gap in disability is poorly understood. The objective of this analysis is to evaluate the extent to which comorbidities explain differences in disability rates between men and women.

Methods: In this analysis of baseline data from 5,888 participants in the Cardiovascular Health Study, the effect of gender on number of activity limitations was estimated using negative binomial models. Standard criteria (Barron & Kenny,1986 J Person Social Psychol 51: 1173-1182) were applied to identify intervening variables that mediate the association between gender and disability. Indirect effects were estimated by comparing regression coefficients before and after inclusion of fifteen chronic health conditions.

Results: Women reported more activity limitations than men. After controlling for age and race, women reported 1.83 times more limitations in activities of daily living (ADLs), 1.78 times more limitations in instrumental activities of daily living (IADLs), 2.48 times more limitations in upper extremity tasks, and 1.81 times more limitations in lower extremity tasks. The most important intervening variables in the relationship between gender and disability were self-reported arthritis and obesity (measured body mass index ≥ 35). Higher rates of arthritis and obesity among women explained a substantial proportion of women's higher number of activity limitations (Table). Stroke, coronary heart disease, and emphysema were consistently associated with more activity limitations, but were less common among women.

Conclusions: The gender gap in disability is due in part to higher rates of arthritis and obesity among women. If rates of vascular disease and emphysema rise in women, the gender gap in disability would be expected to widen.

Percent of the Total Gender Difference in Number of Activity Limitations Attributable to Higher Rates of Arthritis and Obesity in Women

	ADLs	IADLs	Upper Extremity	Lower Extremity
Arthritis	32%	18%	21%	19%
Obesity	16%	6%	3%	12%

P36

Volunteering and Mortality in Older Americans.

S. J. Lee, I. S. Cenzer, K. E. Covinsky. *Div of Geriatrics, SFVAMC, UCSF, San Francisco, CA.*

Supported By: Dr Lee was supported by the Hartford Geriatric Health Outcomes Research Scholars Award and grant KL2 RR024130 from the National Center for Research Resources, a component of the NIH. Dr Covinsky was supported by grant 5K24AG029812 from the National Institute on Aging.

BACKGROUND and OBJECTIVE: Volunteering may improve health outcomes by expanding retirees' social networks, increasing their access to resources and improving their sense of self-efficacy. Previous studies showing that volunteering is associated with lower mortality have generally focused on subjects born before 1920 and have been limited by insufficient adjustment for possible confounding factors, such as socioeconomic status (SES) and chronic diseases. Thus, we examined the association between volunteering and 4-year mortality in retired Americans born before 1935 with extensive adjustment, including a propensity analysis.

METHODS: We examined 6360 retirees over age 65 enrolled in the 2002 wave of the Health and Retirement Study (HRS), a nationally representative population-based study of community-dwelling US elders (mean age 78, 60% women). Subjects were asked, "Have you spent any time in the past 12 months doing volunteer work for religious, educational, health-related or other charitable organizations?" The outcome of death by 2006 was determined by proxy report through standard HRS procedures. We sequentially accounted for possible confounding factors including demographics, SES, chronic conditions, geriatric syndromes and functional limitations. We also adjusted for a subject's propensity for volunteering, determined using all the above risk factors as well as depression, cognition and overall self-rated health.

RESULTS: We found that volunteering is strongly associated with lower mortality, with 12% of 1766 volunteers dying by 2006 compared to 26% of 4594 non-volunteers. Although our extensive adjustment markedly decreased the strength of the association, volunteering remained strongly associated with decreased mortality. (see Table)

CONCLUSIONS: In this population-based study, we found that volunteering remains a powerful predictor of decreased mortality among current US retirees, even after extensive adjustment for possible confounding factors.

Adjusted for:	Odds Ratio of Mortality for Volunteers (95% CI)
Demographics	0.44 (0.37 - 0.52)
Demographics and SES	0.48 (0.41 - 0.57)
Demographics, SES and geriatric syndromes	0.51 (0.43 -0.61)
Demographics, SES, geriatric syndromes and chronic conditions	0.59 (0.50 - 0.71)
Demographics, SES, geriatric syndromes, chronic conditions and functional limitations	0.65 (0.54 - 0.78)
Propensity (all above factors, depression, cognition and overall self-rated health)	0.70 (0.58 - 0.84)

P37

Ability to Walk ¼ Mile and Biopsychosocial Factors among Medicare Beneficiaries.

S. Hardy,[1] D. McGurl,[1] H. Degenholz.[2] *1. School of Medicine, University of Pittsburgh, Pittsburgh, PA; 2. Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.*

Supported By: NIA (P30AG024827 K23AG030977), Beeson Career Development Award

Difficulty walking ¼ mile is a precursor of further disability among older adults. Our objectives are to evaluate the prevalence of

self-reported limitations in walking ¼ mile among Medicare beneficiaries, and to identify factors associated with ¼ mile walk limitations (difficulty and inability). Using data from the nationally representative Medicare Current Beneficiary Survey, we calculated national prevalence estimates for ¼ mile walk limitations. We identified related factors using logistic regression accounting for the complex study design. Among 34.2 million beneficiaries age ≥ 65, 9.5 million (28%) and 5.9 million (16%) report difficulty and inability walking ¼ mile, respectively. Overall, those with difficulty and inability were older, and more likely to be female, and had lower socioeconomic status, more chronic conditions, and worse health behaviors. Among the 22.1 million beneficiaries who had no limitation in basic or instrumental activities of daily living (I/ADLs), having difficulty or being unable to walk ¼ mile was still independently associated with older age, non-Hispanic ethnicity, lower educational level, Medicaid eligibility, greater prevalence of chronic disease, higher likelihood of smoking, and higher likelihood of being overweight or obese. Difficulty or inability walking ¼ mile is reported by 44% of Medicare beneficiaries, and by 21% of beneficiaries without limitations in I/ADLs. Among older adults without I/ADL difficulties, assessment of self-reported ability to walk ¼ mile can identify vulnerable older adults with greater medical problems and fewer resources. Future work is needed to determine the association between ¼ mile walk ability and subsequent functional decline and healthcare utilization.

P38

Natural History of Restricting Back Pain in Community–Living Older Persons.

U. E. Makris,[1] L. Fraenkel,[2,1] L. M. Cooney,[1] L. Leo-Summers,[3] T. M. Gill.[1] *1. Medicine, Yale School of Medicine, New Haven, CT; 2. Rheumatology, Department of Veterans Affairs, West Haven, CT; 3. Program on Aging, Yale School of Medicine, New Haven, CT.*

Supported By: Dr. Makris is supported by a training grant from the National Institute on

Aging (T32AG1934).

Dr. Gill receives funding from NIA grants (R37AG17560 and R01AG022993);

Dr. Gill is the recipient of a Midcareer Investigator Award in Patient-oriented Research (K24AG021507).

Dr. Fraenkel receives funding from NIAMS K23 Award (AR048826-01 A1).

Background: Back pain is a common complaint among older persons, with prevalence rates as high as 47% in some groups. Despite the considerable morbidity and costs attributable to back pain, data describing the natural history of this disorder in older persons are sparse.

Purpose: To elucidate the natural history of restricting back pain in community-living older persons over an extended period of time.

Methods: We evaluated the 754 participants (mean age 78.4 years, 64.6% women) of the Yale Precipitating Events Project, a longitudinal study of community-living persons, aged 70+ years, who completed monthly assessments of restricting back pain, defined as staying in bed for at least half a day and/or cutting down on one's usual activities due to back pain, for up to 10 years.

Results: The overall rate of restricting back pain, based on a median follow-up of 107 months, was 5.1 per 100 person-months. 550 participants (72.9%) had at least one episode of restricting back pain and 413 (54.8%) had multiple episodes. Among the 550 participants with restricting back pain, the median number of episodes was 3 (range: 1-29), and the average (SD) duration of each episode was 1.4 (0.9) months (range: 1-11). Restricting back pain lasting at least 2 months (i.e. persistent) was observed in 238 (31.6%) participants. Of the 2,508 episodes of restricting back pain, 78.5%, 14.0%, 4.4% and 3.0% had a duration of 1, 2, 3, and 4+ months, respectively. Overall, the time between episodes of restricting back pain decreased as the number of episodes increased ($P < .001$); for example, the median number of months (interquartile range) was 9 (4-24) between the 1st and 2nd episodes, 7.5 (3-20) between the 2nd and 3rd episodes, and 5.5 (3-12) between the 3rd and 4th episodes.

Conclusion: Among community-living older persons, restricting back pain is a common disorder that often recurs, although episodes are usually short-lived. Additional research is needed to determine the risk factors and precipitants of restricting back pain, with the ultimate goal of preventing the onset and/or recurrence of this common disorder.

P39

Relationship between serum uric acid and cerebral white matter lesion in the elderly.

C. Shih,[1] C. Chen,[2] Y. Lee,[1] C. Wen,[1] H. Kuo.[1,2] *1. Department of Geriatrics and Gerontology, National Taiwan University Hospital, Taipei, Taiwan; 2. National Health Research Institutes, Taipei, Taiwan.*

Supported By: National Health Research Institutes, Taiwan

Background: Recent evidence suggests that hyperuricemia might increase the risk of cardiovascular disease. Cardiovascular risk factors are well recognized to be associated with cerebral white matter lesion (WML). The purpose of this study is to explore relationship between hyperuricemia and WML in both men and women.

Methods: Participants were randomly selected from those who signed up for the annual Health Examination for the Elderly Program in the National Taiwan University Hospital from 2006 to 2008. Information in interview data, clinical and laboratory examinations were collected. Hyperuricemia was defined by uric acid ≧7.7 mg/dL in men and ≧6.6 mg/dL in women. Two types of WML including periventricular hyperintensity (PVH) and deep white matter hyperintensity (DWMH), ascertained by cranial magnetic resonance imaging (MRI), were graded according to Fazekas rating scale. Association between hyperuricemia and the presence of WML was evaluated by using multiple logistic regression analysis.

Result: A total of 108 men and 123 women (mean age 72.5 years) were enrolled. The prevalence of hyperuricemia was 13.9% and 17.9% for men and women, respectively. The prevalences of moderate-to-severe PVH among men and women were 16.7% and 7.3%, respectively; while the prevalences of moderate-to-severe DWMH for men and women were 19.4% and 11.4%, respectively. Men in the higher tertile of uric acid had higher metabolic risks as demonstrated by having higher triglyceride ($p<0.05$), fasting glucose ($p<0.05$), and waist circumference ($p<0.01$). Women with higher uric acid also had higher levels of triglyceride ($p<0.01$). There was an independent association between hyperuricemia and DWMH among men. After controlling for age, education years, smoking, alcohol consumption, composite score of various metabolic risks, MRI-shown silent infarct, and the use of anti-hypertensives, lipid-lowering and anti-diabetic agents, the odds ratio of moderate to severe DWMH comparing men with hyperuricemia to those without was 4.44 (95% CI 1.10-17.83). The association was not evident among women. We did not find an association between hyperuricemia and PVH for both men and women.

Conclusion: Hyperuricemia is positively associated with higher grade of DWMH in high-functioning elder men. Uric acid may be an intervenable target to prevent the development of WML among elderly men.

Paper Session
Geriatric Syndromes

Saturday, May 2
3:00 pm – 4:30 pm

P40

Uncontrolled Hypertension,orthostatic hypotension and recurrent falls in the community-dwelling elderly population:the MOBLIZE Boston study (MBS).

A. S. Gangavati,[1,3] I. Hajjar,[2,3] L. Quach,[2] L. A. Lipsitz.[1,3] *1. Beth Israel Deaconess Medical center, Boston, MA; 2. Hebrew SeniorLife, Boston, MA; 3. Harvard Medical School, Boston, MA.*

Supported By: Hartford Center of Excellence

Orthostatic hypotension(OH) is a risk factor for recurrent falls among elderly nursing home residents.The risk of falls in community-dwelling elderly individuals with hypertension (HTN) and/or OH is unknown. Aims:Assess the association between HTN,OH,and the combination with the 1-year risk of recurrent falls in a community-dwelling elderly population. Compare various definitions of OH(systolic & diastolic; at 1 & 3 minutes) and their association with the 1-year recurrent fall risk. Methods: Data were obtained from the MBS,a prospective population-based study that examines risk factors for falls in 765 elders.Supine & standing(at 1 & 3 minutes)systolic & diastolic BP (SBP & DBP)measurements were obtained.Falls data were obtained from monthly calendars & phone calls if calendars were not returned.Definitions:Recurrent falls:≥2 falls in 1 year from baseline BP measurement.Normotension (NTN):BP:≤120/70, Controlled hypertension(CHTN):History of HTN with BP≤140/80 & Uncontrolled hypertension (UCHTN): >140/80. OH:≥20 mm Hg SBP drop from supine to 1 or 3 minutes standing;and/or ≥ 10 mm Hg DBP drop supine-stand at 1 or 3 minutes).Differences between those with and without OH by different definitions were tested using chi-square tests for dichotomous and t-tests for continuous variables. Cox proportional hazards was used to determine risk of recurrent falls. Results:The prevalence of OH was 3/153(2%)in NTN, 20/383(5%)in CHTN, & 36/186(20%)in UCHTN elderly subjects(overall prevalence was 8% (59/722).Neither HTN status nor OH was individually associated with recurrent falls.However,after adjusting for age,sex,race and treatment, those with UCHTN and OH (defined as drop of 20 or more in SBP at 1 minute) had the highest 1 year risk for recurrent falls compared to those with UCHTN without OH(HR= 2.45 95%CI 1.33-4.51).OH in subjects with CHTN(HR=0.66 95%CI 0.24-1.80)or NTN(HR=0.93 95%CI 0.13-6.83), was not associated with recurrent falls. Only a SBP drop of ≥20 mm Hg at 1 min(and not 3 min)was associated with recurrent falls (p=0.004).Conclusion:The prevalence of OH was highest in community dwelling elders with uncontrolled hypertension. OH defined as a SBP decline ≥ 20 mm Hg was associated with a two-fold risk of recurrent falls in these subjects.Thus,control of HTN may reduce OH and falls in elderly people.

P41

Vertebral Fractures and Misclassification of Osteoporosis in Men with Prostate Cancer.

S. B. Sullivan,[1] J. Wagner,[1] J. Nelson,[2] S. Perera,[1] S. L. Greenspan.[1] *1. Medicine, University of Pittsburgh, Pittsburgh, PA; 2. Urology, University of Pittsburgh, Pittsburgh, PA.*

Supported By: Medical Student Training in Aging Research, T32 AG026778

Background: Androgen deprivation therapy (ADT) is a common treatment for non-metastatic prostate cancer and is associated with increased bone loss and fracture. A vertebral fracture (VF) identifies a patient who has clinical osteoporosis, but 2/3 of VFs are asymptomatic. Vertebral Fracture Analysis (VFA) is a dual-xray absorptiometry (DXA) based technology that assesses VFs. We sought to determine if VFA will increase the diagnosis of osteoporosis in men with prostate cancer on ADT otherwise being screened for osteoporosis by Bone Mineral Density (BMD) alone.

Methods: 40 men with age ≥ 60 with nonmetastatic prostate cancer on ADT for ≥6 months were recruited. BMD of the spine and hip were assessed by DXA and classified using standard criteria for osteoporosis (T-score ≤ -2.5 SD). Participants underwent VFA and completed questionnaires. The VFs were verified by standard x-rays.

Results: The mean age of the participants was 76 years. Men with VFs (VF+) were on ADT longer and had lower BMD than those without (VF-) (table, *p<.05). For each additional year of ADT duration, the odds of a VF increased by 64% (odds ratio=1.643; p=0.0066). 15% of total participants were classified with osteoporosis by standard DXA. 42% of men without osteoporosis by DXA had VFs assessed by VFA. This suggests that of 14/20 or 70% patients with clinically defined osteoporosis would not have been diagnosed by DXA alone.

Conclusions: Men with VFs have lower BMD than those without. The diagnosis of osteoporosis is common in men undergoing ADT. BMD criteria alone will under-diagnose osteoporosis. VFA increases the rate of diagnosis and reduces the misclassification of osteoporosis in men with prostate cancer, compared to BMD criteria alone.

		VF + (n=18)	VF - (n=22)
Clinical Characteristics	Age (years)	78	75
	BMI (kg/m^2)	29.1	29.0
	Duration ADT (years)*	6.4	1.8
	Daily Calcium Intake (mg)	1368	1112
	Daily Vitamin D Intake (IU)	833	632
BMD (g/cm^2)	Spine PA*	1.005	1.169
	Total Hip*	0.885	0.988
	Femoral Neck*	0.699	0.813

P42

Association of Executive Function Domains with Curved and Straight Path Walking.

J. A. Robertson,[1] J. M. VanSwearingen,[1] D. Wert,[1] E. Hile,[1,2] S. Studenski,[2] J. S. Brach.[1] *1. Physical Therapy, University of Pittsburgh, New Castle, PA; 2. Medicine, University, Pittsburgh, PA.*

Supported By: T32 AG021885; P30 AG024827; K23 AG026766.

Purpose: Gait speed and variability measured during straight path walking have been associated with deficits in white and grey matter regions of the brain in older adults. Curved path compared to straight path walking requires planning and motor control to adjust steps, as well as gaze, head and trunk position to navigate the curve. The purpose was to examine the association between domains of executive function and curved and straight path walking. We expected a differential association of executive function domains to curved and straight path walking, with the set-shifting domain related to curved, and speed of processing domain to straight path walking.

Methods: Eighty community-dwelling older adults (mean age = 76.95± 5.35 years) who could ambulate independently participated. Measures of executive function, set-shifting (Trails B) and speed of processing (Digit Symbol Substitution Test, DSST) domains and curved path (Figure 8 Walk steps) and straight path (gait speed) walking were recorded to examine the associations of executive function and gait. Pearson product moment correlations were used to examine the association between domains of executive function and straight and curved path walking, adjusting for age and education.

Results: Set-shifting was related to curved and straight path walking, with greater executive dysfunction (greater Trails B score)

associated with more Figure of 8 walk steps, r= .512, p<.001, and slower speed, r= -.360, p=.001. Speed of processing related only to straight path walking, with greater executive dysfunction (lower DSST score) associated with slower speed, r=.247, p=.029.

Conclusion: Curved path walking represents planning and motor control aspects of walking, and is associated with different cognitive functions than straight path walking. Brain abnormalities with aging may differ with specific deficits in walking ability.

P43

Validation of a Measure of Smoothness of Walking.

J. S. Brach,[1] D. McGurl,[2,3] D. Wert,[1] J. M. VanSwearingen,[1] S. Perera,[3] R. Cham,[2] S. A. Studenski.[3] *1. Physical Therapy, University of Pittsburgh, Pittsburgh, PA; 2. Bioengineering, University of Pittsburgh, Pittsburgh, PA; 3. Medicine, University of Pittsburgh, Pittsburgh, PA.*

Supported By: Paul Beeson Career Development Award (K23 AG026766-01); Pepper Center (P30 AG024827-01)

Purpose: Normal human walking is based on smooth forward progression with a regular pattern of steps. Altered biomechanics and/or neural control disrupt the timing of postures and muscle patterns necessary for smooth and regular stepping. Harmonic ratio of the trunk acceleration series has been proposed as a measure of smoothness of walking. We sought to validate this measure of smoothness by examining the measure in groups expected to differ in smoothness (i.e. young and old) and across walking conditions expected to impact smoothness (i.e. straight path, curved path, and dual task).

Methods: Thirty young (mean age = 24.4 years) and 30 older adults (≥65 years) who could ambulate independently without an assistive device participated. We measured linear acceleration of the body along vertical, anterior-posterior and medial-lateral axes using a tri-axial accelerometer firmly attached to the skin over the L3 segment of the lumbar spine during straight path, curved path, and dual task (reciting every other letter of the alphabet) walking. The harmonic ratio was calculated as a measure of smoothness and rhythm of the acceleration patterns, with greater values indicating greater smoothness in walking (Menz et al, 2003). A two-way ANOVA was used to compare smoothness across age groups and conditions.

Results: Older adults were less smooth than young adults in all walking conditions (anterior-posterior harmonic ratio, old versus young: straight 2.71 versus 4.46; curved 2.42 versus 3.82; dual-task 2.09 versus 3.51, all p<0.0001). Smoothness decreased as the extent of challenge increased (anterior-posterior harmonic ratio for old: straight 2.71, curved 2.42, dual-task 2.09; young: straight 4.46, curved 3.82, dual-task 3.51). Results were similar for vertical and medial-lateral axes.

Conclusions: The harmonic ratio, calculated from trunk acceleration, is a valid measure of smoothness of walking that could be used in the future to study changes in walking due to specific pathologies and to assess the effects of interventions. Further study is needed to elicit the contributors to and consequences of decreased smoothness.

P44

Patterns of one year functional recovery differ by areas of function and age in elderly hip fracture patients.

J. Ortiz, M. Vidan, M. Alonso, M. Toledano, J. Serra. *Geriatric Service, Hospital Gregorio Marañon, Madrid, Spain.*

Supported By: Health Department

Objective: To better understand patterns of functional recovery along with factors that affect the recovery among older hip fracture patients using longitudinal data analysis.

Subjects and Methods: A 1-yr prospective longitudinal study. Information was obtained through structured interviews at admission and 3, 6, and 12 months after hip fracture and from medical chart review. The sample consisted of 362 one-year survivors admitted for hip fracture surgery. Functional status was measured by the ability to walk independently and 6 basic activities of daily living (ADLs). Age was stratified into 3 categories: <75, 75-84, and 85+ yr. Level of functional recovery in each functional area, time to achieve recovery and factors associated were estimated using Generalized Estimating Equations (GEE).

Results: Population characteristics included age 81 yr (range 65-103); 85% women; 2.7±1.4 co-morbid conditions; 19% with dementia. At baseline, 42% were fully independent in ADL and 59% independent in ambulation. Postoperative medical complications occurred in 56%. After 1-yr, 53% had recovered their baseline ambulation and 53% the overall ADLs. The longitudinal GEE analysis showed a different pattern of recovery between ambulation and ADLs. Ambulation recovery improved significantly over the year (p<0.001 lineal) with a significant (p<0.05) interaction between time and age: the younger group (<75 yr) achieved ambulation recovery up to 6 months, the intermediate age group (75-84 yr) continue to improve throughout the year, and the eldest group (85+ yr) only improved after 6 months. Overall ADLs only improved in the first 6 months, and there was no interaction between time and age. In addition to time, age was strongly and negatively associated with ambulation and ADL recovery (both p<0.001). Other factors were only associated with ambulation recovery and included baseline function (p<0.001) and the presence of postoperative medical complications (p<0.01).

Conclusions: Functional disability is important after hip fracture. Patterns of functional recovery differ by areas of function and age with oldest patients having a particular high risk of decline and delayed ambulation recovery

P45

The Impact of Incident Falls and Fractures on Life-Space Mobility.

R. M. Allman,[1,2] P. Sawyer,[2] C. J. Brown,[1] E. V. Bodner,[2] J. M. Roseman.[2] *1. Birmingham/Atlanta VA GRECC, Birmingham, AL; 2. University of Alabama at Birmingham, Birmingham, AL.*

Supported By: National Institute on Aging

Purpose: To understand the impact of falls and fractures on life-space mobility over six-month intervals.

Methods: Data from the UAB Study of Aging, an observational cohort study of life-space mobility among community-dwelling older adults aged 65+ and stratified by gender, race, and rural/urban residence, were used to calculate life-space change scores for all 6-month intervals over a four year period. Interviews conducted every 6-months defined life-space mobility scores at the beginning and end of intervals, as well as a history of falls, injurious falls, fractures, or hip fractures during the interval. Life-space scores ranged from 0 -120; higher scores reflecting greater mobility in the month prior to the assessment. Associations between falls and fractures with 6-month changes in life-space were examined using simple descriptive and multivariable models.

Results: 970 participants had at least one interval with baseline and follow-up interviews. Mean age was 75.3 (SD=6.7); 50% female; 59% African American; 52% rural. Over four years, falls were reported by 454 (46.8%); injurious falls by 171 (17.6%); fractures by 56 (5.7%), and hip fractures by 9 (0.9%). There were 6,629 six-month intervals (885 with falls, 222 with injurious falls, 58 fractures and 9 hip fractures; 5731 with neither fall nor fracture). Mean unadjusted life-space mobility change scores for intervals with self-reported falls, injurious falls, fractures, and hip fractures were -3.2, -6.1, -14.1, and -20.6, respectively. The mean unadjusted life-space mobility change score was -1.2 for intervals with none of these events. Multivariable linear regression models were used to adjust for sociodemographic factors, co-morbidity, cognition, depression, and symptoms. Falls, injurious falls, fractures, and hip fractures all remained significant, independent predictors of 6-month life-space declines.

Conclusions: Life-space mobility demonstrates significant declines associated with falls, injurious falls, fractures, and hip fractures. These declines are independent of other predictors of mobility loss; the decline magnitude correlated with the expected impact, the least change was observed for falls and the greatest for a hip fracture. These results provide evidence for the utility of life-space as a measure reflecting clinically important changes in mobility among community-dwelling older adults.

Poster Session A

Thursday, April 30
11:45 am – 1:15 pm

A1

Comparable improvements in gait and balance across different body composition phenotypes following 20 weeks of Tai Chi or seated exercise.

D. L. Waters, L. Hale, A. Grant, P. Herbison, A. Goulding. *Division of Health Sciences, University of Otago, Dunedin, New Zealand.*

Supported By: Accident Compensation Corporation New Zealand and University of Otago Research Grant

Both sarcopenia and obesity can negatively impact gait and balance in older adults. Whether sarcopenia and obesity affect improvements of gait and balance elicited by exercise intervention is unknown. Healthy older adults (49 males, 134 females, age 72.7 ± 6yr) at an increased risk of falling were recruited into a multi-centered Tai Chi randomized controlled trial. Interventions were Tai Chi twice a week, Tai Chi once a week, or seated exercise (control) for 20 weeks. Total and appendicular skeletal muscle mass (ASM), percent and total fat mass were assessed by dual energy x-ray absorptiometry (Lunar DPX-L) at baseline. Timed up and go (TUG), 30s chair stand (CS), step test (ST), and single leg stand (LS) were measured at baseline and post-intervention at 20 weeks. At baseline low lean and high fat mass (sarcopenic obese) participants had lower CS (9.1, 95% CI 7.4 to 10.9, p = 0.03) and ST (9.0, 95% CI 7.8 to 10.2, p=0.03) scores compared to normal lean/low fat (normal lean), low lean/low fat (sarcopenic), and high lean/high fat (obese) participants. Following 20 weeks of exercise classes, CS ($p<0.001$) and ST ($p<0.001$) significantly improved in all groups independent of exercise allocation or body composition phenotype. The sarcopenic obese group scored lower on CS (11.1, 95% CI 9.6 to 12.6, p=0.04) and TUG (9.5, 95%CI 8.0 to 10.0, p=0.03) post- intervention compared to the other body composition groups. However their improvements in these scores were clinically relevant as the sarcopenic obese values rose to fall within normative ranges for age. Seated exercise was equally effective for improvements in measures of functional gait and balance compared to Tai Chi either once or twice a week. Although body composition did not predict improvement, this study provides evidence that older adults at increased risk of falling can benefit functionally from 20 weeks of either standing or seated exercise across a range of body compositions.

A2

Menopausal Symptoms: The Role of Fitness and Fatness.

K. M. Flint, R. E. Van Pelt, K. L. Moreau, W. M. Kohrt, W. S. Gozansky. *Division of Geriatric Medicine, University of Colorado Denver, Aurora, CO.*

Supported By: T35AG026736 (KMF), K01AG19630 (REV), R01AG027678 (KLM), R01AG018198 (WMK), K23AG026784 (WSG), P30DK048520, M01RR00061.

PURPOSE: Fitness and fatness have been linked to both alleviating and exacerbating menopausal symptoms (MSx), specifically hot flashes. Exercise may decrease MSx by up-regulating opioid tone but may increase MSx by raising core body temperature. Obesity may decrease MSx by adipocyte estrogen production but may increase MSx via insulation effects. Previous findings have been limited by self reported physical activity and anthropometric data. Thus, we used direct measures of aerobic fitness and adiposity to determine their relation with MSx using a multidimensional, validated scale (Menopausal Symptom List; MSL). METHODS: Cross-sectional analysis of baseline data from postmenopausal women recruited for hormone therapy (HT) studies. Women were nonsmokers and had not used HT for >3mos. Range was 0-185 for the MSL and 0-60 for the vasosomatic subscale (VS). Aerobic fitness (VO2peak) and body composition were assessed via treadmill testing and DXA, respectively. Unpaired t-tests, Pearson correlations and backward linear regression modeling were performed. RESULTS: Women (n=171) were 56.7±4.4 yrs old (mean±SD), 8.5±6.9 yrs postmenopausal, 83% Caucasian, BMI 29.0±4.8 kg/m2, 42.2±5.8% body fat, 27% had a hysterectomy (hyst), 29% had a history of depression (HxDep), VO2peak was 22.3±4.5 ml/kg/min, MSL was 74±26 and VS was 22.4±9.4. Women with hyst and HxDep had higher MSL and VS scores ($p<0.05$). MSL and VS were correlated with % fat mass (r=0.15, p=0.05 MSL; r=0.19, p=0.01 VS), age (r=-0.16, p=0.04 MSL; r=-0.13, p=0.08 VS), and VO2peak (r=-0.20, p=0.01 MSL; r=-0.20, p=0.01 VS). In multivariate models, 17% of the variance in MSL was explained by age, VO2peak, HxDep and hyst whereas 11% of the variance in VS was explained by age, VO2peak, and HxDep. CONCLUSIONS: We found that elevated MSx were independently associated with younger age, lower aerobic capacity, HxDep and hyst. Although adiposity was related to higher MSx, this association did not persist in multivariate models. However, VO2peak remained a significant predictor of MSL and VS. It is possible that physical fitness modulates MSx via changes in adiposity. Intervention studies altering aerobic capacity with and without weight loss are needed to further elucidate the relation of fitness and fatness to MSx.

A3

Cascading Drug Errors–Hyponatremia Followed by Hypernatremia:Mirtazapine–induced SIADH and Volume Depletion from Demeclocycline.

A. V. Marin-Ruiz, F. Gu, M. Brennan. *Internal Medicine, Baystate Medical Center, Springfield, MA.*

Introduction:Adverse drug events are common and impose a heavy burden on elders and the health care system. Geriatricians often must assess for drug-related functional decline and delirium. The authors report a case in which mirtazapine triggered SIADH and delirium. Later, the treatment of hyponatremia resulted in dehydration and hypernatremia.

Case:A 75 y/o depressed man with weight loss was begun on mirtazapine. He developed falls, functional decline and confusion. In the ED he was unkempt and delirious but euvolemic and neurologically non–focal. Medications included: buspirone, mirtazapine, benztropine and oxybutynin. He had a mild anemia and sodium of 118. A head CT, complete metabolic panel, TSH and cortisol were normal. Geriatrics was consulted for delirium and self-neglect. Urine and serum studies documented SIADH. The geriatrician and a clinical pharmacist agreed that mirtazapine was the cause and calculated a clearance of 280 hrs. Mirtazapine and the anticholinergic drugs were stopped. Hyponatremia eventually resolved with demeclocycline. Prior to discharge, the team contacted the subacute providers to inform them that the SIADH should resolve 11 days after drug discontinuation. Ongoing fluid restriction and demeclocycline beyond that time might result in dehydration. Unfortunately, despite this communication, the demeclocycline was not tapered and labs were inconsistently monitored. Two weeks later the patient was readmitted with hypotension, volume depletion and hypernatremia. After volume resuscitation he stabilized and returned home.

Discussion:Geriatric depression has a prevalence of almost 10 % in some studies. SSRIs and NSRIs are first-line and may be safer than heterocyclics but still have a risk of ADEs. Mirtazapine is useful for patients with weight loss and anxiety. It can be sedating but is fairly well tolerated. SSRIs frequently cause SIADH but many clinicians are unaware that mirtazapine also triggers SIADH.

Conclusion:Depression in elders must be treated but close monitoring is critical and pharmacists can assist frontline clinicians. Geriatricians and primary care providers must be aware that mirtazapine can cause SIADH resulting in confusion and functional decline. This case highlights the near disasters that flow from current discontinuities in our health care system. There is a pressing need for strategies to improve communication across transitions in care.

A4

QUINOLONE INDUCED HYPOGLYCEMIA IN AN ELDER WITH ACUTE KIDNEY INJURY.

A. Bhargava, M. Brennan. *Division of General Medicine and Geriatrics, Baystate Medical Center, Springfield, MA.*

Introduction: Adverse drug events are a common cause of morbidity/mortality in elders. Geriatric patients with medical comorbidities, polypharmacy and dementia are at high risk. The authors report the case of a diabetic nonagenarian with acute renal failure who became hypoglycemic due to impaired renal clearance of fluoroquinolones.

Case: A 91 year old man with atrial fibrillation, diet-controlled diabetes, dementia and chronic kidney disease (baseline creatinine of 0.9) was admitted post fall with worsening confusion and acute renal failure. He received ciprofloxacin for a urinary tract infection, which was changed to levofloxacin on admission. Patient was on no oral hypoglycemics. On presentation he was dehydrated, but hemodynamically stable. Patient was alert, but more confused than baseline. Neurological exam was non-focal. Bloodwork revealed a BUN of 69 mg/dL and Cr. of 4.9 mg/dL, (creatinine clearance-9.4.) Head CT showed small vessel ischemia but no acute pathology. He improved gradually with conservative management and intravenous fluids. Simultaneously, the patient became unresponsive and was found to have severe hypoglycemia (24 mg/dL). This responded to glucose administration and cessation of quinolone antibiotics.

Discussion: Fluoroquinolones are widely used in both inpatient and ambulatory settings. Both ciprofloxacin and levofloxacin are renally excreted, with respective serum half-lives of 4 hrs and 6-8 hrs. The half-life of ciprofloxacin is prolonged by about 20% in elders, with renal clearance dropping further in the setting of acute kidney injury. Fluoroquinolones alter glucose homeostasis and insulin production by affecting pancreatic beta-cell ATP-sensitive K+ channel activity, thus causing hypoglycemia.

Conclusion: Polypharmacy is common in geriatric patients who suffer from a myriad of ailments. Medication lists must be constantly reviewed to limit adverse drug events/interactions. Diabetes, kidney problems and infections are common in elders. Geriatricians should be aware of the potential danger of using fluoroquinolones in older patients with renal impairment to prevent life-threatening iatrogenic hypoglycemia. PCPs must recall that even a creatinine of 0.9 represents significant renal impairment in frail nonagenarians and carefully dose adjust antibiotics accordingly.

A5

A Case of Reversible Dementia.

A. Allie. *Geriatrics, University of Chicago, Chicago, IL.*

History and Examination:

An 87 year-old woman with a history of dementia presented to clinic after moving from out of state to live with her son. She could provide only some of her past medical history, and her son was unaware of the details of her ongoing care. She complained of persistent knee pain attributed to osteoarthritis, achiness, unsteady gait, a recent fall, and occasional constipation. She had recent weight loss partially mitigated by the initiation of megestrol, and also reported increasing difficulty performing her IADLs. She described a 'low mood' intermittently.

Her past medical history included dementia for which she took donepezil, as well as hypertension, hyperlipidemia, a TIA, remote breast cancer status post mastectomy and chemoradiation, urge urinary incontinence and osteoporosis. Her social history was significant for a thirty pack-year smoking history, and her family history was significant for coronary artery disease and cerebrovascular disease.

Physical exam revealed a thin woman with a left knee effusion and unsteady gait, but was otherwise unremarkable. She had a flat affect and delayed responses. She scored 19 of 30 on a Folstein Mini-Mental State Exam losing points for orientation, calculation and delayed recall.

Diagnosis and Management:

A basic metabolic panel revealed serum calcium of 13.4 mg/dL, and ionized calcium of 7.20 mg/dL. The patient was urgently managed with intravenous hydration resulting in improved energy and mood with normalization of her calcium. Workup revealed normal renal function, an elevated serum PTH, no evidence of malignancy, and a Sestamibi scan was suspicious for a parathyroid adenoma. Attempted medical management of her hypercalcemia failed, resulting in multiple hospitalizations for intravenous hydration; eventually she underwent a parathyroidectomy.

The patient returned to clinic with a stable normalized calcium and brighter affect. Her MMSE improved by 5 points. She had regained her weight off megestrol. Her symptoms of urinary incontinence and constipation improved, and she had returned to her baseline independance in IADLs.

While dementia is common, so are reversible conditions that can worsen cognition like primary hyperparathyroidism. This case highlights that an acceleration in a demented patient's decline merits the evaluation for contributing reversible diseases.

A6

Acute Disseminating Encephalomyelitis (ADEM).

A. S. Rao,[1,2] P. Mead,[2] S. A. Kaplan,[3] S. Ramsaroop.[1,2] *1. Geriatrics & Gerontology, Weill Cornell Medical College, New York, NY; 2. Medicine, Weill Cornell Medical College, New York, NY; 3. Internal Medicine, Montefiore Medical Center, Bronx, NY.*

Case:86 yo woman with HTN, A. Fib., Hyperlipidemia, & Breast Ca. presented to the ER with weakness & altered mental status. Cough, hiccoughs, nausea, diminished oral intake, & a 25 lb weight loss started 3 wks prior to admission (PTA). CT scans were unremarkable. Thorazine improved her hiccoughs. 1 wk PTA, she became confused. Previously independent & cognitively intact, she started neglecting her ADLs & IADLs. She also discontinued her medications (Warfarin, Amlodipine/Benazepril, Arimidex, Chlorpromazine, Aldactazide, Atenolol). Unkempt, confused. Afebrile, stable vital signs. Flattening of left nasolabial fold, clear lungs, irregular s1s2, old systolic murmur. Left lower extremity weakness. No rashes, meningeal signs. Normal labs except LDH 612. EKG: a. fib/no acute changes. Plain films normal. MRI brain: no acute infarct/hemorrhage, metastases or carcinomatosis; multiple lesions consistent with acute small vessel infarcts. MRI of the spine: nonspecific abnormal signal intensity in the left thoracic spinal cord.

Course: Mental status declined & she became lethargic. A heparin drip was started. LP revealed mildly elevated protein, but otherwise normal. One episode of gurgling, hypotension,& desaturation requiring suctioning/intravenous fluids;antibiotics added. EEG: no seizures. Transferred to MICU & bronchoscopy showed an aspirated gold tooth. A family meeting was held & made comfort care. Supportive care was provided & the patient passed away. Autopsy disclosed an acute pulmonary embolus, bilateral aspiration pneumonias & ADEM.

Discussion: ADEM is a rare inflammatory disorder that affects the CNS. It is often preceded by an infection/immunization. The pathogenesis remains unclear & the diagnosis is made based on clinical & radiologic features. It is most often seen in children & adult cases are rare;cases in older adults are sparse. Treatment includes high dose steroids, IVIG, plasmapheresis, or chemotherapy. Most patients recover, but may have residual deficits. Studies specifically in older adults are lacking. Though mental status changes are a frequent presentation of illness among older adults, our case demonstrates the importance of maintaining rarer causes in the differential. It also demonstrates how an older adult's multiple comorbidities & PMH can bias against a thorough differential.

A7

Fulminant hepatic failure in an older woman being treated for tuberculosis.

C. Liu, D. Oates. *Geriatrics, Boston University School of Medicine, Boston, MA.*

BACKGROUND Although TB is uncommon in older adults,studies suggest rates of hepatoxicity increase with age.We present a case of fulminant hepatic failure due to TB treatment in an older patient with no prior history of liver disease.

CASE A 66 year old female with a history of COPD underwent a chest CT which revealed a 1.3 cm right upper lobe nodule.As the patient had a history of smoking,she underwent fine needle aspiration of the nodule,which was complicated by excessive bleeding.She then had a mild elevation of her transaminases thought to be due to hypoperfusion which resolved.Cytology demonstrated necrotizing granulomas,but the AFB and GMS stains were negative.Preliminary cultures were negative.On further history,the patient stated she had been diagnosed with TB at age 34 and was treated with a single drug for a year,though she could not recall its name.Given the possibility of culture negative TB,the pulmonary service recommended a regimen of isoniazid,rifampin,and ethambutol.Pyrazinamide was not included due to the history of elevated transaminases post biopsy.Two days before discharge,the patient was started on the regimen and on day of discharge her ALT and AST were 47 and 33,respectively.One week later, she experienced nausea and was brought to the emergency department.She was found to have an ALT of 2200, an AST of 1300 and an INR of 1.3.She was admitted to the MICU for fulminant hepatic failure.Her LFTs continued to increase and her INR rose to 2.29 despite aggressive treatment.On hospital day 2,the patient suffered a cardiac arrest and the family requested that life supporting care be withdrawn the next day.

DISCUSSION This patient was appropriately treated according to CDC guidelines for culture negative TB infection,given her age and medical conditions.Prior studies of patients being treated for TB have shown higher one year mortality rates among older adults when compared to younger patients (26.5% versus 4.1%).While hepatoxicity rates associated with isoniazid increase with age,little is known about the relation between hepatoxicity and older age with rifampin and pyrazinamide.The only age related guideline in the current recommendations is more frequent laboratory monitoring in those over age 35.There are no present guidelines for modification of TB regimens for the older adult.

CONCLUSION Research focused on the safety of anti-TB medications and the value of additional monitoring to prevent adverse outcomes in older adults is needed.

A8

A 74 Year Old Man with Digital Gangrene with a History of ESRD due to HTN.

J. Winkler,[1] J. Kochar,[1] J. Sebastian,[1,2] E. H. Duthie.[1,2] *1. Medicine, Medical College of Wisconsin, Milwaukee, WI; 2. Medical Subspecialties, Milwaukee VA, Milwaukee, WI.*

Supported By: Department of Veterans Affairs

ABSTRACT BODY: A 74 year old man with end stage renal disease due to HTN, nephrosclerosis on hemodialysis since 5/2007 with multiple medical problems was admitted to the hospital for dry gangrene on his left 1st finger and multiple toes on his left foot. He had a 10 month progression of intermittently blue fingers, and a 7 week progression of intermittently blue toes. He had debilitating pain from these lesions, affecting his ADL's. He never developed any fever, but had persistent hypotension throughout his hospital stay. He had decreased upper extremity pulses. Dry gangrene was noted on his right index finger distal to DIP joint; his 4th right finger had a 2cmX1cm gangrenous ulcer on lateral aspect. His right middle finger had a splinter hemorrhage in distal lateral nail bed. His left index finger had some cyanosis and splinter hemorrhage in distal lateral nail bed. Both of his feet and ankles were cool and DP and PT pulses were difficult to elucidate on both feet. There were multiple areas of cyanosis and gangrene 2-3mm in between all toes proximally. His right foot had splinter hemorrhages on the hallux with 2 areas of cyanosis on plantar surface. His left foot showed complete gangrene of his 2nd and 3rd toes. There was also a 1.5cmX1cm ulceration without any exudates on lateral aspect of left hallux. TTE prior to admission was negative. His CBC was unremarkable. Phosphate was 7.6 mg/dl, Calcium 9.2 mg/dl, BUN 30 mg/dl, Cr 3.6 mg/dl, ESR 83 mm/h, CRP 10.1 mg/dl, PTH 1114 pg/ml. Cryoglobulin was negative. Lupus anticoagulant was positive, ANA negative. There was severe arteriolar calcification of both hands and both feet seen on radiograph. ABI could not be assessed due to severe arterial calcification. The clinical, radiological and biochemical findings were suggestive of calciphylaxis (uremic calcific arteriolopathy). The diagnosis of calciphylaxis is mainly made by radiography showing calcification of medium and small arteries, hyperparathyroidism, hyperphosphatemia, and hypercalcemia in some patients. The gold standard for diagnosis is biopsy. The patient developed shock, asystole and died. Infections and sepsis are the leading cause of mortality in this disease. Studies have suggested a positive association between calcium phosphate product (~70 in this case) above 50 and mortality.

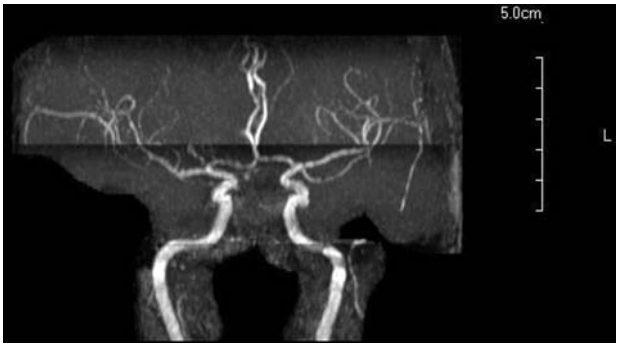
A9

Getting t-PA on Your 100th Birthday: A Case of a Centenarian Successfully Treated with Thrombolysis for an Acute Stroke.

J. Angeles. *Section of Geriatrics, Department of Internal Medicine, St. Luke's Roosevelt Hospital Center, New York, NY.*

Supported By: Author has no financial disclosures.

Background: Elderly patients are often a priori excluded from receiving tissue plasminogen activator (t-PA) despite being shown to be beneficial in selected patients independent of age. Described is a case of a female centenarian who had rapid improvement in neurological deficits after receiving t-PA. Case description: A 100-year-old cognitively and functionally intact African American woman presented to the ED within an hour of the onset of right hemiparesis and hemisensory loss. Initial head CT showed neither infarct nor hemorrhage. Intravenous t-PA was administered in the ED prior to the 3-hour window. She recovered remarkably and was ambulatory on discharge to a rehabilitation facility after 8 hospital days. Follow up cranial MRA showed absence of occlusive thrombi in the intracranial and carotid arteries. Conclusion: Thrombolytic therapy with t-PA should be considered in an eligible elderly patient with acute ischemic stroke.



Follow up neck and brain magnetic resonance angiography 2 days after treatment with t-PA

A10

Quetiapine And Urinary Retention In An Elderly Female.

J. A. Adamczyk,[1] W. Dombrowski,[2] C. Hernandez.[2] *1. Medicine, Overlook Hospital, Summit, NJ; 2. Geriatrics, Mount Sinai Hospital, New York, NY.*

BACKGROUND: There is a growing elderly population with cognitive, behavioral and mood disorders; these patients are often treated with atypical antipsychotics such as quetiapine. In general, elderly are more sensitive to medication side effects. Review of the literature reveals few cases of urinary retention associated with high dose quetiapine, and no prior reports associated with low dose. We describe an elderly patient with urinary retention associated with low dose quetiapine.

CASE: An 82 year-old-female with past medical history of chronic obstructive pulmonary disease and anxiety was admitted for dyspnea from panic attacks. She was started on quetiapine 12.5 mg twice daily for treatment of anxiety. The day after, both ankles became swollen and her abdomen became distended despite regular bowel movements. The following days her legs grew more edematous, and serum sodium decreased to 128 mEq/L. Imaging was negative for cardiac dysfunction or lower extremity deep vein thrombosis. CT scan of the abdomen was done to search for occult malignancy causing suspected vascular and bowel obstruction. The CT scan showed new massively distended urinary bladder with bilateral hydronephrosis.

The patient denied any urinary symptoms and was subjectively voiding normally. Post-void catheterization removed 1000 mL of urine. Urinalysis, urine culture, complete blood count and serum creatinine were normal; serum sodium remained 128 mEq/L. Detailed review of her medications did not reveal potential causes except for the temporal correlation between quetiapine and her findings; therefore quetiapine was discontinued. The next day she continued to void spontaneously over 500 mL of urine; repeat post-void catheterization measured 800 mL. The day after, her post-void residual was 1100mL, so an indwelling Foley catheter was placed.

CONCLUSION: This patient developed new onset urinary retention and leg edema after starting quetiapine 12.5 mg twice daily. Quetiapine's affinity to adrenergic alpha-1 receptors and antagonism to muscarinic (M 3) receptors in detrusor muscle likely predisposes to urinary retention. Because urinary retention can lead to discomfort, incontinence, infection and other complications, clinicians need to use caution when prescribing atypical antipsychotics to elderly.

A11

Improving self management in an older adult with low literacy: a case study.

M. Linda,[1] S. Hazelett,[1] K. D. Wright,[3,1] D. Jarjoura,[4] E. Pfister,[5] K. Allen.[1,2] *1. Health Services Research and Education, Summa Health System, Akron, OH; 2. Division of Geriatric Medicine, Summa Health System, Akron, OH; 3. Transitional Care and Chronic Illness Care, Summa Health System, Akron, OH; 4. Office of Biostatistics, The Ohio State University, Columbus, OH; 5. Geriatrics, Internal Medicine, Akron General Medical Center, Akron, OH.*

Approximately 1/3 of hospitalized older adults are functionally illiterate, which can lead to poorer patient outcomes. This case study describes an elderly Italian American immigrant woman (YM) enrolled in the After Discharge Management of Low Income Frail Elders (AD-LIFE) trial, testing the effectiveness of a chronic illness care model. At the time of enrollment into the AD-LIFE trial, the nurse care manager (CM) (who was also of Italian descent) suspected there might be a problem with literacy because she recognized that YM was an immigrant. This led her to inquire about her past, revealing that YM never went to school. Upon immigrating to the US she stayed at home to take care of her children and never worked outside of the home. To confirm her suspicions, the CM asked YM to perform tasks that would require reading (e.g., drawing up insulin, reading medication labels, asking to see records of daily blood sugars). At this point YM admitted that she was unable to read. This presented a special challenge for the CM since the patient was newly diagnosed with diabetes and CHF and COPD, which would require a great amount of teaching. To overcome some of these challenges the CM first color coded her unit dose packages (e.g., morning meds were yellow, lunch meds were red and evening meds were blue). Since she was able to read small numbers, the CM taught her how to take her PRN meds appropriately. The CM arranged for the endocrinologist to prescribe a solo pen so she could function independently in insulin administration. YM resisted all outside rehab and education until the CM arranged one on one verbal diabetic education and accompanied YM to cardiac rehab to sign her in. Because of these actions YM's pulmonary function tests improved, she walks a treadmill, her hemoglobin A1c dropped from 17% to 6.1% and she lost 20 pounds. Without the CM's interventions, YM would have presented as just another non compliant patient. Instead, YM has been able to maintain her independence and learn how to effectively manage her chronic illnesses with special interventions to compensate for literacy issues.

A12

Electroconvulsive Therapy in a Demented Yelling Patient Improves Symptoms.

L. K. Dinavahi,[1] M. Frankel.[2] *1. Geriatrics, Cleveland Clinic, Cleveland, OH; 2. Geriatric Psychiatry, Lutheran Hospital, Cleveland, OH.*

History: An 83 year old widow was admitted to the geropsychiatry unit with a 3-month history of yelling and agitation. Present illness started 5 years ago with decline in cognitive and driving abilities. Following a move to an assisted living, she developed new-onset major depression, accompanied by confusion, anxiety, social regression, and hypersomnia not relieved by antidepressants. Electroconvulsive therapy (ECT) helped tremendously, allowing her to return to the assisted living. Over the next few years, her cognition declined modestly and 3 months prior to admission; she became confused, agitated, withdrawn, anxious and screamed wordlessly multiple times per hour, day and night, and declined in cognitive and physical functioning.

Past history includes hypertension, hyperlipidemia, depression, arthritis and mixed dementia. Medications included gabapentin, valproate, olanzapine, haloperidol, and lorazepam. There was no family history of dementia or depression. Review of systems was significant for weight loss.

Physical Examination: T 99 F, P 97, R 18, BP 150/83, Wgt 107#. Exam was remarkable for sarcopenia and inability to ambulate. She was oriented only to self. She did not follow commands or answer questions. Mini-Mental State Examination (MMSE) was 0/30. CT brain suggested periventricular white matter disease and generalized atrophy. Labs were unremarkable.

Course: Gabapentin, Valproate, Olanzepine, and haloperidol were stopped without improvement in agitation and yelling. A trial of narcotics to alleviate possible pain was unsuccessful. A decision to give bilateral ECT was made. After 5 treatments, she improved significantly, becoming interactive, conversive, and much less agitated. Yelling frequency decreased by 80 to 90% and she slept through the night. She began eating and transferring with assistance and with therapy ambulated independently. One week after the last ECT she was able to score 11 on the MMSE. She was discharged on valproate and quetiapine.

Discussion: Yelling is a behavior disruptive to the patient and the caregivers. There is no FDA approved medication or treatment for this or other behavior problems associated with dementia. Literature search revealed several case reports and one case series supporting a benefit of ECT for yelling behavior. When other reasons for the

behavior, such as pain, are excluded, ECT may offer a palliative treatment for this challenging problem.

A13

MMSE limitations in diagnosing vascular dementia.

M. Sekiguchi, M. Rosenblum, M. Brennan. *Internal Medicine, Baystate Medical Center, Springfield, MA.*

Intro

Most non-geriatricians use the MMSE to screen for dementia; its sensitivity and specificity can be overestimated. In this case a dementia patient was nearly discharged to an unsafe environment when he performed well on a MMSE evaluation.

Case

A 79 yo man with a vague past history fell and fractured his left humerus. In the ED he was cachectic, unkempt and casually reported having lost 80 pounds in a year. He lived alone with limited family contact and had not left his apartment in months.

On admission he was resistant to interview, hypervigilant and paranoid. His mood was labile. His speech and thought process were tangential and disorganized but without dysarthria or aphasia. His initial MMSE was 24/28 with short-term recall of 1/3. Medical evaluation was unrevealing and head CT showed only small vessel disease. He insisted he would be fine at home and was unconcerned about the weight loss and poor living situation.

Geriatric and psychiatric consultants agreed that insight and reasoning were so poor that he lacked capacity. They suspected a longstanding pychiatric disorder with superimposed vascular dementia. A guardianship process was initiated.

Few days later a new resident repeated the MMSE; his score was 29/30. He refused to cooperate with neuropsychological testing. The resident wondered if his improved MMSE meant he really was capable of accepting the risks of independent living. The geriatrician returned and again demonstrated that he lacked insight into his limitations. Guardianship was obtained; he was eventually placed at a long-term facility.

Discussion/Conclusion

A near-perfect MMSE does not necessarily rule-out dementia. MMSE is not designed to detect the common deficits of vascular dementia which include cognitive slowing, poor problem solving, and impairment in abstract thinking. Like our resident, physicians may doubt a dementia diagnosis if MMSE is preserved. Geriatricians understand this but trainees and even medical attendings may not. Geriatricians should take the lead in educating other physicians about the limitations of the MMSE. Clinicians need to be comfortable with a variety of cognitive tools; a detailed history and grasp of risk is also critical. If vascular dementia is suspected, neuroimaging and formal neuropsychological evaluation of processing speed and executive functioning may confirm the diagnosis. The patient should also be screened for depression, irritability and apathy as these are frequent in vascular dementia.

A14

A forgotten pessary.

M. R. Shaikh, K. Ouchida. *Geriatrics, Montefiore Medical Center, Bronx, NY.*

Introduction:

Pelvic organ prolapse (POP) and urinary incontinence affect ten million older women with an estimated cost of $10 billion annually. Treatment options include expectant management, pessary or surgery. Complications related to pessary use are rare but have been reported with "forgotten pessaries." We present a case of a homebound nonagenarian who required surgery for the removal of a forgotten impacted pessary.

Case:

A 91 year old woman presented to the Emergency Department with seven-day history of "bloody urine." She denied dysuria, fever and abdominal pain. Her past medical history included coronary artery disease, dementia, decubitus ulcers, and seizure disorder. She was ambulatory with a walker and needed assistance with bathing and toileting. On examination, vitals signs, chest and abdominal examinations were within normal limits. Blood was noted at the introitus. Vaginal examination revealed blood clots and a hard gritty mass in the vaginal vault. CT abdomen and pelvis demonstrated a pessary with thick rind of calcification and surrounding edema with in the vaginal vault. Bedside removal of the pessary was attempted but unsuccessful. Examination under anesthesia was performed and the pessary was removed using ring forceps. The patient was discharged home with no post-procedure complications. She had no recollection of pessary placement. Her daughter subsequently remembered a a pessary being placed 6 years ago with only one change a year later.

Discussion:

POP is a commonly encountered problem in geriatric population. Surgery is considered a more permanent solution, but some patients prefer pessary as a non-invasive treatment option. Elderly with multiple co-morbidities, cognitive or motor dysfunction are at higher risk for pessary related complications including recto-vaginal or vesiculo-vaginal fistulas, bleeding, infection, cervical and vaginal cancer, and colonic or urinary obstruction. Pessary is considered a safe and affordable treatment option in patients who demonstrate compliance with quarterly visits to the provider and regular cleaning. Pessaries should be avoided in elderly, debilitated patients unable to comply with follow-up.

Conclusion:

This case highlights the importance of detailed history and physical examination on initial evaluation of frail homebound elderly patients including a comprehensive uro-gynecological history a history of pessary use. If gynecological history is unclear, initial examination should also include a bimanual examination.

A15

Prolymphocytic Transformation of Chronic Lymphocytic Leukemia Presenting as Angioedema and Cervical Adenopathy.

N. Shahid, H. Sobel, T. Caprio. *Geriatrics and Aging, University of Rochester, Rochester, NY.*

Introduction:

Chronic Lymphocytic Leukemia(CLL) is a clonal malignancy of B lymphocytes, with 90% of cases occurring after age 50 and a median age of presentation of 65 years . CLL is manifested clinically by immunosuppression, bone marrow failure and organ infiltration with lymphocytes. We describe a case of chronic lymphocytic leukemia with symptomatic prolymphocytic transformation.

Case Report:

The patient is a 92 year-old woman with a past diagnosis of CLL Stage II since 2005.

She was routinely followed by Hematology and did not require any treatment.In June 2008,she presented with complaints of neck, throat, tongue, and lip swelling consistent with angioedema. On examination, there was no oropharyngeal or tonsillar enlargement. Lymphadenopathy was noted in her axillary and bilateral cervical chains with palable lymph nodes in her supraclavicular, submental and bilateral axillary regions. Laboratory data showed a WBC of 1.6 with 47% abnormal cells .

In the presence of bulky adenopathy with increased prolymphocytic cell lines in the peripheral smears,

her diagnosis was consistent with prolymphocytic transformation of CLL.

At this point, the patient was advised that the prognosis of her disease was poor without treatment, in the range of 9-12 months. She decided not to pursue any further interventions and was enrolled in Hospice care.

Discussion:

CLL can present with lymphocytosis, lymphadenopathy and splenomegaly. Malignant cells resembling mature lymphocytes and the presence of anemia and thrombocytopenia is associated with shortened survival in a median range of 6-8 years. CLL may transform into an intermediate or high grade lymphoma (Richters Transformation) with a dramatic clinical presentation of the increased disease burden.Other patients transform to a condition that resembles B-cell prolymphocytic leukemia which is an extremely rare disease comprising less than 1 percent of B-cel leukemias.

A16

Are You Ready For A Palliative Workout?: Utilizing Physical Rehabilitation in Palliative Care.

N. Javier, M. Montagnini. *Geriatric Medicine/Hospice and Palliative Care, University of Michigan-Ann Arbor, Ann Arbor, MI.*

OBJECTIVES

1. To review a case where rehabilitation can improve the physical and emotional well-being of a palliative care patient

2. To discuss the benefits of rehabilitation in palliative care

RESEARCH METHOD: Case Report/Clinical Vignette

BACKGROUND

Disability poses a common problem among palliative care patients and results from deconditioning, undertreated pain, disease progression, and complications of therapy. Rehabilitation tends to be underutilized despite its potential benefits to improve the quality of life and functional status.

CASE DESCRIPTION

A 79 year old male with Hypertension, Congestive Heart Failure (CHF), Macular Degeneration, and Osteoarthritis was admitted for rehabilitation at the Veterans Affairs Extended Care Facility following hospitalization for Pneumonia and decompensated CHF. He subsequently developed acute renal failure secondary to Membranoproliferative Glomerulonephritis requiring hemodialysis (HD) on the medical floor. His hospital course was further complicated by recurrent C. Difficile colitis, respiratory failure, ICU monitoring, and delirium with frequent removal of the HD catheter. The Palliative Care Team was consulted to discuss goals of care and hospice evaluation. Although the prognosis seemed limited, the recommendation was to continue HD and start physical rehabilitation based on patient's wishes to improve and return home. The patient commenced rehabilitation at the Extended Care with consequent improvement in his functional status. The interventions included range of motion exercises, muscle strengthening, endurance training, massage therapy and local heat for analgesia. He managed to ambulate 20 feet with a rolling walker. In addition, The patient expressed satisfaction in his dramatic recovery with the optimistic desire to go home soon. Surprisingly, his kidney function improved obviating the need for further hemodialysis.

CONCLUSION

This case illustrates the benefits of rehabilitation in a patient with multiple co-morbidities and limited life expectancy where hospice was being considered for general debility. Hospice and palliative care providers need to incorporate a rehabilitative approach when caring for these patients.

A17

Ain't Ready To Die: Who Decides in Hospice?

N. Javier, M. Wisely. *Geriatric Medicine/Hospice and Palliative Care, University of Michigan-Ann Arbor, Ann Arbor, MI.*

OBJECTIVES

1. To review the case of a hospice patient who outlived his "death sentence"

2. To present the ethical dilemma involving family and physician approach to comfort care

RESEARCH METHOD: Case Report/Clinical Vignette

INTRODUCTION

Patients with non-cancer diagnoses have variable and unpredictable disease trajectory. A proportion have potentially reversible condition(s) which can be managed by active palliative care.

CASE DISCUSSION

The patient is a premorbidly functional 88 year old male with chronic kidney disease and asthma who was admitted to the hospital for atrial fibrillation and asthma exacerbation. His hospital course was complicated by delirium and ischemic bulbar symptoms requiring gastrostomy tube placement. He was discharged to a nursing facility where he recovered slowly. He was then transferred to the intensive care unit (ICU) for septic shock, aspiration pneumonia, and oliguria. With apparent multi-organ failure, the family along with the primary care doctor and ICU staff enrolled him in hospice with subsequent cessation of antibiotics, nutrition, and rehabilitation. Three days later, the patient was still alive and recovering. Despite scoring low on the mini-mental state examination, he expressed his desire to eat and go home soon. A family meeting was then conducted to reevaluate his goals of care. The three adult children were resigned to hospice care and declined further active palliative interventions. The hospice physicians who were also geriatricians felt that he could potentially improve with medical optimization, reinstitution of feeding, and some rehabilitation.

CONCLUSION

The balance of achieving non-maleficence and beneficence in a seriously ill patient with cognitive deficits and unpredictable life expectancy pose a difficult challenge for the family and physicians who are in turn affected and influenced by their own beliefs, values, attitudes, and biases. Clarifying the patient's wishes and family concerns with periodic reassessment of overall status is crucial in attempting this balance.

A18

Rapidly Progressive Dementia- a Diagnostic Conundrum.

N. Wilton,[1,2] D. Hammond,[1] I. Tio-Matos.[1,2] *1. Geriatrics, VA Puget Sound, Tacoma, WA; 2. Internal Medicine, Madigan Army Medical Center, Tacoma, WA.*

Introduction: Rapidly progressive dementia can develop over months or even days. Because of its invariable fatality, it is imperative that diagnosis be made quickly.

Case Presentation: A 70-year-old man presented at his initial primary care visit with no cognitive or motor complaints and unremarkable examination. Two months later he re-presented complaining of memory lapses and diplopia. His gait was slow and mini-mental state examination (MMSE) score 28. Computed tomography of his head showed small vessel ischemic changes; carotid ultrasound was normal. Six weeks after his initial complaint his wife reported worsening memory loss, prompting required for all activities of daily living, episodic diplopia, and gait issues.

Neurology was consulted and the patient hospitalized to expedite work-up. Initial diagnosis was embolic cerebrovascular accident given patient's subtherapeutic coumadin level and history of atrial fibrillation. Hospital course was complicated by seizures and urosepsis secondary to enterococcal bacteremia. Electroencephalogram (EEG) revealed periodic lateralizing epileptiform discharges that increased despite therapy on phenytoin. Three anticonvulsants were eventually required to control seizure activity.

The patient declined rapidly during his two week hospitalization becoming non-verbal and obtunded. A rapidly progressive neurodegenerative disease such as Creutzfeldt-Jacob (CJD) appeared more likely although myoclonus was not noted. Serology to rule out common metabolic and infectious etiologies was negative. Brain magnetic resonance imaging (MRI) showed right hemispheric cortical abnormality consistent with seizure activity. Lumbar puncture was negative for viruses or bacteria but elevated 14-3-3 protein. Brain biopsy confirmed CJD. Patient died three months after initial presentation.

Discussion: Rapidly progressive dementia and myoclonus are the two cardinal clinical manifestations of sporadic CJD (sCJD). Myoclonus is present in more than 90% of patients. Brain MRI is an effective diagnostic method with 91-92% sensitivity and 94% specificity. A characteristic EEG pattern is noted in 67-95% of sCJD cases. This patient, however, had no myoclonus. His MRI and EEG were atypical for sCJD. Any patient presenting with a rapidly progressive dementia in which evaluation including imaging studies is unremarkable should have CJD included in the differential with brain biopsy for confirmation.

A19

A Case of Scabies-Associated MRSA Bacteremia.

S. Lin,[1] L. Lado,[2,1] J. Farber.[1] *1. Geriatrics, Mount Sinai Hospital, New York, NY; 2. Geriatrics, Xeral-Calde Hospital, Lugo, Galicia, Spain.*

Introduction: Scabies is a parasitic infection which is common in the elderly population residing in nursing homes, especially in patients who are immunocompromised, malnourished, and cognitively impaired. It is frequently misdiagnosed as other types of dermatosis and unrecognized disease may lead to more serious medical complications and increase the risk of contagious spread of disease.

Case Report: An 85 year-old woman was transferred to a contact isolation bed on our inpatient geriatric service from an outside hospital where she was admitted for several days of increased lethargy and a progressive non-pruritic skin rash. She is a long-term care nursing home resident, bed-bound with contractures, non-verbal, and fed via gastrostomy. A skin biopsy was performed at the outside hospital and MRSA bacteremia diagnosed and treated with IV vancomycin.

The skin lesions first developed nine months prior to admission on her upper back and hands. She was seen by a dermatologist and treated unsuccessfully with topical corticosteroids. The rash then progressed over the several weeks preceding admission, becoming scaly and hyperkeratotic, with areas of excoriation, extending over her neck, ears, and the palms of her hands.

A skin scraping performed upon admission revealed crusted scabies infestation, for which she was treated with a single dose of oral ivermectin and topical permethrin, the latter poorly tolerated due to intense pruritis. Despite continued treatment for presumed MRSA endocarditis with IV vancomycin, her clinical course rapidly deteriorated with the development of gram negative rod sepsis and multi-organ system failure related to aspiration pneumonia. Fluid resuscitation and additional antimicrobial coverage failed to improve her condition. She received IV morphine and glycopyrrolate for symptom management, as the goals of care were shifted to palliation. She died comfortably on hospital day number eight.

Discussion: Our case highlights the importance of including scabies in the differential diagnoses for eczematous rashes in elderly patients, which also includes psoriasis, contact or atopic dermatitis, and other conditions. This case also alerts clinicians to the possibility of scabies infection being associated with a staphylococcal bacteremia superinfection.

A20

Newly Diagnosed Rheumatoid Arthritis on octogenarians, a treatment challenge.

W. Jirau-Rosaly,[2,1] I. Tio-Matos.[1] *1. Geriatric and Extended Care, American Lake VA Puget Sound HCS, Tacoma, WA; 2. Internal Medicine, Madigan Army Medical Center, Tacoma, WA.*

Newly diagnosed Rheumatoid Arthritis in the elderly, can present treatment challenges due to multiple co-morbidities that usually exist in this age group. To illustrate this, we present two very similar cases of Late Onset Rheumatoid Arthritis on octogenarians in which the complicated underlying chronic medical condition made it difficult to choose further management.

The two patients (Mr. JB and Mr. RS) were males in their mid-eighties at the time of onset of symptoms. Both presented with approximately three months of bilateral hand and wrist pain, swelling and prolonged morning stiffness. Other joints involved included knees and shoulders.

Each patient had extensive past medical histories. Of special interest, both patients had radiographic evidence of interstitial lung disease and history of asbestos exposure. Other concerning past medical history included Diabetes Mellitus and Atherosclerotic Vascular disease.

On physical examination, both patients had symmetric small joint involvement of fingers and wrists with swelling and erythema. There were no rheumatic nodes palpable. Laboratory evaluation showed elevated serological markers: C-reactive protein, erythrocyte sedimentation rate, Rheumatoid factor and anti-citric citrullinated peptide. Both patients had mild renal insufficiency. Hand and wrist films for both patients showed multiple erosive changes compatible with rheumatoid arthritis.

In both cases, we initiated treatment using prednisone with rapid taper and hydroxychloroquine for steroid sparing. This alone was effective to "cool" the joints. Non-steroidal anti-inflammatory drugs were avoided due to the underlying renal insufficiency. Methotrexate was not used as it is associated with pulmonary interstitial disease. In Mr. RS steroids were used with caution due to his history of insulin requiring diabetes mellitus. In addition, this patient developed septic arthritis with methicillin-resistant Staphylococcus Aureus isolates which prevented us from further use of etanercept. We were able to add leflunomide in Mr. JB, so far without any significant adverse effects.

Rheumatoid arthritis is usually associated with young females but is not uncommon in late life. We illustrate in both cases how we are limited in the choices of disease modifying agents due to underlying chronic diseases or at risk of causing severe adverse effects.

A21

LIMBIC ENCEPHALITIS: A Paraneoplastic Neurological Syndrome.

Z. H. Karmally, D. Remolina, I. Karkatzounis, S. Mushtaq, M. Hansberry. *Geriatric Medicine, RUSH University Medical Center, Chicago, IL.*

Background: Limbic encephalitis is a rare disorder and presents with a diversity of symptoms including confusion, depression, agitation, anxiety, memory deficits, and dementia. Seizures are not uncommon.

Presentation: 61-year-old male with hypertension, COPD and alcohol abuse admitted to the gero-psychiatry unit for delirium, agitation and confusion of unknown etiology. Patient developed new onset seizures and was transferred to the Neuro ICU. Seizures were controlled and an EEG done was consistent with seizure activity and organic encephalopathy.

CT scan and MRI of head did not reveal acute pathology or lesions. Chest X-ray was normal. Due to a high suspicion of a paraneoplastic process, patient had lumbar puncture and was found to be positive for Anti-Hu antibodies. Following which he had bronchoscopy which did not reveal any endobronchial lesions but cytology of the lavage was positive for atypical cells for small cell carcinoma. CT scan of chest showed some subcarinal lymphadenopathy and patient underwent a mediastinoscopy for definitive biopsy which revealed metastatic undifferentiated carcinoma, small cell carcinoma.

Discussion: Most individuals with paraneoplastic limbic encephalitis will turn out to have a cancer of the lung, thymus gland, the breast or the testis. It affects approximately 0.4% of patients with bronchial carcinoma. Smoking is a potential risk factor, as most cases are associated with small-cell lung cancer. The diagnostic criteria for paraneoplastic limbic encephalitis include tumor diagnosis less than four years, pathological or radiological involvement and exclusion of other diagnoses. Anti-Hu antibodies are present in up to 50% of pa-

tients with limbic encephalitis and lung cancer. A minority of patients with limbic encephalitis and lung cancer may harbor anti-CV2 or amphiphysin antibodies. There is also evidence that limbic encephalitis can be immune mediated. Limbic encephalitis rarely improves with treatment. Immunotherapy probably is effective is some patients and a trial with intravenous immunoglobulins, steroids or plasmapheresis is indicated.

A22

Diclofenac Sodium Topical Gel 1% in Knee Osteoarthritis: Comparison of Safety and Efficacy in Patients Aged <65 years vs ≥65 years.

H. Baraf,[1] F. Gloth,[2] M. Clark,[3] M. Gold.[4] *1. Arthritis & Rheumatism Associates, Wheaton, MD; 2. Johns Hopkins University School of Medicine, Baltimore, MD; 3. Endo Pharmaceuticals, Inc., Chadds Ford, PA; 4. Novartis Consumer Health, Inc., Parsippany, NJ.*

Supported By: Supported by Endo Pharmaceuticals, Inc., Chadds Ford, PA.

Purpose: Evaluate the efficacy and safety of topical diclofenac sodium gel 1% (DSG) vs placebo gel in subjects with knee osteoarthritis (OA) aged <65 years vs subjects aged ≥65 years.

Methods: In a 12-week, prospective, randomized, double-blind, multicenter, parallel group study, subjects ≥35 years old with Kellgren-Lawrence grade 1-3 knee OA applied DSG 4 g or placebo 4 times daily. Rescue acetaminophen ≤4 g/d was allowed. Primary outcomes were the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain subscale (0-20) and physical function subscale (0-68) and global rating of benefit (GRB; 0=very good; 100=very poor). Efficacy (difference of DSG vs placebo) was tested separately in subjects aged <65 years and subjects aged ≥65 years. All adverse events (AEs) were recorded.

Results: 258 subjects <65 y and 164 subjects ≥65 y were randomized. At week 12, mean (±SD) reductions in WOMAC pain were significantly greater with DSG vs placebo in subjects ≥65 y (-6.8±4.5 vs -4.9±4.6; P = 0.02) but marginally greater in subjects <65 y (-6.8±4.6 vs -5.7±4.5; P=0.06). Reduction in WOMAC functional impairment was also significantly greater with DSG in subjects ≥65 y (-21.0±15.7 vs -13.7±14.6; P=0.005) but not subjects <65 y (-21.8±15.1 vs -18.5±16.0; P=0.07). GRB scores with DSG were significantly better than with placebo in subjects ≥65 y (24.0±25.8 vs 33.7±29.3; P=0.03) but not subjects <65 y (24.2±24.4 vs 25.9±24.8; P=0.57). Efficacy in subjects ≥65 y did not differ significantly vs subjects <65 y for WOMAC pain (P=0.53), WOMAC function (P=0.30), or GRB (P=0.13). In both younger and older groups, more subjects treated with DSG (56.1%, 52.9%) than placebo (44.8%, 41.0%) had ≥1 AE, and application site reactions were more common with DSG (8.1%, 7.1% vs <1%, 2.6%). Gastrointestinal AEs were infrequent and similar to placebo in both age groups. No serious treatment-related AEs were reported. Patients in each age group applied >94% of scheduled doses.

Conclusions: DSG was generally effective regardless of age. Tolerability and compliance with therapy were good regardless of age.

A23

TOWARDS PATIENT-CENTERED CARE FOR DEPRESSION: CONJOINT METHODS TO TAILOR TREATMENT in Older Adults. Marsha Wittink M.D., Kathleen Carey B.S., The University of Pennsylvania.

K. E. Carey, M. Wittink. *The University of Pennsylvania, Philadelphia, PA.*

Supported By: The UCSD Medical School

PURPOSE: More than two million Americans age 65 and older suffer from some form of depression and over half of these patients rely on their primary care doctor for treatment. However 40% of depressed elderly patients prematurely discontinue treatment. The purpose of this study was to determine what older patients value about certain modalities of depression treatment using a unique marking tool, conjoint analysis.

METHODS: This study recruited a sample of 17 patients 55 and older from the primary care offices at the Clinical Practices of the Hospital of the University of Pennsylvania. Participants were asked to complete a 15-20 minute computer-based choice task with sequential pairs of depression treatment options designed to identify the most desirable attributes of treatment. The conjoint task compared exercise, medication, and counseling as forms of treatment. The following meta-attributes of the treatments were compared: time needed for treatment, side effect profile, and physical mechanism of the treatment. Descriptions for each treatment modality were chosen based on semi-structured phone interviews with patients in a chronic diabetes management group.

DATA COLLECTION/EXTRACTION METHODS: Conjoint analysis was used to calculate group and individual utilities for treatment attributes and predict treatment choice. Participant comments about treatment features were correlated with individual utility scores.

PRINCIPLE FINDINGS: Group utility assessments revealed that possible weight gain and nausea as a side effects were most important in driving treatment choice (utility of -4.83 ± 0.113). Emotional upset was the least feared by patients (utility +2.81 ± 0.110). The chi square for these results was 31.84 and the percent certainty was 9.00%. Qualitatively, respondents who preferred medication mentioned time, combining treatments, and the relationship with the provider, while those who preferred counseling brought up dependence on medications.

CONCLUSIONS: Calculating individual utilities for treatment allowed us to see the variability in treatment preferences and further understand what may drive preferences. We discuss ways in which conjoint analysis may be a useful method for developing patient-centered, tailored depression treatments that may one day be combined with epidemiologic data.

A24

Safety and Efficacy of Oxybutynin Chloride Topical Gel (OTG) for Treatment of Overactive Bladder (OAB) in Patients Aged <65 and ≥65 Years.

N. R. Zinner,[1] K. E. Caramelli,[2] H. Thomas,[2] G. E. Hoel.[2] *1. Western Clinical Research, Inc., Torrance, CA; 2. Watson Laboratories, Inc., Salt Lake City, UT.*

Supported By: Watson Laboratories, Inc.

Purpose: Evaluate the efficacy and safety of OTG vs placebo for treatment of OAB in patients of different age groups.

Methods: Patients ≥18 years old with OAB and urge urinary incontinence participated in a double-blind, parallel-group, multicenter study (OG05009; 00350636 at ClinicalTrials.gov). Patients were randomized to apply 1 g of OTG or placebo once daily to rotating sites on the abdomen, upper arm/shoulder, and thigh for 12 weeks. The primary outcome was mean change in incontinence episodes per day from baseline to last observation. Adverse events (AEs) were monitored throughout the study. The efficacy of OTG and placebo treatments was compared within each age group (<65 and ≥65 y) through analysis of covariance.

Results: More patients <65 years old (n=506) than ≥65 years old (n=283) were recruited. Most patients were white (<65 y group, 82%; ≥65 y group, 94%) and female (<65 y, 91%; ≥65 y, 86%). In patients <65 years old, OTG treatment resulted in significantly greater improvements than did placebo in daily incontinence episodes, daily urinary frequency, and daily nocturia episodes (Table). Urinary void volume improved significantly more with OTG than with placebo in patients ≥65 years old (Table). At study end, significantly more patients aged <65 years (24% vs 17% [*P*=.0377]) and ≥65 years (34% vs 18% [*P*=.0025]) achieved complete urinary continence with OTG than with placebo. Among treatment-related AEs reported by ≥1% of patients in the OTG group, dry mouth, dizziness, application site pruritus, and application site dermatitis occurred more frequently with OTG treatment than with placebo in both age groups. Withdrawals because of treatment-related AEs occurred infrequently (<65 y, 1.2% with OTG and placebo; ≥65 y, 2.8% with OTG and 2.9% with placebo). No serious treatment-related AEs were observed.

Conclusions: OTG was well tolerated, raised no safety concerns, and improved OAB symptoms in adult patients <65 and ≥65 years old.

Table. Mean Changes in Efficacy Variables From Baseline to Study End

	<65 Years Old			≥65 Years Old		
Variable, Mean (Standard Error)	OTG (n = 246)	Placebo (n = 260)	*P* Value	OTG (n = 143)	Placebo (n = 140)	*P* Value
Daily urinary incontinence episodes	−3.2 (0.18)	−2.6 (0.20)	.0003	−2.6 (0.22)	−2.2 (0.22)	.1085
Daily urinary frequency	−3.2 (0.21)	−2.3 (0.18)	.0010	−1.8 (0.23)	−1.5 (0.21)	.3252
Urinary void volume, mL	23.9 (4.61)	6.6 (3.39)	.0589	16.2 (4.48)	−1.4 (4.45)	.0062
Daily nocturia events	−0.9 (0.09)	−0.7 (0.09)	.0363	−0.5 (0.12)	−0.5 (0.10)	.8280

A25

Oral Bisphosphonate Utilization in Patients with Osteoporosis in Academic Family Medicine Outpatient Clinics.

O. A. Kamneva,[1,2] A. Nye,[1,2] I. Hamrick.[2] *1. Dept of Pharmacy Practice, Campbell University, Buies Creek, NC; 2. Dept of Family Medicine, East Carolina University, Greenville, NC.*

Background: Inadequate treatment is a concern in management of osteoporosis due to its negative impact on fracture risk, healthcare costs, and quality of life. Bisphosphonates are the most effective drug class at decreasing hip and spine fracture. The goal of the study is to discover reasons for exclusion of bisphosphonate in the treatment of osteoporosis.

Methods: A retrospective chart review was performed on the subset of patients >25 yo who had diagnosis of osteoporosis, not on active bisphosphonate treatment on 12/31/2007. Factors that would make a patient ineligible for a bisphosphonate therapy were identified and the number of months determined for patients previously on a bisphosphonate.

Results: Of 715 patients with osteoporosis 419 (58.7%) were not prescribed a bisphosphonate. The randomized sample of 209 patients was 91.4% female and 4.6% white with a mean age of 77.5 ± 13.5 years. Only 56 out of 209 (26.8%) patients did not have an identifiable reason for bisphosphonate exclusion. 93 patients (44.5%) were previously on a bisphosphonate, with an average use of 20.7 ± 17.7 months.

Conclusion: With 73.2% of patients with osteoporosis having a potential reason not to take a bisphosphonate, this study indicates that most patients have a medical reason or preference for exclusion of bisphosphonate therapy.

Reasons for Bisphosphonate Exclusion

Reason	# of Patients
CrCl <35 ml/min	47
Esophagitis	9
GERD	66
GI Bleed	5
Dysphagia	23
Dyspepsia	9
Dementia	49
Pregnant	1
Low calcium level	4
Bisphosphonate allergy	12
Hx of Bisphosphonate side effect	28
High risk of Bisphosphonate side effect	7
Bisphosphonate treatment > 5 yrs	4
Dependant on ambulation	54
Cannot sit up for 30 min	21
Cannot walk or bear weight	23
Short life expectancy	1
Patient preference	16
Cost issues	11

A26

Variation in Care Seeking for Sleep Dissatisfaction and Insomnia Between Younger and Older Patients.

S. T. Brandon,[1,2] R. W. Rupper.[1,2] *1. University of Utah, Salt Lake City, UT; 2. Salt Lake City VAMC, Salt Lake City, UT.*

Supported By: No\\\

Objectives: Chronic insomnia is a common geriatric condition with as many as 40% of patients over the age of 60 experiencing insomnia, frequent awakening, and disrupted sleep. We aimed to determine if there were differences in care seeking behaviors between younger and older VA patients with sleep dissatisfaction and/or insomnia, and to determine what factors influenced any variation that was found in care seeking behavior.

Methods: In July of 2004 we conducted a telephone survey of veterans randomly selected from all patients receiving care at the Salt Lake City VA during the prior six months. Patients reported their level of sleep satisfaction, and insomnia was classified according to the DSM-IV criteria. We used logistic regression to determine differences in care seeking behaviors between younger and older patients with sleep dissatisfaction and/or insomnia, and to determine what factors influenced these variations.

Results: Of the 1426 veterans we contacted, 1000 (70%) completed the survey. Over half of the responding sample (n=528) were age 65 and above. 30% of older veterans were dissatisfied with sleep, and 42% met DSM IV criteria for insomnia. In comparison with younger veterans, older veterans were significantly less likely to discuss sleep with their physician even after adjustment for the degree of sleep difficulty. In multivariate models geriatric patient's were more likely to discuss sleep difficulties with their physician if they perceived sleep difficulties to be a medical problem or if they frequently discussed sleep with friends and family. They were less likely to discuss sleep with their physicians if they had difficulties with transportation to the doctor or if they felt that sleep problems would get better over time.

Conclusions: Insomnia and daytime sleepiness occur frequently among elderly VA patients, yet geriatric individuals were less likely to have discussed sleep with their physician than their younger counterparts. Studies have shown that chronic insomnia is associated with difficulty in sustaining attention, slowed responses, diminished cognitive ability, daytime sleepiness and decreased memory. Providers caring for geriatric patients may assist their patients by initiating a discussion regarding sleep dissatisfaction and insomnia, as many geriatric patients may be hesitant to initiate this discussion themselves.

A27

Uncontrolled Blood Sugar: EMS Assessment of Diabetic Emergencies in Geriatric Patients.

J. Bernick,[1,2] D. Dalbey,[2] M. Lester.[2] *1. Internal Medicine, San Jacinto Methodist Hospital, Baytown, TX; 2. Emergency Medical Service, Health Department, City of Baytown, Baytown, TX.*

Purpose: Senior diabetic patients appear vulnerable to acute changes in their blood glucose frequently requiring urgent EMS evaluation. Although younger diabetic adults may remain at home if successful response to initial EMS treatment, senior patients appear less able to tolerate extreme fluctations in their blood sugar. This study objective attempted to determine the effectiveness of EMS stabilization of senior diabetic patients experiencing symptoms from alterations in their blood sugar.

Methods: This investigation reviewed the records of a suburban EMS in Harris County, Texas during a 26 month period commencing in September 2006. The field encounters of patients at least 65 years old receiving treatment for diabetic emergencies including hypoglycemia and hyperglycemia were examined. The EMS team recorded patient's primary symptoms, physical findings, procedures

performed, and response to treatment. Event chronology considered the decision for emergency transport, need for hospitalization, and return calls for similar diabetic episodes. This analysis included a comparison of the occurrence of urgent diabetic events in senior patients with younger adult peers.

Results: During the study period, 129 geriatric patients and 102 younger adult patients obtained evaluation for diabetic emergencies. The majority of geriatric patients (111)received treatment for hypoglycemia and typically presented with altered mental status. A positive response to hypoglycemic treatment occurred in 95 (86%) of senior patients. In younger adults, 77/86(90%) hypoglycemic patients improved with EMS treatment. Unexpectedly, 49 seniors refused transport to the hospital preferring to stay with supportive family members. The EMS returned within 90 days to assess 5 previous senior patients. The preponderence of senior patients(17/18) presenting in hyperglycemic crisis obtained transport to the hospital.

Conclusion: Senior patients sustaining diabetic emergencies depend on the EMS to establish initial stabilization of their critical problem. Although senior diabetic patients usually respond to EMS treatment, this frail group often requires further hospital evaluation. The anticipated rise in senior diabetic patients accessing EMS care requires the prompt recogition, treatment, and disposition of patients with urgent diabetic complications.

A28

A descriptive study of palliative care patients admitted via the emergency department.

J. A. Cohen,[1,2] U. Hwang,[1,2] R. S. Morrison.[1,3] *1. Geriatrics & Adult Development, Mount Sinai School of Medicine, New York, NY; 2. Emergency Medicine, Mount Sinai School of Medicine, New York, NY; 3. Geriatrics Research, Education and Clinical Center (GRECC), James J. Peters VAMC, Bronx, NY.*

Supported By: Patricia S. Levinson Foundation

Background: Inpatient palliative care (PC) services are becoming more common. Little is known, however, about the frequency of PC consultations for patients who arrive through the emergency department (ED) or the characteristics of and care received by these patients. Understanding these factors may provide opportunities to offer PC at an earlier time during hospitalization.

Purpose: To describe the characteristics of PC patients and those that arrived via the ED.

Methods: This is a retrospective medical record review of a consecutive sample of adult patients (≥18 years) who received PC consults at an urban academic medical center from 1/05-3/05. Demographic (age, gender) and clinical (emergency severity index [ESI], final ED diagnoses, initial pain scores, administration of analgesic medications, procedures done in the ED, and documentation of advanced directives) data were collected. Descriptive statistical analyses were conducted.

Results: A total of 161 PC patients were reviewed. 100 (62%) arrived through the ED; of these, 59% were female, mean age was 72 years (sd 18), mean ESI was 2.37 (sd 0.56), and 37% were ambulatory (non-ambulance) ED arrivals. Mean number of days from ED arrival to PC consultation was 7 (sd 9), median 3 (iqr 1,9). While 26% of all ED patients received analgesic medication in the ED and 15% presented with severe pain (>5 out of 10), only 53% of those with severe pain received any analgesic medication. Final ED diagnoses most commonly involved conditions that were: respiratory (29%), cancer (22%), and neuro/cognitive (22%) related. 56% of the ED patients had DNRs/identified proxies/advanced directives at ED arrival. Only 36% of these patients, however, had ED documentation of such.

Conclusions: Patients who receive PC services while in the hospital often present through the ED. These results indicate that there may be opportunities for earlier involvement of PC services in the ED to improve pain care and documentation of advanced directives.

A29

Multi-drug Resistant Acinetobacter: An Emerging Pathogen in Geriatric Patients.

J. Apalara,[1] R. Thyagarajan,[1,2] A. Mira,[1] K. Kaye,[2] D. M. Sengstock.[1,2] *1. Internal Medicine/Geriatrics, Oakwood Hospital, Dearborn, MI; 2. Internal Medicine, Wayne State Univ., Detroit, MI.*

Background: Multi-Drug Resistant Acinetobacter (MDR-Acin) has emerged in large referral hospitals as a challenging nosocomial pathogen. To our knowledge, no report has examined the outcomes of community-dwelling geriatric patients with MDR-Acin infections. This investigation examines the morbidity and mortality of community-dwelling geriatric patients with MDR-Acin.

Methods: We queried Oakwood Healthcare's (a system of 4 community hospitals sized 632, 259, 199, 168 beds) microbiology databases for all Acin infections and their associated resistance to 8 antibiotic (Abx) classes: penicillins, aztreonam, cephalosporins, aminoglycosides, quinolones, carbepenems, tetracyclines, and sulfonamides. Between Jan 2003 and Nov 2008, the first positive Acin culture for a patient and its Abx resistance profile were recorded along with the patient's final discharge disposition. Only patients admitted to the hospital from home were included.

Results: Over the 6-year period, 563 hospitalized, community-dwelling patients over age 60 (mean age 74±8.6 years, 52% male) had positive Acin cultures. As compared to the 2003-2006 period, the 2007-2008 period recorded a significant increase in the number of Abx classes that Acin was resistant to (4.7±1.4 vs 5.4±2.1 Abx, $p<0.0001$). At discharge, the disposition of the 563 patients was: home=148(26%), long-term care (LTC)=77(14%), long-term acute care (LTAC)=154(27%), transfer to another hospital=9(1.6%), hospice=27(4.8%), and died=148(26%). As compared to patients discharged home, increased Abx resistance was identified in patients discharged to LTC (4.3±1.9 vs 5.0±1.4 Abx, $p<0.001$), LTAC (4.3±1.9 vs 5.3±1.6 Abx, $p<0.0001$), hospice (4.3±1.9 vs 5.2±1.6 Abx, $p<0.02$), and who died (4.3±1.9 vs 5.3±1.6 Abx, $p<0.0001$). Excluding patients who were in hospice or died, patients with Acin resistant to ≥4Abx had longer duration of hospitalization (LOS) compared to those resistant to <4Abx (22.5±18.8 vs 10.4±10.8, $p<0.0001$). After adjustment for age and LOS, increasing Abx resistance remained predictive of in-hospital death/hospice (OR=1.19, $p<0.01$) and a decreased likelihood of discharge to home (OR=0.81, $p<0.001$).

Conclusions: MDR-Acin is increasing in community-dwelling geriatric patients and is associated with increased morbidity, mortality, and discharge to LTC. Recognition and control of this pathogen is crucial in LTC facilities and hospitals.

A30

Factor Analysis of Resilience Measures in the African American Health Project.

D. K. Miller,[1] T. K. Malmstrom,[2] F. D. Wolinsky.[3] *1. Indiana University and Regenstrief Institute, Inc., Indianapolis, IN; 2. Saint Louis University, St. Louis, MO; 3. University of Iowa and Iowa City VAMC, Iowa City, IA.*

Supported By: National Institute on Aging (AG10436)

Purpose: Resilience is generally defined as the ability to maintain or enhance positive adaptation in the face of adversity. It has been conceptualized as involving community as well as individual traits and inventiveness and creativity in addition to coping and adaptation. Factors that provide resilience to potential adverse effects of numerous life experiences (e.g., child abuse, terrorism, spousal loss, cancer, caregiving, and stressful work) have been studied, but few data exist regarding effects of resilience on the disablement process in older persons, especially among African Americans. We are examining the association of purported resilience factors with (a) risk for incident disability and (b) recovery from prevalent disability in the African American Health project (AAH), a population-based panel

study of African Americans from St. Louis, MO. Methods: At the 7-year follow-up telephone interviews (when subjects were 56-72 years of age), we obtained 13 scales purportedly related to resilience (SF-36 Vitality and Mental Health, Sense of Control, Autonomy, 2 Collective Efficacy subscales, Sense of Mattering, Social Capital, 3 Multi-Dimensional Sense of Humor [MDSH] subscales, the CES-D, and Stress. We performed exploratory factor analysis (EFA) on these scales. Results: EFA produced a 4-factor solution. The first included the Vitality, Mental Health, CES-D, and Stress scales, the second included the 3 MDSH subscales, the third included the 2 Collective Efficacy subscales, with Sense of Control, Social Capital, Autonomy and Sense of Mattering loading on the last factor. Conclusions: The EFA results suggest the following attributes of resilience factors in this population: positive affect, sense of humor, collective efficacy, and personal control. Subsequent studies after year 10 assessments have been obtained in 2010 will examine the degree of trait vs. state properties of these measures and their associations with risk of incident disability and with recovery from prevalent disability.

A31

Falls in Hospitalized Older Adults from Community (C) and Nursing Homes (NH): Impact of Chronic Kidney Disease (CKD) and Anemia.

T. S. Dharmarajan,[2,3] M. Yeddu,[3,2] R. Ambati,[2] E. P. Norkus.[1,2] *1. Medical Research, Montefiore Medical Center North Division, Bronx, NY; 2. Dept. of Medicine, Montefiore Medical Center orth Division, Bronx, NY; 3. Division of Geriatric edicine, Montefiore Medical Center orth Division, Bronx, NY.*

Supported By: This study was internally funded; external funding was not obtained for any part of this study.

Introduction: Falls in older adults are linked to age-related co-morbidity, polypharmacy, environmental factors and recently, to anemia. This report examined the relationship between CKD and falls, +/- anemia, in NH and C older adults.

Methods: Retrospective data from 1535 patients (2000 – 08) hospitalized for acute illness unrelated to falls [mean age 79+/-10(sd) yrs, 60.3% Female and 44.8% NH] examined. Falls (<12 mo.) and controls (no falls) compared. Demographics, hemoglobin, hematocrit, serum creatinine, creatinine clearance plus estimated GFR (using Cockcroft-Gault & MDRD formulae), serum iron, TIBC, ferritin and existing comorbidity obtained. The National Kidney Foundation staging for CKD used (GFR >90, 60-89, 30-59, 15-29, <15 = stage 1, 2, 3, 4, & 5 respectively); Stage 5 patients excluded as they were pre-dialysis. WHO criteria for anemia used (F <12.0 g Hb/dL, M <13.0 g Hb/dL).

Results: Anemia was more common in males (P<.0005), but similar by age, residence (C vs. NH), and existing co-morbidity (all P>.05). CKD stages 2, 3 & 4 was observed more in females (P<.0005), C residents (P=.029) and older patients (P<.00005) but occurred similarly across race (P=.106). Using the Cockcroft-Gault formula, logistic regression analysis determined that patients with CKD stages 2, 3 & 4 were 1.5-fold more likely to have fallen than CKD stage 1 patients (P=.009), Hispanics were 48% less likely to fall (P=.001) and an independent 18% increased risk of sustaining a fall occurred for every 1-unit decrease in Hb level (P>.0005). Substituting the MDRD-derived CKD staging in the same regression produced a similar 20% decreased risk of fall for every 1-unit increase in Hb level (P>.0005) but renal function (P=.386) and race (P=.433) were no longer linked to falls.

Conclusions:

1.) Declining renal function in older adults (indicated by worsening CKD stages) increases the risk of falls.

2.) Anemia increases risk of falls in older adults.

3.) While anemia and CKD often co-exist, each appears to be an independent risk factor for falls.

4.) The Cockcroft-Gault formula better identifies falls risk than the MDRD formula suggesting that body weight (used in C-G) and not race (used in MDRD) influences the relationship to falls.

A32

A Thirty Year Comparison Study Of Admissions To Geriatrics: Older Patients But The Same Diagnoses.

E. Frangos, J. Michel, F. Herrmann. *Department of Rehabilitation and Geriatrics, Geneva University Hospitals, Thônex, Geneva, Switzerland.*

Supported By: none.

Purpose of the study: To describe changes in older hospitalized populations over 3 decades. Methodology: Demographic characteristics (age, gender, marital status) and other medical conditions (diagnoses, number of admissions and length of stay). All patients hospitalized in 1976, 1986 and 1996 in the Geneva Geriatric Hospital were included. Continuous normal variables were compared using Student's t test, all other analyses were performed with the non-parametric Kruskall-Wallis analysis of variance. Results: The annual number of hospitalizations increased by 360 between 1976 and 1986 and by more than 500 between 1986 and 1996. Mean length of stay minimally increased in 1986 by 6% and markedly decreased in 1996 by 26%. The mean age increased significantly over time (p<.0001): 80 years in 1976, 83 in 1986 and 84 in 1996. The oldest patient was 98.1, 102 and 102.2 years old respectively. The number of diagnoses per patient was similar in the three cohorts with a median of four per patient. The 3 most frequent medical diagnoses were the same in all 3 cohorts: cardiovascular disease (24%), mental illness (11%) and respiratory disease (9%). Conclusion: Analysis of the thirty year experience of a geriatric hospital revealed significant changes in the characteristics of hospitalized patients. In particular, patients were admitted at an older age and had a shorter length of stay in 1996 versus 1976 despite similar diagnoses and disease burden. This is consistent with the compression of morbidity hypothesis and efforts to increase the efficacy of hospital care for older people.

A33

Colonization with multidrug-resistant gram-negative bacteria: prolonged duration and frequent co-colonization.

E. C. O'Fallon,[1] E. D'Agata.[2] *1. Medicine, Hebrew Rehabilitation Center, Boston, MA; 2. Infectious Disease, Beth Israel Deaconess Medical Center, Boston, MA.*

Supported By: Harvard-BIDMC T32 program

Background: The natural history of colonization with multidrug-resistant gram-negative bacteria (MDRGN) in the gastrointestinal tract has not been well-defined. Characterizing the duration of colonization, loss of colonization and frequency of co-colonization would provide important information for the development of interventions targeting the prevention of MDRGN spread.

Methods: From Oct 31st, 2006 through October 22nd, 2007 serial rectal cultures were obtained from a long-term care facility every 3-4 weeks. Loss of colonization was defined as two or more cultures in which MDRGN were not recovered. Factors associated with loss of colonization were analyzed using time-to-event methods.

Results: Thirty-three patients, colonized with 57 MDRGN isolates, were followed for 211 days (range 63-356days). Twenty (61%) patients were colonized with >1 different MDRGN species (average 2, range 1-4). The median duration of MDRGN colonization was 144 (range 41-349 days). Loss of colonization with all MDRGN isolates occurred among 3(9%) patients. Loss of MDRGN colonization by isolate occurred among 22(39%) of 57 MDRGN colonization episodes with a rate of colonization loss of 2.6 per 1000 days. Loss of MDR-Proteus mirabilis colonization occurred among one (6.7%) of 15 episodes compared to 21 (50%) of 42 non-MDR-Proteus spp. colonization episodes (hazard ration 0.1, 95% CI 0.01-0.78, P=0.3).

Conclusions: Patient colonization with MDRGN is prolonged with a substantial proportion of patients colonized with multiple MDRGN species. MDR-P.mirabilis may have a survival advantage in the gastrointestinal tract compared to other MDR-GN species.

A34

Prevalence and acquisition of multidrug-resistant gram-negative bacteria among longterm care residents.

E. C. O'Fallon,[1] R. Kandel,[1] R. Schreiber,[1] E. D'Agata.[2] *1. Medicine, Hebrew Rehabilitation Center, Boston, MA; 2. Infectious Disease, Beth Israel Deaconess Medical Center, Boston, MA.*

Supported By: Harvard-BIDMC T32 program

Infections caused by antimicrobial-resistant bacteria (ARB) are associated with substantial morbidity and mortality. Residents of long- term care facilities (LTCF) are among the main reservoirs of ARB, including methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant enterococci (VRE) and multidrug-resistant gram-negative organisms (MDRGN). The prevalence and transmission patterns of MDRGN have not been well studied in LTCF. We conducted a prospective cohort study in a 600-bed urban LTCF. To identify colonization with MRSA, VRE and MDRGN, nasal and rectal cultures from all residents on four units were collected every four months during a 12 month study period. Demographic and clinical information was collected for each resident in order to identify risk factors for colonization. MDRGN was defined as resistance to three or more antimicrobial groups including: extended-spectrum penicillins (ampicillin/sulbactam or piperacillin/tazobactam), cephalosporins (ceftazidime or ceftriaxone), gentamicin, ciprofloxacin, meropenem.

A total of 212 residents were enrolled in the study, 179 (84%) female. At baseline 61 (28.7%) were colonized with MDRGN, 24 (11.3%) with MRSA, and 6 (2.8%) with VRE. Among MDRGN isolates, 98% were resistant to ampicillin/sulbactam, 88% to ciprofloxacin, and 69% to gentamicin. Forty percent of MDRGN isolates were resistant to 4 or more classes of antibiotics.

A total of 55 (25.9%) residents acquired MDRGN colonization de-novo, 12 (5.6%) cleared colonization, and 27 (12.7%) acquired a second species of MDRGN during the study period. Rates of MDRGN colonization are high among LTCF residents and surpass colonization rates with MRSA and VRE. High rates of antibiotic resistance create a daunting clinical challenge and require further attention.

A35

Impact of comorbidity and disability on mortality among frail elderly subjects: Results from the aging and longevity study in the Sirente Geographic Area.

F. Landi, A. Russo, R. Liperoti, E. Capoluongo, R. Bernabei, G. Onder. *Department of Geriatric (CEMI), Catholic University of Rome, Rome, Italy.*

Background – The evaluation of the impact of disability and several co-occurring diseases on survival among frail elderly subjects is an important issue.

Objectives – The aim of the present study was to explore the impact of comorbidity and disability on the risk of all-cause death in a large population of frail and very old people living in community.

Methods – We analyzed data from the Aging and Longevity Study in the Sirente Geographic Area (ilSIRENTE Study) (1), a prospective cohort study that collected data on all subjects aged 80 year and older living in an Italian mountain community (n=364). The main outcome measure was the relative hazard ratio of death after four years of follow-up for disability combined with and without comorbidity.

Results – A total of 150 deaths (55 men and 95 women) occurred during 4-years follow-up. There was an uneven distribution of the risk. Sixty-seven subjects (44.6%) died among non disabled group compared to 83 subjects (55.3%) among disabled group ($p<0.01$). Thirty-nine subjects (26.0%) died among subjects without comorbidity compared to 46 subjects (30.6%) with two diseases and 65 subjects (43.3%) with three or more clinical conditions (p for trend <0.001). When examining the combined effect of comorbidity and baseline disability, the subgroups of persons with disability had a much higher risk of dying independently of number of diseases. In the full adjusted model, disabled subjects with two diseases and disabled subjects with three or more diseases were more likely to die compared to participants without disability and comorbidity (HR, 3.33; 95% CI 1.62-6.86, and RR, 2.25; 95% CI 1.08-4.66, respectively).

Conclusions – Our results, obtained from a representative sample of very old and frail elderly subjects living in the community, show that disability exerts an important influence on mortality, independently of age and other clinical and functional variables. These findings support the hypothesis of a strong implication of disability per se in the process of living an extremely long life.

Reference

(1) Landi F, Russo A, Cesari M, Barillaro C, Onder G, Zamboni V, De Santis A, Pahor M, Ferrucci L, Bernabei R. The ilSIRENTE study: a prospective cohort study on persons aged 80 years and older living in a mountain community of Central Italy. Aging Clin Exp Res 2005;17:486-493.

A36

Clinical associations with delirium in hospitalized adult patients: New York State 1998-2006.

L. C. Heacock,[2] J. Fogel,[1,2] R. Y. Lin.[1,2] *1. St Vincents Catholic Medical Center- Manhattan, New York, NY; 2. New York Medical College, Valhalla, NY.*

Supported By: Ms Heacock was funded by a student grant from New York Medical College

Background: Although delirium is commonly diagnosed in hospitalized patients, clinical associations in hospitalized patients for an entire state have not been described.

Objective: To describe clinical associations and trends of delirium in patients hospitalized in New York State between 1998 and 2006.

Methods: Hospital admissions which had International Classification of Diseases (ICD9) coding for delirium were identified from the Statewide Planning and Research Cooperative System(SPARCS) for all adult patients. A subset of hospitalizations groupings with a high prevalence of delirium were further analyzed to examine for multivariate clinical associations. The prevalence of non-psychiatric and non-ethanol groups of delirium in adult hospitalizations was tabulated for yearly trends.

Results: Non-psychiatric, non-ethanol related delirium codes were recorded in (0.4%) non-psychiatric diagnosis-related group(DRG) associated adult hospitalizations, 78% of which coded non-drug and non-dementia associated delirium. Delirium was diagnosed after admission in 28% of the delirium hospitalizations. Delirium associated hospitalizations had a median age of 79. Multivariate analysis showed that increasing decade of life(OR 1.5, 95%CI 1.4-1.5), hyponatremia(OR 1.4, 95%CI 1.1-1.8), and having an orthopedic DRG involving the lower extremity(OR 3.7, 95%CI 3.2-4.4) had significant adjusted associations with delirium developing after admission. The diagnosis(after admission) of adverse effects due to psychotropic(OR 243, 95%CI 166-356), sedative/hypnotics(OR 264, 95%CI 201-348), and analgesics(OR 174, 95%CI 149-203) also had strong adjusted associations with delirium diagnosed after admission. Significant multivariate predictors of delirium diagnosed upon or after admission included any diagnosis of an adverse drug effect both on admission(OR 13.8, 95% CI 12.8-14.8) and after admission(OR 5.0, 95% CI 4.2-5.4). There was no significant time trend for yearly delirium prevalence.

Conclusion: In addition to certain clinical conditions and demographic parameters, adverse drug effects due to medications, both in general and for specific classes, are strongly associated with delirium in hospitalized patients. This has implications for education and intervention. It is likely that the subjective nature of delirium documentation in administrative databases leads to under-estimation.

A37

ALCOHOL CONSUMPTION AND TOTAL MORTALITY AMONG OLDER MEXICAN AMERICAN MEN AGED 65-80 YEARS.

M. Al Ghatrif,[1,2] L. A. Ray,[1,2] A. A. Moore,[1,3] K. S. Markides.[1,2] *1. SCOA, UTMB, Galveston, TX; 2. PMCH, UTMB, Galveston, TX; 3. Internal Medicine - Division of Geriatrics, UCLA, Los Angeles, CA.*

Supported By: - National Institute on Aging, USA (Grant# AG10939).

- UTMB center for Population Health and Health Disparities (1P50CA105631-02.)

Objective: To explore the association between alcohol consumption and 10-year all-cause mortality among older Mexican American men aged 65–80 years

Design: Data used are from the Hispanic Established Population for the Epidemiological Study of the Elderly (H-EPESE), a population-based study of older Mexican Americans in five southwestern states: Texas, New Mexico, Colorado, Arizona, and California. The final sample consisted of 1030 men aged 65-80.

Measurements: Alcohol consumption frequency and quantity were assessed at baseline. Subjects were categorized as lifetime abstainers, current abstainers, light-to-moderate drinkers (<30 drinks in past month, and <3 drinks per occasion) and heavy drinkers (>30 drinks in past month, and >3 drinks per occasion). Kaplan-Meier curves were generated to examine differences in survival among those in the different alcohol consumption categories. Cox proportional hazards models were used to estimate the hazard ratios (HR) of mortality as a function of alcohol consumption controlling for sociodemographic and health-related characteristics with lifetime abstainers as the referent group.

Results: The mean age of the sample was 71.2 years. About 26% were lifetime abstainers, 45% were previous drinkers, 16% were light to moderate drinkers, and 14% were heavy drinkers. Kaplan-Meier survival curves suggested an association between higher alcohol consumption and better survival as 62% of heavy drinkers were alive at 10-year follow-up compared to 47% of lifetime abstainers (Log-Rank p value= 0.001). Cox proportional hazard models showed that light to moderate drinkers and heavy drinkers were at a lower risk of ten-year total mortality when compared to lifetime abstainers [HR (95% CI): 0.70 (0.52 - 0.95) and 0.69 (0.50 - 0.95), respectively]. This association with lower mortality remained significant after adjusting for other factors [0.69 (0.50 - 0.96) and 0.66 (0.47 - 0.93), respectively].

Conclusion: This study provides evidence that, compared to lifelong abstention, both light to moderate and heavy alcohol consumption is associated with a lower risk of all-cause mortality among older Mexican American men aged 65-80. This finding may be due to the possible protective effect of alcohol among those with risk factors for cardiovascular disease, which are relatively common in this population.

A38

Noise Levels in Community Hospital and Nursing Home.

S. Adoni, S. Abolahrari, T. Bharathan, Z. Jlayer, E. Baccash, G. Goldenberg. *Department of Geriatrics, New york Methodist Hospital, Brooklyn, NY.*

Supported By: New York Methodist Hospital.

Introduction: Noise is defined as sound that lacks musical quality or sound that interferes with hearing. Environmental Protective Agency (EPA) has recommended noise level (NL) below 45 decibel (dB) at day time and below 35 dB at night.

Purpose of the study: Analysis of NL-

1) In community hospital (CH) and Nursing home (NH) and compare with EPA recommendation.

2) In different hospital floors, Emergency Room(ER) and Intensive care unit (ICU) at various times.

3) During weekdays and weekend and observe difference, if any.

Description of study methods: NL was recorded with a Digital Recorder in dB without awareness of the staff or patients. The areas included: ER, ICU and medical floors. Recordings in the CH were obtained at 7:30AM, 11AM, 3PM and 7:30 PM (nursing shift change) on weekdays and on weekends. Recordings in NH were done at 7:30AM, 11 AM, 3 PM. The ANOVA model was used to analyze data.

Summary of results:

1) NL in CH (63.21+/- 5.6) was higher compared to NH (61.2+/- 6.1). Levels were statistically significant with p value of 0.019

2) NL for different locations: Floors (62.57+/-6.1), ER (65.18+/-4.3),ICU(62.05+/-5.04), NH(61.33+/-6.1). NL was statistically higher in ER (p value 0.001)

3) NL during day time and night time (Refer Table)

4) The NL during weekday for CH and NH was 63.46 +/-5.76 and during weekend was 61.61+/-5.64. The difference was statistically significant(p value 0.01).

Statement of Conclusions:

It is evident that NL at all settings is between 60-70 db, much higher than the EPA recommendation. Also NL is higher in CH than NH, higher during weekdays and higher in the ER. Increased NL in hospital can lead to increased stress, sleep deprivation and delirium in elderly. Our study shows that noise levels are exceedingly high in a community hospital. Since most of causes (loud conversations, telephone, overhead paging, alarms etc) are correctable, all attempts should be made to reduce noise pollution.

Noise level during daytime and night time

	Floors	ER	ICU	NH
Daytime	62.80 +/-6.2	65.80 +/-4.17	62.51 +/-5.09	61.23 +/-6.1
Nighttime	61.90 +/-5.8	63.33 +/-4.4	60.66 +/-4.9	---

The NL for CH during day time was 63.58+/-5.6 and for NH was 61.23+/-6.1 with significant p value of 0.008.

A39

Failure to Perceive Increased Risk of Fracture in Women ≥55 Years. The Global Longitudinal study of Osteoporosis in Women.

R. Lindsay,[1] S. Silverman,[2] J. D. Adachi,[3] N. B. Watts,[4] K. G. Saag,[5] J. Compston,[6] S. Gehlbach,[7] A. Wyman,[7] E. S. Siris.[8] *1. Regional Bone Center, Helen Hayes Hospital, West Haverstraw, NY; 2. David Geffen School of Medicine, Los Angeles, CA; 3. St Joseph's Hospital, McMaster University, Hamilton, ON, Canada; 4. Bone Health and Osteoporosis Center, University of Cincinnati, Cincinnati, OH; 5. University of Alabama-Birmingham, Birmingham, AL; 6. University of Cambridge School of Clinical Medicine, Cambridge, United Kingdom; 7. UMASS Medical School, Worcester, MA; 8. Columbia University Medical Center, New York, NY.*

Supported By: The Alliance for Better Bone Health (Procter & Gamble Pharmaceuticals and sanofi-aventis)

Aim: To compare self-perceived risk of osteoporotic fracture among women ≥55 years of age with reported risk factors.

Methods: GLOW is an observational study of women ≥55 recruited by 615 primary physician practices in 10 countries. All non-institutionalized patients who visited the practice within the prior 2 years were eligible. Self-administered questionnaires were mailed (2:1 over-sampling of women ≥65). Respondents rated their perceived risk of fracture vs women of the same age using a 5-point scale from "much lower" to "much higher."

Results: Of the women with no risk factors, 89% believed their risk was the same as or lower than that of women of the same age,

whereas the majority of women with risk factors failed to appreciate their increased risk of fracture (Table). Among women diagnosed with osteoporosis, 55% believed they were not at increased risk. One quarter of the 17,938 women with a FRACTURE Index ≥5 perceived themselves at higher risk.

Conclusion: Most women at elevated likelihood of osteoporotic fracture do not perceive themselves to be at increased risk.

Perceived Risk of Fracture Compared with Women of Same Age

		Perceived risk of fracture	
Risk factor	N	Lower or the Same As	Higher
No risk factor	25,301	89%	11%
History of fracture	13,760	64%	36%
Maternal hip fracture	7199	74%	26%
Parental hip fracture	8941	75%	25%
Weight <125 lb (57 kg)	9142	74%	26%
Smoker	5299	80%	20%
Alcohol >20 units/week	287	77%	23%
Current steroid use	1797	61%	39%
Rheumatoid arthritis	6111	71%	29%
FRACTURE Index ≥5	17,938	75%	25%
Diagnosis			
Osteoporosis	12,429	55%	45%
Osteopenia	9974	75%	25%
Normal BMD	36,031	92%	8%

A40

Age-Related Trends in Depressive Symptoms in a Cohort of Older Adults.

S. M. Thielke,[1,2] P. Diehr,[3] J. Unutzer.[1] *1. Dept of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA; 2. Geriatric Research, Education, and Clinical Center, Seattle VAHCS, Seattle, WA; 3. Biostatistics, University of Washington, Seattle, WA.*

Supported By: Hartford Foundation Geriatric Health Outcomes Research Award

OBJECTIVES: To explore the association of advancing age and self-rated health with depression among older adults.

DESIGN: Retrospective analysis of longitudinal data from the Cardiovascular Health Study.

SETTING: Four communities in the United States, surveyed between 1990 and 1999.

PARTICIPANTS: 5888 Medicare recipients.

MEASUREMENTS: Self-rated health was assessed annually with a single question. Depressive symptoms were assessed annually using the CESD-10, with subjects categorized as Nondepressed (score < 10) or Depressed (≥ 10). Mortality was ascertained by surveillance and semi-annual contact. The age-specific prevalence of depression was computed. Age-specific and health-specific probabilities of transition between depressed and non-depressed states were estimated.

RESULTS: The prevalence of a depressive state increased with advancing age. The probability of becoming depressed increased with advancing age among those with self-rated health, but not among those with self-rated sickness. The probability of remaining in a depressed state was high, with over 50% of those with self-rated health and over 70% of those with self-rated sickness who were initially depressed remaining in a depressed state one year later. Increasing age was strongly associated with greater likelihood of remaining in a depressed state.

CONCLUSION: Clinically significant depressive symptoms occur commonly in older adults, and are unlikely to remit, especially with advancing age. In order to limit the deleterious consequences of depression among older adults, increased attention to prevention, screening, and treatment is needed. Clinicians can use self-rated health as a tool to improve prognosis of depression.

A41

Do We Need Preventive Care during end of life Hospice Care?

S. N. Imam, I. Soneru, N. Agarwal, C. Monari, S. Foley, K. Wright, A. Patel, D. Kalogeropoulou. *Edward Hines, Jr. VA Hospital, Hines, IL.*

Background: Hospice provides specialized care to patients with terminal illnesses that have a prognosis of less than 6 months. Hospice was designed to save Medicare dollars while improving end-of-life care in the terminally ill.

There are many barriers to hospice enrollment which include providing palliative rather than curative treatment. Barriers include physician attitude, lack of knowledge of resources, and unavailability and difficulty with prognostication. The most common primary diagnosis in Hospice patients is cancer (58%), however, the number of hospice patients with non-cancer diagnoses (42%) has been increasing. This study evaluates the use of medication in the care of non-cancer hospice patients.

Methods: This is a single center retrospective descriptive study of hospice patients with non-cancer diagnosis in a 150 bed VA LTCF during the years 2000 to 2005. Medical records of these patients were reviewed to obtain data on Hospice primary diagnosis, patient demographics, co-morbidities, medication use during the last 4 weeks of life, and length of hospice care. Data management and statistical analysis was performed using the SPSS® software.

Results: Seventy-nine computerized patient records were reviewed. All patients were deceased at the time of data collection. Average length of hospice care was 97 days, with a median of 22 days. The number of patients receiving chemoprevention at hospice enrollment and during the last week of hospice stay (week of patient's death) were respectively: Aspirin 32% and 32%, Calcium 10% and 5%, SQ heparin 13% and 5%, Statin 5% and 2%. Those who took > 9 meds showed a trend toward having a longer length of stay compared to those taking < 9 meds ($n = 45$, $\chi 2 = 3.24$, 1 df, $p = 0.07$).

Conclusions: The primary goal of hospice care is to provide comfort measures, symptom control and a pain free death. Towards the end of life, patient care needs significantly increase. Providers and nursing personnel should concentrate on the primary goal of hospice care. The use of unnecessary medications that do not impart potential advantages but may result in potential complications, results in improper resource utilization which impacts costs. Results from this study may help us to focus on issues of resource utilization in Hospice patients so we better utilize services for terminally ill patients resulting in reduced health care costs and improvement in quality of life of the patients.

A42

Predictors for 90-day Mortality after Nosocomial Blood Stream Infection (BSI) in the Elderly.

T. Chen,[1] T. Chopra,[1] D. J. Anderson,[2] Y. Choi,[2] R. Sloan,[2] K. Schmader,[2,3] K. S. Kaye.[1] *1. Internal Medicine, Wayne State University / Detroit Medical Center, Detroit, MI; 2. Internal Medicine, Duke University Medical Center, Durham, NC; 3. GRECC, VA Medical Center, Durham, NC.*

Supported By: No financial disclosure.

Purpose: Scant data exist regarding the outcome of older adults with BSI acquired in the hospital. The objective of the study was to analyze the impact of nosocomial BSI on mortality among older patients.

Methods: A case-control study was conducted at Duke University from Jan 1994 to June 2002. Patients older than 64 years old with nosocomial BSI (occurring greater than 48 hours after admission)

were identified. A control was matched to each case by length of hospital stay, hospital ward and calendar time of admission. Patient variables collected included demographics, comorbidities, functional status and 90-day mortality. Logistic regression was used to identify independent predictors of 90-day mortality.

Results: 830 BSI cases and 830 matched controls were analyzed. The mean age of all patients was 74.4 years; 50.8% were male and 69.9% were white. 416 (50.1 %) of cases and 422 (51.3%) of control had a Charlson score greater than 2. Impaired functional status (ADL > 2) was reported in 426 (52%) cases and 460 (56%) controls at admission. BSI was categorized as primary (eg. catheter-associated) in 672 (81%) cases. The most common BSI pathogens were Staphylococcus aureus: 287 (34.6%) (66.9 % of these isolates were methicillin-resistant); other gram-positive organisms (29.2%); and gram-negative (28.9%) pathogens. 410 (49.4%) cases and 276 (33.2 %) controls died during the 90 day study period. Independent predictors of 90-day mortality in multivariate analysis included BSI (OR=2.08, 95% CI=1.69~2.57), functional status at admission (requiring assistance with > 3 ADLs) (OR=1.65, 95% CI= 1.33~2.06), Charlson score > 2 (OR=1.76, 95% CI=1.41~2.20), presence of a rapidly fatal condition (OR=1.50, 95% CI=1.16~1.95), presence of an immunosuppressing condition (OR=2.00, 95% CI=1.44~2.77), malignancy with metastasis (OR=2.21, 95% CI=1.53~3.19), and age > 75 (OR=1.26, 95% CI=1.02~1.56).

Conclusion: Nosocomial BSI in elderly patients increases 90-day mortality two-fold even after controlling for functional status and differences in co-morbid conditions.

A43

A National Survey of Physical Restraint in Long-Term Care Hospitals in Japan.

Y. Chiba, M. Kawasaki, Y. Takai, N. Yamamoto-Mitani. *Department of Gerontological Nursing, Tokyo Medical and Dental University, Tokyo, Tokyo, Japan.*

Supported By: nothing

Purpose: The purpose of this study is to investigate the prevalence of physical restraint in long-term care hospitals in Japan based on the national representative sample.

Methods: Out of the total of 3,533 long-term care hospitals registered in the on-line hospital database, 708 were randomly selected. A questionnaire was sent to each hospital and a nursing ward manager answered the questionnaire. The questionnaire consists of staffing, number of inpatients, rate of inpatients with dementia and catheters/tubes, the number of inpatients under restraints, types of care practiced as alternatives of restraint, and the presence of restraint assessment committee. Following the examination of simple statistics, associations between the ratio of restraint out of the total inpatients and various ward characteristics were examined.

Results: Altogether 309 (43.6%) questionnaires were returned. On average, 22.9% of the inpatients were restrained on the day of investigation. Types of restraint used were: bedrail (on average 71.6% of total inpatients under restraints), hand-glove (68.3%), waist restraint (51.7%), body belt/ table on wheel chairs (44.3%), arm/ leg belts (32.1%), or full-restraint (11.1%). Most (98.3%) inpatients under restraint were not freed from restraint for longer than 24 hours since the restraint was started, and 75.1% were under restraint for more than a month. The rate of restraint was associated with the number of staff other than nurses or professional caregivers during day time. The rate of restraint was lower among the hospitals with a restraint assessment committee. Several alternative care practices were significantly associated with lower rate of restraint: "intensify observation," "listen to the patient's words carefully," "lower the height of the bed or use the floor cushion mat," etc. There was no significant association between the rate of restraint and the ratio of patients with dementia or with catheters/tubes.

Conclusion: The results show that physical restraint is still prevalent among long-term care hospitals in Japan. It is necessary to explore minimum staffing including non-professional staff and sustainable care strategies to reduce restraint effectively.

A44

Investigating the skill set of health care providers regarding end of life care at a community teaching hospital.

A. D. Andrade,[1,2] M. Reisner,[1] S. Crisall,[1] J. W. Collins,[3] L. Zimmerman,[1] H. Chungtai,[1] C. Klienman.[3] *1. Medicine, Jersey City Medical Center, Jersey city, NJ; 2. Geriatrics, University of Miami/Jackson Memorial Hospital, Miami, FL; 3. Professional Security Studies Department, New Jersey City University, Jersey city, NJ.*

Background: The multidisciplinary approach integrates multiple health care professionals to provide quality care for patients at the end of life.

Purpose: The study purpose was to assess the impact of educational interventions on health care provider's perceptions towards end of life care.

Methods: The study comprised of a before and after study design to assess exposure to terminally ill patients; attitudes; beliefs systems; self reported competence level; barriers in delivery of end of life care and assess the influence of set educational interventions on these constructs. A questionnaire was developed based on the palliative care survey from Children's Hospital of Philadelphia and tested for validity and reliability with Cronbach Alpha 0.69 - 0.85. The participants comprised of physicians, residents, nurses, and social workers at a community teaching hospital. The educational intervention included a lecture based and two phases of video based interventions targeting all tiers of health care professionals over a 30 day period followed by the post survey. The study had a pre total of 124 and post total of 89 responders. Post test analysis of participants and non participants of each educational intervention were scrutinized and statistically significant differences $p < 0.05$ were reported.

Results: Overall there were no statistically significant differences between participants and non-participants. However a number of exceptions revealed the influence by the educational interventions to be positive. Participants reported that they felt it was inappropriate to place percutaneous endoscopic gastrostomy tubes (PEG) as opposed to non participants who felt that PEG tubes were appropriate in terminally ill patients. (p value 0.003) Participant's also reported a significant improvement in documenting treatment goals (p value 0.001) and were more likely to involve a palliative care, social worker or religious personnel. (p value 0.013)

Conclusion: The research affirms that the intervention requires time for internalization. The impact of these interventions may in due course significantly alter health care provider's perceptions towards end of life care.

A45

An Historical Analysis of Cardiac Arrest and DNR and their Effects on Current Medical Discourse.

D. J. Brauner. *Geriatrics/Medicine, The University of Chicago, Chicago, IL.*

Purpose and Methods: The history and evolution of the modern age of resuscitation serves as an example of how new medical technologies cause shifts in language and discourse, fundamentally altering the shared understanding and experience of those who use the language. Through a close analysis of the language, with emphasis on key concepts explored in a systematic review of primary source medical literature and other historical sources, we can uncover the forces that led to our current usage and understanding.

Results: The concepts of "Cardiac Arrest" and the later "Do Not Resuscitate" (DNR) order evolved to have profound implications — not only for discussions around "end of life" care, but also for the most quotidian doctor-patient conversations. As the meaning of these

new terms evolved to meet new possibilities in treatment, discourse between doctors and their patients and/or their families also shifted in a fundamental way. The birth of the liminal condition of cardiac arrest and the universal default application of cardiopulmonary resuscitation (CPR) to all patients affected not only our actions but also our understanding of death and dying. The factors that led to the development of the DNR order, the first codified limitation of therapy, and the forces that changed the dynamics of the process for deciding about CPR made conversations concerning cardiac arrest and the possibility of DNR the first to involve collaborative decision-making. The factor that catalyzed this transformation in the doctor-patient relationship was the delegation of the ultimate decision to the patient/family in 1976. This important change in the power dynamic allowed doctors and patients to begin sharing in decision-making but also left us with the unique circumstances of the CPR and DNR decisions - the ramifications of which are still being felt.

Conclusion: An awareness of the way practice and discourse evolved with the new technologies of resuscitation allow us to better understand our present situation and consider conscious approaches towards improvement.

A46

Correlates of Advance Directive Completion among Older Adults.

E. E. Tung, P. Takahashi, S. Crane, G. Hanson. *Primary Care Internal Medicine, Mayo Clinic College of Medicine, Rochester, MN.*

Supported By: Mayo Clinic

Background: Benefits of advance care planning (ACP) and advance directive (AD) completion include enhancement of patient autonomy and decreased resource utilization. Despite these established benefits, advance directive completion rates remain low.

Purpose: To examine the sociodemographic and comorbid illness correlates of AD completion

Methods: Retrospective cohort study utilizing administrative data from a primary care practice. Community dwelling patients aged 60 and older who were empanelled within the Division of Primary Care Internal Medicine on January 1, 2005 were included. In the primary analysis, subjects were first stratified into one of 4 levels of health-risk based on the Elderly Risk Assessment (ERA) index. The ERA represents a composite risk score that has been shown to be highly predictive of nursing home placement, hospitalization, and death. Univariate analysis was performed to determine the association between ERA score and AD completion. In the secondary analysis, univariate analysis was performed to determine the relationship between individual comorbid health conditions, sociodemographic characteristics and completion of AD.

Results: 12,154 older adults fit our inclusion criteria. 14% of subjects had a completed AD in their medical record. ERA scores were broken down into 4 quartiles. Subjects in the highest risk group were found to be 2X more likely to have completed an AD than those in the lower quartiles. In the secondary analysis, all of the analyzed individual characteristics were positively associated with completion with the exception of diabetes and COPD. Individuals with dementia were 70% more likely ($p<0.0001$) to have a completed AD when compared to those without this condition.

Conclusions: Individuals at highest risk for health deterioration, based on an electronic scoring system, had higher AD completion rates than their less frail counterparts. Although older age and higher comorbid health burden were strongly associated with higher completion rates, overall rates were extremely poor in each of the population subsets. These findings provide supporting evidence that utilization of electronic administrative data can provide useful information about ACP correlates. Prospective trials examining interventions aimed at improving completion rates among those at highest risk for health deterioration will be essential.

A47

Ventilator Preference During a Terminal Condition Among Older Mexican American and Non-Hispanic White Community Older Adults.

M. Finley,[1] R. Gampala,[1] R. Macias,[1] R. C. Wood,[1] A. Hernandez,[2] D. V. Espino.[1] *1. Family and Community Medicine, The University of Texas Health Science Center at San Antonio, San Antonio, TX; 2. Department of Education and Human Development, The University of Texas at San Antonio, San Antonio, TX.*

Supported By: Financial support for the research or other content of this poster was provided in part by a grant from the San Antonio Health Services Research Program with funds provided by the National Institute of Health.

In the popular press the use or non use of ventilator support is seen as a decision which can result in imminent death. The purpose of this study is to determine what factors are associated with older adult Mexican American and non-Hispanic white participant preference for ventilator support, given a hypothetical terminal illness diagnoses. 208 Mexican American and non-Hispanic White participants, ranging in age 60-89 years, were recruited from four outpatient waiting rooms in the San Antonio area and screened for MMSE scores of 18 or higher. Eligible participants were administered a standard questionnaire in their preferred language (English or Spanish) concerning the use of ventilator support during terminal illness. Mediator variables examined include demographics, religiosity, depressive symptomatology, and activities of daily living. A series of chi-square and t-test analyses were utilized to determine what factors were related to ventilator preference in the hypothetical scenario of a terminal illness with multiple logistic regression determining final associations. Results of the multiple logistic regression analysis revealed a positive association between depressive symptoms and male gender with ventilator preference attitudes ($p<.05$) when controlling for education and age. For every unit increase in depressive symptoms, subjects were 17% more likely to express agreement for ventilation support during terminal illness (CI 1.014-1.347). Men were approximately three times as likely to express agreement for ventilator support (CI 1.406-5.138). A significant interaction between education and age ($p<.01$) was retained in the final logistic model. Mexican American ethnicity was not associated with ventilator preference in the current sample. Depressive symptoms and male gender were stronger predictors of positive attitude towards the use of a ventilator than ethnic background. The interaction between age and education suggests that less educated, older study participants tended to disagree with ventilator support and less educated, younger subjects tended to agree with ventilator support.

A48

Elders' predilections regarding acute on chronic (incapacitating) illness.

M. C. Gheorghe. *Internal Medicine, Bridgeport Hospital, Bridgeport, CT.*

Cristina Gheorghe, Ana Casanegra, Ramona Dadu, Rodrigo Vazquez, Yan Feng, Vivian Argento, Constantine A Manthous

Bridgeport Hospital & Yale School of Medicine

Hypothesis: Elders' predilections regarding short- and long-term medical care vary based on their condition and level of independence.

Methods: A questionnaire was constructed to examine elders' predilections regarding invasive critical care and acceptable disposition outcomes. The tool will be administered to three groups: 1. outpatients with varying degrees of assisted living (outpt), 2. acute-care inpatients (inpt), 3. permanent nursing home (ECF) residents.

Results: 94 inpt are enrolled: age 78- SE 0.7 y, 40.4% male, 67% White, 60% Catholic, 65% totally independent activities of daily living (ADL). 28% described their quality of life (QOL) as excellent,

34% good, 31% fair and 7% poor. 47% had Connecticut advance directives (AD; which can only address terminal conditions). 8 outpt were similar except averaged 91- SE 2.3 y and 90% were completely independent with ADLs. 25% described their QOL as excellent, 50% as good, 25% as fair, and 88% had AD.

60% of inpt vs. 25% of outpt chose mechanical ventilation and full restorative care (RC) for severe pneumonia while 40% of inpt and 75% of outpt opted for palliative care only (PC). If RC was initiated but "you'd definitely need a nursing home either for a while or permanently," 26% of inpt chose continued RC with CPR, 21% RC without CPR and 53% PC. Given the same circumstances, 12.5% of outpt would continue PC with CPR, 12.5% RC without CPR and 75% PC. In case of advanced dementia requiring ECF followed by superimposed acute illness, 53% of inpt chose PC in situ (no transfer to acute care hospital), whereas 75% of outpt chose PC in a nursing home.

Conclusion: Early results suggest that elders' end-of-life predilections may vary based on their medical (acute and chronic) condition and level of independence.

A49

Spirituality Assessment in Clinical Research: A Systematic Review of Instruments.

S. Monod,[1] E. Rochat,[1] M. Brennan,[2] S. Rochat,[1] C. Bula.[1] *1. Service of geriatrics, Lausanne, Switzerland; 2. Center on HIV and Aging, AIDS Community Research Initiative of America, New York, NY.*

Supported By: Nihil

Background: Growing evidence supports the putative role of spirituality in influencing patient's health decisions and outcomes. Clinicians agree that assessing spirituality would be an important facet of clinical care. However, spirituality assessment remains complex. A great variety of conceptualizations and constructs of spirituality have been developed, resulting in a diverse collection of instruments to assess spirituality.

Objectives: To perform a systematic review of instruments used in clinical research to measure spirituality, to propose a classification of these measures, and to identify further needs in the domain of spiritual assessment in health care settings.

Method: A literature search in Ovid MEDLINE, CINHAL, PsycINFO, and EMBASE databases, using the terms "spirituality", "assessment", and "adult" was performed. Religiosity measures and qualitative instruments were excluded. For each instrument, dimensions of spirituality assessed, intended goals, and data on psychometric properties were examined and recorded.

Results: Overall, 38 instruments were identified and classified as single-item (n=6) or multi-dimensional instruments (n=32). These latter measures were then classified according to the main underlying construct into measures of general spirituality (n=19), spiritual well-being (n=5), spiritual support (n=6), and spiritual needs (n=2). Data on psychometric properties were mostly limited to reliability (internal consistency), content validity, and factor analysis. Measures of test-retest reliability, and convergent validity were reported only for a few instruments. Data on predictive validity were scarce and even though some instruments were used as outcome measures, no data on sensitivity to change was provided. Instruments designed to assess spiritual well-being were those most frequently used in clinical research.

Conclusion: This systematic review highlights the various spirituality constructs assessed by these instruments. The proposed classification could help to select the appropriate instrument for specific research or clinical practice. Information on psychometric properties remain limited, in particular, measures of sensitivity to change are essentially lacking and will be needed to effectively use these instruments to monitor the effectiveness of spirituality-based interventions.

A50

VITAMIN D MODULATES B LYMPHOCYTE ACTIVITY.

C. Castillo,[1,2] D. Frasca,[3] B. R. Troen,[1] B. B. Blomberg.[3] *1. GRECC, Bruce W. Carter Dept of Veterans Affairs Medical Center and University of Miami Miller School of Medicine, Miami, FL; 2. Jackson Memorial Hospital, Miami, FL; 3. University of Miami Miller School of Medicine, Miami, FL.*

Background: Vitamin D insufficiency, widespread in the elderly, is associated with multiple age-related diseases and geriatric syndromes and is directly correlated with mortality. Although vitamin D is an immune system modulator that can regulate macrophage and T cell function, little is known about the impact of vitamin D on B cell function. E47, a transcription factor that regulates the activity of activation-induced cytidine deaminase (AID) in B cells, is necessary for immunoglobulin (Ig) class switch recombination (CSR). We hypothesize that vitamin D insufficiency plays a role in age-related deficiencies in CSR and that vitamin D could increase E47 expression and thereby enhance CSR. **Aims**: To assess the impact of vitamin D on B cell CSR. **Methods**: Peripheral blood mononuclear cells were isolated from 7 subjects by Ficoll gradient centrifugation, cultured in complete medium, and stimulated with CpG alone or together with different concentrations of calcitriol (1 ng/ml, 10 ng/ml, 100 ng/ml, and 1000 ng/ml). Cultures were performed with and without T cells plus monocytes. After 7 days, RNA was extracted from B cells after magnetic sorting, and real-time polymerase chain reaction was performed to assess E47 and AID mRNA expression. IgG production in the culture supernatants was assessed by ELISA. **Results**: In 6 of the 7 subjects, in vitro calcitriol concentrations of 10 ng/ml and 100 ng/ml together with CpG stimulated E47 and AID mRNA expression up to 5-fold greater than CpG alone in the cultures with both B cells plus T cells and monocytes. We also found a 2- to 3-fold increase in IgG production in culture supernatants as compared to CpG alone. Vitamin D did not alter E47 and AID expression in cultures with B cells alone. **Discussion**: Calcitriol in vitro stimulated B lymphocyte activity only in those cultures with additional cells such as T lymphocytes and monocytes. Thus, vitamin D appears to act indirectly on B cells, possibly via upregulation of Th2 cytokines. Future experiments will analyze the mechanisms responsible for this indirect action of vitamin D on B cell function.

A51

Age Related Changes in the Brain Connectivity Revealed and Characterized by Fusion of Two Neuroimaging Modalities : Diffusion Tensor Imaging and Resting State Functional Connectivity.

P. Skudlarski,[1,2] B. A. Skudlarska,[3] G. Pearlson.[1,2] *1. Olin Neuropsychiatry Research Center, Hartford Hospital, Hartford, CT; 2. Department of Psychiatry, Yale Medical School, New Haven, CT; 3. Geriatric Center, Bridgeport Hospital, Bridgeport, CT.*

Supported By: The work was supported by NIMH grant, MH043775 to Godfrey Pearlson.

Introduction: Recently, neuroimaging has focused more on studying the connectivity between brain regions. A novel method of combining functional and anatomical connectivity estimates was recently described [1], to quantify the relationship between two distinct features of brain connectivity. Anatomical Connectivity is measured using Diffusion Tensor Imaging (DTI) of the integrity of white matter tracts, while Functional Connectivity represents the strength of correlations in the resting fMRI fluctuation. Fusion of both methods was used to characterize age related changes in brain connectivity. Methods : 43 healthy subjects raging in age between 19 and 75 years underwent MRI imaging on 3T

Siemens Allegra scanner. The imaging included one run of resting state

fMRI and one run of DTI imaging. Functional connectivity was

calculated by correlating individual time courses in the fMRI series.

Anatomical connectivity was obtain by detecting white matter tracts

and integrating them through path analysis [1]. Results : Both methods

show distinct patterns of changing with normal aging. While anatomical

connectivity mainly decreases with age, functional

connectivity changes in both directions. Specific brain

connections can be identified and characterized by patterns of age

related changes in both aspects of brain connectivity. Conclusions :

While aging-related alteration of white matter is associated with

decreased strength of anatomical connectivity, the inclusion of

functional connectivity shows a more complex pattern of changes

in brain connectivity that can be further used to enhance our

understanding of brain aging.

References: [1] P. Skudlarski, K.Jagannathan, V. D. Calhoun, M. Hampson,B. Skudlarska, G. Pearlson

Measuring brain connectivity: Diffusion tensor imaging validates

resting state temporal correlations. Neuroimage 43 (2008), pp. 554-561

A52

The role of glucose and insulin on endothelial senescence- The relation of diversity effect of insulin and telomerase-.

T. Hayashi,[1] K. Ina,[1] H. Matsui-Hirai,[1] A. Iguchi.[2] *1. Geriatrics, Nagoya University Graduate School of Medicine, Nagoya, Japan; 2. Dept. of Health Sciences, Aichi Shukutoku Univ., Nagoya, Japan.*

Supported By: Japan Society for Promotion of Science (Grants in Aid for Science Research No.195910403)

Diabetes mellitus and aging are independent risk factors for atherosclerosis. Insulin is the treatment tool and may affect aging itself. However, little is known about them and it is controversial whether insulin is atherogenic or not. The effects of glucose and insulin were investigated on senescence of human aortic and umbilical venous endothelial cells (HAECs and HUVECs). Senescence-associated-β-galactosidase (SA-β-gal), telomerase activity and length of telomere were evaluated. High glucose increased SA-β-gal activity and decreased telomerase activity in a 3 days. Insulin promotes endothelial senescence under normal glucose, however physiological concentrations (10^{-12}-10^{-10}M) of insulin decreased in SA-β-gal, an increase in telomerase activity and prevention of telomere length shortening under high-glucose. This was associated with reduced ROS generation, increased NO production and endothelial NOS expression. Interestingly, high concentrations (10^{-7}-10^{-6}M) of insulin potentiated high-glucose-induced SA-β-gal activity, failed to prevent high glucose-down-regulated telomerase activity and further shorten telomere length. Transfection of siRNA targeting eNOS eliminated the inhibition of high-glucose-induced endothelial senescence and the anti-senescence effect of physiological concentration of insulin under high glucose but was without effect on its enhancement under normal glucose and in high concentrations under high glucose. High glucose and insulin under some conditions shorten telomere length longer than a week. P53, transduction signal of aging, and VCAM-1, a marker of atherogenesis, were increased by high glucose, however were restored in physiological concentration of insulin under high glucose. Thus, high glucose induced endothelial senescence has the factor of not only steress induced but also replicative senescence. Physiological concentrations of insulin delay cellular senescence by an NO-dependent and telomere related mechanism and may retard atherosclerosis formation under high glucose, whereas any concentration of insulin under normal glucose or high concentrations of insulin under high glucose promote it in an eNOS-independent way. This unique dual effect of insulin offers an important clue for the pathophysiological basis of endothelial cell senescence in diabetes.

A53

Utilization of a Learners Needs Assessment for Geriatric Training among Three Surgical Training Programs.

A. D. Markland,[1,2] J. B. Walsh-Covarrubias,[2] C. DuBeau,[3] M. M. Urist,[2] K. I. Bland,[2] L. C. Kilgore,[2] C. L. Amling,[2] H. E. Richter.[2] *1. Birmingham VAMC, Birmingham, AL; 2. University of Alabama at Birmingham, Birmingham, AL; 3. University of Chicago, Chicago, IL.*

Supported By: Hartford Foundation/AGS Geriatrics for Specialty Residents Program

Objective: Geriatric training in surgical residency programs is essential given that older patients represent the majority of surgical admissions. Therefore, we conducted a learner's needs assessment (LNA) to determine the importance, comfort, and perceived need for geriatric topics among general surgery (GS), urology (U), and obstetrics/gynecology (ObG) residents at the University of Alabama/Birmingham (UAB).

Methods: We used a modified geriatric surgery LNA developed at the University of Chicago. The instrument included 3 demographic questions and 38 topics in 4 categories: 1) General Aging Principles/Topics [e.g., polypharmacy], 2) Geriatric Assessment [e.g., quality of life], 3) Hospital Care [e.g., pain control]; and 4) Geriatric Conditions [e.g., deconditioning]. UAB residents rated the importance and comfort level for each topic on a 4 point Likert, from "Not Important/Comfortable (1) (respectively) to High Importance /Comfort" (4). Perceived need was calculated as mean importance scores minus mean comfort scores, then ranked. Wilcoxon-ranked sum testing was used to evaluate differences by gender and residency type.

Results: Overall response rate was 37% (32/86); responders were 28% GS, 13% U, and 59% ObG; 59% were women. Mean importance by category were: General Aging 3.4 ± 0.4; Geriatric Assessment 3.5 ± 0.4, Hospital Care 3.6 ± 0.4, and Geriatric Conditions 3.5 ± 0.5. The 3 topics ranked highest in importance were: 1) quality of life assessment, 2) pain control, and 3) management of comorbid diseases. The 3 topics ranked lowest in importance were: 1) Medicare Part D, 2) sexuality in aging, and 3) transfer of care. Perceived need was highest for: 1) advanced directives, 2) Medicare Part D, and 3) quality of life assessment. No statistical differences in perceived need were found in any categories by gender or residency type.

Conclusions: Residents in three surgical specialties ranked geriatric topics specific to perioperative hospital care as the most important regardless of surgical specialty or gender. When accounting for perceived need and importance, residents ranked assessment of quality of life highest. Traditional geriatric curricula may need to be modified for surgical trainees to focus on topics related to hospital care and quality of life.

A54

Geriatric Education for the Hospice Team.

A. M. Corcoran. *Internal Medicine, Divison of Geriatrics, University of Pennsylvania, Philadelphia, PA.*

Supported By: HRSA-Geriatric Academic Career Award

Hospice has seen tremendous growth in the enrollment of older adults with dementia, as well as those in long-term care settings. Given that the hospice model utilizes interdisciplinary teams to provide care for frail older adults at the end of life, a team-based curriculum is vital. The project goal was to improve knowledge and confidence of the hospice interdisciplinary team members in geriatric palliative care.

Penn-Wissahickon Hospice is a community-based and university-affiliated non-profit with an approximate average daily census of 150. An initial needs assessment was performed using an anonymous online survey. Prior to each session, educational material was reviewed by members of the interdisciplinary team and common case scenarios were utilized to promote interest. The cases were helpful tools for interaction as they were often based on relevant or current patients. Sessions were carefully scheduled based on workday obligations. A retrospective pre/post-assessment of knowledge and confidence was used. After a year of educational sessions, a second needs assessment will be performed to evaluate the team's progress and uncover any deficits. Prior educational sessions will be re-evaluated and reformatted as appropriate.

Results revealed a majority of the team members reported experience caring for patients with cognitive impairment. The highest rated topics in the initial needs assessment were: (1) dementia, (2) long-term care, (3) falls, and (4) caregivers. Team members also reported that they learned best with a live presentation or workshop and preferred education activities during the workday.

A majority of the team members felt that their knowledge and confidence in the above topic areas improved, however the most interesting improvements were seen with the following objectives: to define/describe dementia as a terminal illness (47%), to educate/negotiate with families about treating pain in patients with dementia (53%), to understand the barriers/obstacles to optimal end of life care in the nursing home (100%), and to describe hospice/nursing home team interface and ways to make it work (90%).

In conclusion, this innovative approach of interdisciplinary hospice team education could lead to better quality of care for older adults at the end of life.

A55

A Systematic Approach to Geriatric Curriculum Evaluation and Enhancement.

D. Neale, C. Herman. *Internal Medicine, University of New Mexico SOM, Albuquerque, NM.*

Due to the rapidly growing aging population and the few Geriatricians in the US, most older patients will not be treated by Geriatricians. Primary care physicians and specialists will be caring for these patients. It is important that these physicians are competent in the fundamental principles of geriatric care. At the University of New Mexico (UNM), the Internal Medicine Residents (IMR) do not perform adequately on the geriatric portion of the In-Training Exam and are not satisfied with the one-month required geriatrics rotation. Based on this information, we developed a systematic approach to evaluate and improve the curriculum of the rotation.

The five-part approach includes: 1) determining the goals of the curriculum; 2) performing a multi-faceted needs assessment; 3) reviewing available resources for experiential learning; 4) determining which curricular goals are not met via experiential learning; and 5) integrating interactive online resources into the curriculum to meet these goals.

We compared and evaluated Geriatric competencies for IMR from multiple sources. We identified the goals of the curriculum to be the most essential competencies not covered in other specialty rotations.

A needs assessment questionnaire was developed to evaluate the Residents' proficiency and interest in further education in these competencies. The questionnaire was distributed to all IMR (n=72) (for self-evaluation) and Attendings (n=18) (for evaluation of the Residents.) The response rate was 67% and 61% respectively. Both groups rated IMR proficiency lowest in gait evaluation and functional assessment. However, both groups rated physiologic changes with aging, agitation in dementia, geriatric pharmacotherapy, and depression, delirium and dementia as the most important topics for further education. For more specific information, Resident evaluations of the rotation for the past 3 years were reviewed.

The rotation has been revised to include activities linked to the competency-based curricular goals and aligned with the Residents and Attendings' educational goals. Through POGOe, case-based activities offering experience in the competencies not adequately covered will be integrated into the curriculum and evaluated this academic year. Resident evaluations and In-Training Exam scores will be assessed and compared to the previous years. This systematic approach can be applied to curricula at other teaching institutions.

A56

Reducing Warfarin Associated Adverse Events in Hospitalized Older Adults: Results of Education though an Ongoing Performance Improvement Study.

T. S. Dharmarajan,[2,3] M. A. Baig,[2] A. Gupta,[2] J. Idury,[2] P. Sivaraju,[2] E. P. Norkus.[1,2] *1. Medical Research, Montefiore Medical Center North Division, Bronx, NY; 2. Medicine, Montefiore Medical Center North Division, Bronx, NY; 3. Division of Geriatric Medicine, Montefiore Medical Center North Division, Bronx, NY.*

Supported By: This studt was funded internally; external funding was not used for any part of this study.

Introduction: Warfarin, an oral anticoagulant, is often used in older adults to prevent thrombo-embolism. Adverse drug events (ADEs) are common and the National Safety Goals (3E) 2008, recommends institutions develop processes to monitor and improve its safe use. This PI initiative, tracked adverse events to examine the relationship to warfarin use and improve its safe use through education.

Methods: Data collected retrospectively (R) (Sept-Dec. '07) & prospectively (P) (Jan-Nov. '08) on prior warfarin use, initial & in-hospital maintenance dosing, hematocrit, INR, hepatic, renal function, and adverse events related to warfarin use/drug interaction. Formal conferences and daily hand-off sessions provided education on warfarin use..

Results: 218 patients (81 R & 137 P) on oral warfarin examined. Mean age: 69 ± 17(sd) yrs; 46% males, 37% from nursing homes. Age, sex and residence were similar in the R vs. P periods (P>.05). Logistic regression analysis identified a 120% greater bleeding risk when admitted with INRs 3.0-4.0 (& +30% increase each 1.0 unit additional INR increase) (P=.021); a 70% greater bleeding risk (independent of warfarin use) if concomitantly provided drugs that increase anticoagulation (P=.028), while better warfarin dosing caused a 70% decreased bleeding risk in P vs. R periods (P=.010); 4 of 5 deaths associated with bleeds, 2 had INRs >2.

Conclusions:

1) At admission, most patients (in R & P) had INRs in the sub- or supra-therapeutic ranges (<2 & >3), requiring warfarin dose adjustments.

2) Bleeding risk increased by 30% with each unit increase in INR.

3) Bleeding risk independently increased with concomitant use of drugs that increase INR, through warfarin-drug interaction

4) Bleeding risk and adverse events were lower in P emphasizing the benefits of education on warfarin dosing and monitoring INRs at hand-off sessions.

Variable	#	During R #(%total)	During P #(%total)	P-value
death	5	2 (2.5%)	3 (2.2%)	1.000
stroke	2	0 (0%)	2 (1.5%)	0.,531
bleeding	33	18 (22.2%)	15 (11%)	0.031
low INR*	62	17 (21%)	45 (32.9%)	0.064
high INR*	76	38 (46.9%)	37 (27%)	0.003

*** anytime during hospitalization**

A57

Innovative Geriatrics Evidence Based Medicine (EBM) Curriculum in a First Year Medicine Rotation.

H. Cheng, P. Wyer, K. Matsoukas, E. Granieri. *columbia university, 5141 Braodway, NY.*

Supported By: PI is a recipient of Geriatric Academic Career Award

Introduction/Objective: EBM, a core component of postgraduate medical education, aims to equip residents to appropriately incorporate information from RCTs into decision making. This task in geriatrics is challenging because few older adults and minorities are included in RCTs and outcomes of RCTs in older people may be confounded by using multiple agents and prevalent dementia and other co-morbidities. We developed a pilot curriculum combining critical appraisal of RCTs with culturally competent care for medical interns doing a one-month mandatory geriatrics rotation in an ethnically diverse academic community hospital. Its value perceived by trainees was assessed. Design/Methodology: After an orientation and needs assessment, a four-phase EBM curriculum ensues: Phase 1: 1st 2h ("see one") session, the instructor demonstrates how to critically appraise an RCT that recruited older adults and gives an assignment. 2nd 2h ("do one") session, the instructor leads discussion of the same assignment. Phase 2 ("teach one"): Each intern presents an RCT paper to a group of residents and geriatrics faculty in a weekly journal club. The presentation integrates an RCT with a geriatrics vignette or case seen by the presenting intern. Phase 3 (Bedside application): A culturally based geriatrics module integrates EBM with culturally competent care at a geriatrics clinic. By interviewing an older Latino/a, each intern learns how culture and values shape the understanding of patients' medical needs, problems, and medications. Interns learn how to use high quality RCTs to inform their treatment plan. Phase 4: Reinforcement and program evaluation using an anonymous survey. Results: 95% of total 61 medical interns from 13 blocks (n=58) attended our EBM training. 80% (n=49) gave a journal club presentation. 28% (n=17) did the assignment. 26% (n=16) discussed the medical and medication issues with 16 elderly Latino/a according to patients' culture. At the end of training 74% (n=45) completed the evaluation. 71% (n= 32) rated our EBM training as extremely valuable or very valuable, 20% (n=9) as somewhat valuable, and 9% (n=4) as minimally or not valuable. Conclusion: We developed an innovative geriatrics EBM curriculum focusing on critically appraisal of RCTs and integration of EBM and culturally competent care in one-month geriatrics rotation. The majority of interns perceived it as valuable. Other educational outcome data is pending final analysis.

A58

Palliative Medicine Knowledge of New Graduate Medical Trainees:9 months' follow-up Experience of the Ohio Resident Chapter of Geriatric Medicine sponsored by the ADGAP.

S. Nakagawa,[1] A. Brateanu,[1] Y. Cho,[2] J. Yoo,[3] Y. Chang.[1] *1. Medicine, Huron Hospital, Cleveland, OH; 2. School of Public Health, University of Minnesota, Minneapolis, MN; 3. Geriatric Medicine, University of Michigan, Ann Arbor, MI.*

Introduction:The Ohio Resident Chapter of Geriatric Medicine (ORCGM,2008-2009 President:Shunichi Nakagawa) has been sponsored by the Association of Directors of Geriatric Academic Programs (ADGAP) and evaluated palliative medicine knowledge of new graduate medical trainees. The ORCGM aimed to identify barriers of their learning about palliative medicine.

Methods:22 new graduate medical trainees in a training hospital participated. Baseline scores of their palliative medicine knowledge were collected before starting their training prorgams. Medical decision-making questions were created by above researchers based on the National Residency End-of-Life Education Project (2005)from 5 domains: 1.Hospice referral, 2.Pain management, 3.Decision making of emergent guardianship, 4.Communication skills in breaking bad news, and 5.Delirium management. All participants were then educated in palliative medicine through bimonthly live lectures and e-mail newsletters created by the ORCGM. For 9 months' period, participants were exposed to above testing questions including 4 weeks' intensive care rotation, 3 months' medical floor rotation and year-long a half day outpatient clinic. Palliative medicine knowledge of participants was reassessed by the same medical decision-making questions in 9 months.

Results: Average scores improved from 53.6% to 60.0% ($p<0.01$). There was improvement of score with no statistical significance in domains of communication skills in breaking bad news from 41% to 45% ($p=0.71$). However, the score of managing delirium decreased significantly from 64% to 36% ($p=0.03$). More than half of participants chose benzodiazepines instead of antipsychotics as the drug of choice for managing delirium in the ICU.

Conclusions: Absolute score of palliative medicine for new graduate medical trainees were still low (60.0%) even after 9 months' education. The delirium management deficiency might be from the teaching that participants received during their ICU rotations. Thus, an ICU multidisplinary educational module might correct this negative phenomenon. The ORCGM contemplated 'role play' in new palliative medicine education module for improving new medical graduation trainees' communication skills in breaking bad news more effectively.

A59

Geriatricizing an EMR for use in a Geriatrics Clerkship.

J. E. Agens, N. Clark, M. Dangiolo, J. L. Lloyd. *Geriatrics, Florida State University College of Medicine, Tallahassee, FL.*

Supported By: SOAPware is a product of Docs, Inc., which is donated to the Florida State University College of Medicine for instructional purposes.

Purpose: To describe the development of an innovation in the teaching of geriatric care across transitions utilizing geriatric assessment macros and encounter note templates in an EMR used by students in a 4th year required geriatrics clerkship. Students are initially exposed to the basic EMR, SOAPware, in the 3rd year. They each are provided laptops loaded with the software and are trained throughout the 3rd year. Our project designed new geriatric specific templates for use in SOAPWARE. Templates for geriatric history, physical, quick assessment tools (function, cognition, mood), and syndromes are accessed from an alphabetical list or by using quick key codes. For example, as the phrase "GeriPE" is typed, a template for the geriatric physical exam appears. The templates were designed by geriatrics faculty for students to use on a required fourth year geriatric clerkship during their patient rounds as they follow patients across transitions in care settings. Assessment tools such as the GDS and PHQ9 are built into the geriatric assessment template. Students participating in the pilot are trained to use the new templates during the first few days of the rotation. Students can export a HIPAA compliant patient record and email it to their clerkship faculty for pre-rounding review. Volunteers were recruited from students on the clerkship to assist in evaluating the usefulness of this teaching tool, and faculty were queried as to its effectiveness and efficiency in enhancing teaching. Students were debriefed at the end of the clerkship, and comments were collected. Student reactions were mixed. Most students felt it enhanced learning of geriatric assessment. Some students were negatively predisposed to the use of an EMR. Faculty felt it helped them assess the student's progress, to teach HIPAA, and facilitated remote teaching. Conclusion: With modification, the Geriatricized EMR can be a useful tool in geriatric teaching.

A60

Use of a Technological Instrument to Facilitate Educational Program Development in Medicine.

Y. Bao,[1] J. Huh,[1] M. K. Goldstein.[1,2] *1. Geriatric Research, Education and Clinical Center, VA Palo Alto Health Care System, Palo Alto, CA; 2. Center for Primary Care and Outcomes Research, Stanford University School of Medicine, Stanford, CA.*

Tomorrow's physicians are faced with many challenges as the nation's health care systems continue to grow with increasing complexities and medical science advancements. In response to these challenges, the Accreditation Council of Graduate Medical Education (ACGME) recently expanded and revised program requirements for medical residency programs to focus on educational outcomes in six competencies. In order to meet these changing requirements and improve quality of education, programs are faced with the task of providing learning opportunities to meet all requirements in an increasingly crowded curriculum. This is particularly challenging in a geriatric medicine fellowship program given the short training period. To improve the process of curriculum development, we implemented a tool to map learning opportunities with program requirements to stay in compliance within constraints of time and other program resources.

Description: To develop the tool we conducted a series of operations within Microsoft Excel to create a mapping grid of educational programs by ACGME requirements. These steps facilitated evaluation of the programs by providing a user friendly and more efficient interface:

1) We created three excel worksheets to reflect ACGME content requirements, i.e., specific topics, subspecialties, and specialty topics in Long Term Care. 2) Within each tab, content requirements were listed as a heading, and our educational programs were listed within the first column on each row. 3) Our educational programs were organized by categories, i.e., Rotations, and Longitudinal Experiences and Core Seminars etc. Within each category specific experiences were also listed. 4) The Associate Clinical Fellowship Director indicated when an educational experience matched one of the ACGME competency by entering a "1" within the appropriate cell. 5) Several functions available within excel, i.e., the sum and filter functions were used to further organize the content.

Conclusion: This tool proves helpful in curriculum development to ensure compliance with program requirements which are increasing in numbers and complexities. Additionally, this tool can also serve to ensure that comparable curriculum contents are delivered to trainees from year to year regardless of changes in program resources over time.

A61

Impact of a Transitions of Care Experience on Internal Medicine Resident Training in Geriatrics.

J. M. Pavon, G. T. Buhr. *Internal Medicine, Duke University, Durham, NC.*

Supported By: 1 K01 HP00111-01 Geriatric Academic Career Award HRSA, Donald W. Reynolds Foundation

Purpose: Intervention models have been designed to provide elderly patients and caregivers with tools to ensure continuity and quality across care settings. Little is known about the influence of these models on physician providers. This study intends to measure the change in knowledge and skill of medicine interns who participated in a Transitions of Care (TOC) Experience, an intervention aimed to reduce conflicting recommendations, to ensure medication reconciliation, and to encourage older adults to take an active role during care transitions between hospitals, continuing care retirement communities, and home. Methods: All Duke University internal medicine interns who participated in the geriatric medicine TOC Experience from 1/08—11/08 were eligible for a survey study. A total of 23 self-assessment surveys were completed during a debriefing session at the end of each TOC Experience. The survey assessed their ability to (a) identify potential threats to a well-executed transition, (b) anticipate consequences of a poorly executed transition, (c) address changes in functional status, (d) compile pre and post hospital medication records, and (e) evaluate medication discrepancies. Each skill was measured using a scale of 1 (not confident at all) to 5 (completely confident). Qualitative data were also collected concerning the impact of the TOC Experience on their future patient care practice. Results: Prior to completing the TOC experience, interns felt most confident in compiling medication records (median score 4; IQR scores 3-4) and the least confident in addressing changes in functional status (median score 3; IQR scores 2-3). After completing the TOC Experience there was a significant improvement across all 5 skill sets, ($p<0.001$), with a large improvement occurring in ability to evaluate medication discrepancies (pre experience median score 3; IQR scores 2-4, vs. post experience median score 4; IQR scores 4-5, p-value 0.0002, wilcoxon signed rank test). Qualitative data revealed that completion of the TOC Experience will impact the practice of the interns most strongly in the areas of medication reconciliation and inter-provider communication. Conclusion: The TOC intervention was effective in improving physician confidence in the care transition process especially concerning medication reconciliation and inter-provider communication. A future focus of this ongoing project will be a follow-up survey to assess long-term impact.

A62

Pills, Pills and More Pills:Teaching about Barriers & Solutions in Polypharmacy.

K. Denson, S. Denson, J. Kuester. *Internal Medicine/Geriatrics, Medical College of Wisconsin, Milwaukee, WI.*

Purpose: Polypharmacy is a frequent occurrence in the care of elderly patients. While lectures may identify medications of concern, learners may be less attuned to identifying barriers and solutions for medication non-adherence in elderly patients. "Medication Management" is the first domain identified as crucial geriatrics content through the AAMC/John A. Hartford Foundation sponsored "Consensus Conference in Geriatrics". Seeking to create change in learner medication prescribing practice and patient education, we created an interactive learning exercise to increase empathy and understanding surrounding issues of polypharmacy.

Methods: Geriatric Polypharmacy Pre/Post session Questionnaires were created. Learners rated their knowledge/experience in 5 areas (e.g., "I can identify barriers/solutions to medication adherence in my elderly patients", "I routinely provide suggestions to my elderly patients to improve adherence", "I routinely attempt to decrease the number/frequency of medications prescribed for my elderly patients"). Learners then filled a pill box with "medications" (various candies) according to the medication profile of an actual geriatric patient and took the "medications" as prescribed, for one week. Then the learners and faculty facilitator discussed the experience, with emphasis on barriers and solutions to improve medication adherence.

Results: The pilot group of students and medicine residents (N=5) rated their pre-session knowledge level of barriers and solutions at an average of 3 on a 6 point scale (1=no experience/knowledge, 6=exceptional experience/knowledge), with post-session average increasing to 5. The questionnaire identified self-reported increased attempts to lower the number/dosing frequency of medications prescribed to their elderly patients that week (pre-session average=3, post-session average=5). Learners "missed" an average of 11/28 doses. Comments included, "You really need someone to remind you—or a good routine…" and, "This made me very aware of the difficulty in remembering to take meds. If I have trouble with it as a healthy young adult, I can only imagine the difficulties my elderly, sick patients must have…"

Conclusions: An interactive, "hands-on" polypharmacy experience paired with group reflection improves learner knowledge of med-

ication adherence barriers and solutions, resulting in attempts to decrease number and dosing frequency of medications of elderly patients.

A63

Getting Feedback from the Real Experts: A Survey of Older Adult Volunteers to Evaluate a Senior Mentor Program.

M. T. Heflin, E. Herbert. *Medicine, Duke University, Durham, NC.*

Supported By: This project was supported in part through the Donald W. Reynolds Foundation.

Background: Medical schools across the U.S. have established Senior Mentor Programs to provide students with opportunities to learn about aging by interacting with community dwelling older adults. These programs offer students practical experiences with older adults that achieve objectives on professionalism, communication skills, geriatric assessment and attitudes about aging. Assessment can be difficult to document as many of these interactions are not directly observed. We aimed to have senior mentors assess the overall success of the program.

Methods: As part of a weeklong symposium on aging at Duke University, students meet with volunteer Senior Mentors from the community to practice interviews and assessments of cognition, function and mobility. They also inquire about life experiences with illness and caregiving. Students debrief in small groups with faculty following the interview to discuss their experiences. We asked seniors to complete a brief questionnaire inquiring about professionalism, communication, and asking about the students' completion of specific elements of the interview. Seniors also offered general comments.

Results: We looked at data across four consecutive years. Response rates ranged from 39% in 2005 to 84% in 2008. Overall, seniors agreed that students were highly professional and communicated well. Seniors agreed less strongly with the statement that the experience would help students become better physicians. Per senior report, students completed most of the assessments required. One exception was assessment of mood, which had not been a major emphasis in the didactic sessions. Senior comments highlighted the character and congeniality of many students, and focused on logistical and communication challenges, including difficulty with hearing or understanding. Comments also alluded to specific behaviors of students, including eye contact, clarity of speech or question phrasing. Seniors expressed the enthusiasm and ownership of the experience.

Conclusion: Senior Mentors provided important feedback for program evaluation through a follow-up survey. This survey measures completeness and quality of student performance on specific assessments. Senior comments also shed light on professionalism and communication as well as programmatic challenges. Use of this method for grading of individual students will require further validation and clarification of expectations among seniors and students.

A64

Resident Perceptions of Palliative Care Training in the Emergency Department.

N. Meo,[1] U. Hwang,[2,3] R. Morrison.[2,4] *1. Emergency Medicine, Mount Sinai, New York, NY; 2. Brookdale Department of Geriatrics and Adult Development, Mount Sinai, New York, NY; 3. Geriatrics Research, Education and Clinical Center (GRECC), James J. Peters VAMC, Bronx, NY; 4. Lillian and Benjamin Hertzberg Palliative Care Center, Mount Sinai, New York, NY.*

Supported By: Grant support from the 2008 Medical Student Training in Aging Research (MSTAR) Program at Mount Sinai School of Medicine

OBJECTIVE: The objective of this study was to characterize the level of formal training and perceived educational needs in palliative care of emergency medicine residents. METHODS: A 16Q survey was administered at weekly resident conferences at five emergency medicine (EM) residency programs in New York City during 2008. Survey items asked residents to (1) respond to Likert scaled statements about the role of palliative care in the emergency department (2) quantify their level of formal training and personal comfort in symptom management, discussion of bad news and prognosis, legal issues, withdrawing/withholding therapy and (3) express their interest in future palliative care training. RESULTS: One hundred and forty (63%) of 221 total residents completed the survey. Of those surveyed, 49% completed some palliative care training before residency; 74% agreed or strongly agreed that palliative care was an importance competence for an EM physician. Only 25%, however, reported having a "clear idea of the role of palliative care in EM." The highest self-reported level of formal training was in the area of advanced directives or legal issues at the end of life; the lowest levels were in areas of patient management at the end of life. The highest level of self-reported comfort was in giving bad news and the lowest in withholding/ withdrawing therapy. The majority of residents (54%) showed positive interest in receiving future training in palliative care. CONCLUSIONS: New York City Emergency Medicine Residents report palliative care as an important competency for emergency medicine physicians yet also report low levels of formal training in palliative care. The majority of residents surveyed favored additional training.

A65

Early integration of a geriatric-specific assessment in a medical school curriculum.

P. O'Sullivan,[1,2] A. Gangavati,[2] J. Irish,[2] K. Callahan,[2] Z. Tan,[2] A. Fabiny .[2] *1. Hebrew Senior Life, Roslindale, MA; 2. Harvard Medical School, Boston, MA.*

Supported By: This project was supported by the Reynolds Foundation.

Background: Geriatrics education occurs at a late stage in undergraduate medical education. Consequently, many medical students, interns and residents often adopt a generic approach to performing history and physical examinations (H&Ps) on older patients. We describe an innovative institutional approach to early teaching of a geriatric-specific H&P. We emphasize elements that are critical to a comprehensive geriatric assessment. The goal was for 2nd year medical students to incorporate our geriatric-specific H&P-elements into their clinical assessment, improve documentation of geriatric medical issues, generate interest in this subspecialty, and better prepare the students for the future care of the aging population, regardless of specialty choice. Methods: A mandatory 1/2 day teaching session was integrated into the 2nd year curriculum of Harvard Medical School. The teaching session occurred in 3 sites- a lecture room, a patient simulation laboratory, and a long-term care facility (LTF). The lecture outlined a clinical approach and specifically emphasized 4 components of the clinical history (medication history, geriatric screening history, functional history, geriatric social history) and 4 elements of the physical examination (orthostatic vital signs, hearing and vision, cognitive assessment via CAM and miniCOG, mobility exam via timed 'get-up and go' test). Next, the students attended a patient simulation laboratory where the assessment strategy was applied in a simulated environment. Lastly, the students performed the same geriatric-specific H&P on real nursing-home patients in a LTF under the supervision of attending geriatricians. Results: 168 medical students undertook the same 1/2-day teaching session. The students were divided into 4 groups for logistical reasons. The teaching faculty was comprised of 25 Geriatricians (didactic, simulation and nursing-home-observation), though the didactic and simulation part had only a key faculty of three. The teaching session was rated in the feedback as extremely popular by the students. Assessment of the effect of this training on clinical behavior by scoring of written clinical assessments from students generated before and after the training is underway.

Conclusions: Early structured teaching of the principles and practice of Geriatrics can be successfully incorporated into a medical school curriculum.

A66

Staying in the Game: The Evolution of an Integrated Geriatrics Curriculum in Undergraduate Medical Education.

S. M. Gillespie, A. Medina-Walpole. *Division of Geriatrics/Aging, University of Rochester, Rochester, NY.*

Supported By: Dr Gillespie is the recipient of a Geriatric Academic Career Award from the Health Resources & Services Administration, Bureau of Health Professions.

In 2000, the University of Rochester School of Medicine developed a new four-year curriculum for medical student education. As part of this initiative, the Aging Theme, an integrated geriatric curriculum with significant impact across all four years of medical education, was created. Early assessments demonstrated the positive influence of the curriculum on geriatric education and medical student attitudes. However, in the years since the Aging Theme was developed, many changes and restructuring of the medical curriculum have occurred, potentially affecting the impact of the Aging Theme.

In order to determine the current status of the Aging Theme and assess the sustainability of our curricular initiatives, a comprehensive curricular review was undertaken. Using the 26 recently developed AAMC Minimum Geriatric Competencies for Medical Students as benchmarks, a survey of the entire Double Helix curriculum was completed in July 2008. Course and clerkship directors were asked to individually review their curricular content for all geriatrics or aging related topics. A working group review of curricular content demonstrated that current Aging Theme initiatives address knowledge and skill development relevant to all of the 26 competencies. Some competencies, particularly those under the domains of cognitive and behavioral disorders and self-care capacity, were addressed by multiple initiatives of the current curriculum. Others, notably pressure ulcers, had more limited attention. Overall, this process revealed that most early Aging Theme initiatives have been sustained as high impact parts of the medical curriculum, but selected others have been discontinued during curriculum restructuring processes. Current curricular strengths also include several aging related topics that fall outside the clinical competency domains including basic science topics (nutritional management, genetics, and human development) and career development initiatives such as the Aging Interest Group and the Aging Curricular Emphasis. The University of Rochester Aging Theme has been successfully sustained over the past 8 years and currently addresses all of the 26 AAMC Medical Student Competencies. The University of Rochester Aging Theme serves as a national prototype of the evolution of integrated geriatric medical education.

A67

Comparison of Frailty Phenotype and Six Minute Walk as Predictors of Survival and Performance in Heart Failure.

A. Ahmad,[1] R. Boxer,[2] K. Annis,[1] A. Kleppinger,[1] W. D. Hager,[3] A. M. Kenny.[1] *1. Center on Aging, University of Connecticut Health Center, Farmington, CT; 2. University Hospital, Cleveland, OH; 3. Neag Cancer Center, University of Connecticut, Farmington, CT.*

Supported By: MO1222 RR06192

Introduction

The prediction of health outcomes from assessment of frailty have been the focus of several studies. We have previously shown that frailty (as measured by the phenotype described by Fried et al) and the six minute walk had moderate agreement in individuals with heart failure (HF). In addition, there was a discordant group in which individuals did not meet criteria for frailty but had low endurance on the six minute walk (<300 m). This study is to ascertain survival and performance in the three identified groups: frail/low endurance (F/LE), nonfrail/low endurance (NF/LE) and non-frail/high endurance (NF/HE). We hypothesize that the discordant group (NF/LE) will have survival intermediate to that found in the NF/HE and F/LE groups.

Results

We contacted the 83 individuals (60 HF, 23 age-matched controls) included in the original study (2004-2005). We were able to obtain information on 60 subjects (72%):46 with HF and 14 controls. Twenty-one individuals had died (35%), all but one from the HF sample. By survival analysis, there was a significant difference in survival by frailty/endurance categorization (p=0.018). The percent of individuals that died and the mean days of survival for NF/HE was 7/39 (18%) and 1458 days, for NF/LE, 5/9 (56%) died and 1173 days and for F/LE 9/11 (82%) died and 1080 days. In the participants available for reassessment of the six minute walk time and frailty phenotype, 19/30 were from the HF population. Twenty-three subjects(77%) remained in the original frailty/endurance category from the first assessment; 22 remained NF/HE and 1 remained NF/LE. Six of the remaining 7 subjects declined in function; 4 subjects (13%) declined from NF/HE to NF/LE and 2 (7%) declined from NF/LE to F/LE. One subject improved from F/LE to NF/HE.

Conclusion

Individuals with HF and frailty and low endurance had high mortality rates. The mortality rates remain high but were less dire in the group where there was not agreement between the frailty phenotype and the six minute walk, representing an intermediate group. Seventy-seven percent of individuals that began the study with no frailty and high endurance remained stable and did not demonstrate aspects of frailty or low endurance in 4 years follow-up.

A68

Vascular risk and depressive symptoms in African-American older adults.

A. R. Azar,[1] J. L. Rudolph,[2,1] L. J. Cho,[2] L. G. Grande,[2] C. Barber,[2] R. McGlinchey,[2,3] L. A. Lipsitz,[4] W. P. Milberg.[2,3] *1. Division of Aging, Brigham and Women's Hospital, Boston, MA; 2. Geriatric Research Education and Clinical Center, VA Boston Healthcare System, Boston, MA; 3. Department of Psychiatry, Harvard Medical School, Boston, MA; 4. Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, MA.*

Supported By: Kaplen Fellowship on Depression through the Dept of Psychiatry, Harvard Medical School awarded to ARA and grant P60AG008812 from the NIA awarded to LAL.

Introduction:

The vascular depression hypothesis proposes that vascular disease can "predispose, precipitate, or perpetuate" depressive syndromes in late life. As African-Americans are at an elevated risk for vascular events, the association between vascular risk and depressive symptoms was explored in this high risk population.

Methods:

Subjects: African-American community elders (N=184). *Measures*: The Geriatric Depression Scale (GDS) is a 30-item scale which measures self-reported depressive symptoms in geriatric populations (range 0-30; worst 30). Vascular risk was coded according to the Framingham Stroke Risk Profile (FSRP), which assigns 10-year risk of stroke (range 0-30; worst 30). *Analysis*: Linear regression analysis examined the effect of vascular risk on depressive symptoms. The effects of age and medical comorbidity were controlled for by entering these variables into the regression analysis.

Results:

Mean age was 65.31 (SD=7.42). Most participants were women (61%) and the sample was relatively highly educated (Mean=14.12 SD=3.05). Mean GDS was 4.87 (SD=5.07) and FSRP was 8.26 (SD=6.34), both in the low range. Mean number of medical comor-

bidities was 0.53 (SD=.876). Results of the linear regression analysis are presented in the table.

Conclusions:

In this sample, vascular risk was not significantly associated with depressive symptoms. However, the lack of relationship may be due to the fact that this sample of African-American older adults was high functioning with good general health and emotional wellbeing, thus reflecting a truncation in the predicted association. Future research should explore the relationship between health factors and depression in broader samples.

Linear regression analysis for variables predicting GDS score

	Variable	B	SE B	β
Step 1:	Age	-.053	.055	-.073
Step 2:	Age	-.064	.056	-.089
	Comorbidity	.485	.454	.083
Step 3:	Age	-.074	.059	-.104
	Comorbidity	.514	.458	.088
	Vascular Risk	.034	.067	.042

Note: R2=.005 for Step 1; ΔR2=.007 for Step 2; ΔR2=.002 for Step 3.

A69

The Impact of Zoledronic Acid (ZOL) on the Change in Charlson Co-Morbidity Index Score and its Relationship with Mortality after Hip Fracture (HF).

C. Colon-Emeric,[1] J. Magaziner,[2] K. W. Lyles,[1] S. Boonen,[3] S. Yu,[4] K. Desai,[5] C. Bucci-Rechtweg,[4] P. Mesenbrink.[4] *1. Duke University and VA Medical Centers, Durham, NC; 2. University of Maryland, Baltimore, MD; 3. University of Leuven, Leuven, Belgium; 4. Novartis Pharmaceuticals, East Hanover, NJ; 5. International Medical Consultants, Easton, PA.*

Supported By: Novartis Pharma AG

Purpose: ZOL-treated patients (pts) after HF have 25% lower mortality risk *vs.* placebo. This retrospective analysis explored if ZOL impacted the change in co-morbidity score over time, and if it explained part of its mortality benefit.

Methods: This randomized trial was conducted in 2127 pts with recent HF who received annual i.v. infusions of ZOL 5 mg or placebo. All pts received a loading dose of vitamin D and thereafter they received daily supplementation with oral calcium and vitamin D. A modified Charlson co-morbidity index was calculated at baseline and at 12-mo intervals using laboratory values and adverse events. Stepwise Cox proportional hazard regression modeling was used to evaluate the effect of various baseline and time-dependent risk factors and change in modified co-morbidity index score on death, and interaction with ZOL.

Results: 3-yr survival rates were strongly related to baseline co-morbidity score (Table). Pts with lower co-morbidity scores received a greater mortality benefit from ZOL, while those with scores of ≥4 had similar risk of death regardless of the treatment group. Over the entire study period, co-morbidity scores increased in 25.8% pts. A higher percentage of pts who died had an increase of at least 2 units in co-morbidity score (10.3%) *vs.* pts who survived (3%). Of those pts who died, 12% of placebo-treated pts had an increase of at least 2 units *vs.* 7.9% of ZOL-treated pts. ZOL treatment by change in co-morbidity score interaction term trended to significance (p=0.07), indicating that part of the mortality effect of ZOL may be explained by a lower rate of decline in co-morbidities.

Conclusions: ZOL has a greater mortality benefit in pts with lower baseline co-morbidity scores. The impact of ZOL on common co-morbid conditions and functional decline after HF warrants further study.

3-yr survival rates by baseline co-morbidity score

Baseline co- morbidity score	3-yr survival rate, % ZOL (n=1054) Placebo (n=1057)	
≤2	96.84	88.32
3	91.01	86.72
4	83.77	82.84
≥ 5	68.21	67.65

A70

Strategies to Avoid Falls in Elderly (SAFE) – Initial Results from a Hospital-wide Surveillance Study.

H. Abskhroun,[1] D. Uncheselu,[1] M. Sugrue,[1] D. M. Sengstock.[1,2] *1. Internal Medicine/Geriatrics, Oakwood Hospital, Dearborn, MI; 2. Internal Medicine, Wayne State Univ, Detroit, MI.*

Background: Injury from falls in hospitalized patients leads to increased morbidity, higher cost, and patient dissatisfaction. Fall prevention programs reduce falls, but have not impacted injuries. Targeting patients at risk for injury may be a superior strategy. Although fall risk factors have been described, injury risk factors have not. This study examined predictors for *injury* after a fall in hospitalized patients.

Hypothesis: Because delirious patients have impaired reactions, we hypothesized that delirium is associated with injury after a fall.

Methods: OHMC's fall database was queried for patients who sustained a fall between 2006-2007. Nurses recorded demographic, clinical, and contributing information at the time of the fall. The univariate associations between injury and demographic variables, hospital unit, time of day, delirium/confusion/inability to follow directions, and established fall risk factors were determined. Logistic regression established the independent predictors of injury.

Results: Complete results were available on 692 patients (71.9±15.6 years, 51% male) who sustained a fall on medical or telemetry units. Injury status was recorded as: a)no injury (n=512), b)required increased monitoring (n=72), c)temporary harm (n=69), d)serious harm (n=47). Associations were identified between: 1)injury and age (r=0.082, p=0.03); 2)injury and delirium/confusion/inability to follow directions (r=0.101, p<0.01). Injury was not associated with other fall risk factors including: impaired mobility (p=0.08), diagnosis, fall history, frequent toileting, improper footwear, or time of day (p>0.2 for all). For stepwise regression analysis, injury was recategorized into "no injury" vs "any complication." After adjustment for age (0=0.06), sex (p>0.2), and hospital unit (p>0.2), confusion/delirium (OR=1.76, p<0.01) remained independently predictive of injury; no other variables entered the model (p>0.10).

Conclusions: Hospital fall prevention programs have not been effective at reducing injuries. This study suggests that delirium is a risk factor for injury in patients who fall; none of the other fall risk factors were predictive. Because delirious patients are at risk, interventions targeting delirium may lower injury rates due to falls.

A71

Measuring Self-perceived Change in Mobility and Balance.

E. S. Hile,[1,2] S. Perera,[2] D. J. McGurl,[2] D. M. Wert,[1,2] J. M. VanSwearingen,[1] J. S. Brach,[1] S. A. Studenski.[2] *1. Physical Therapy, University of Pittsburgh, Pittsburgh, PA; 2. Geriatric Medicine, University of Pittsburgh, Pittsburgh, PA.*

Supported By: NIA K23AG026766, NIH/NIA P30AG024827

PURPOSE: Change in global self-ratings can be used to assess interventions in clinical and research settings, but the best way to assess change is not known. Assessments can be based on perceived

change over time (transition rating), or repeated self-report of current status (state rating). We wished to assess concordance between transition and state approaches to measuring change. METHODS: 96 community-dwelling older adults (mean age 77 yrs, 74% F, 12.5% B) provided global estimates of mobility and balance every 6 months using state items (5-point Likert scale poor to excellent)and transition items (7-point scale much worse (-3) to much better (+3)). We compared transition rating to the difference in the state ratings using 3X3 cross-tabulations with categories of better, same, and worse. Any disagreement between categories was defined as discordance. Baseline characteristics of concordant and discordant groups were compared using t-tests. RESULTS: Large discrepancies between state and transition approaches were seen for both mobility and balance. 58/96 (60%) did not agree on mobility change, and 19 (20%) reported change in opposite directions using the two approaches. Effects were similar for global balance items. The most common discrepancies for both mobility and balance were reports of worsening by transition approach but being the same or better by state approach. Concordant and discordant groups did not differ in gender, cognitive performance, or baseline 4 m gait speed. Compared to the concordant group, those with discordant balance ratings were older (p = 0.025), and those with discordant mobility ratings had higher GDS scores (p = 0.040). Test-retest reliability of the global items was fair to moderate. CONCLUSIONS: State and transition assessments often do not agree. While disagreement might be due in part to modest psychometric properties of global items, state and transition approaches may reflect different perceptions. Further research is needed to clarify how older adults define mobility and balance, how they determine direction and magnitude of change over time, and how these reports relate to performance change.

A72

Ranked Priorities among Older Adults for Avoiding Adverse Cardiovascular vs. Fall Injury and Medication-related Outcomes.

J. Salmon, G. McAvay, L. Bianco, S. Ginter, M. Tinetti. *Yale University School of Medicine, New Haven, CT.*

Supported By: This research supported by the following grants: P30AG21342 Claude D. Pepper Older Americans Independence Center - NIA, MSTAR Program from Hartford Foundation and National Institute on Aging

Although rarely discussed explicitly, there is an implicit tradeoff between risks of cardiovascular (CV) versus fall-related and medication symptom outcomes with antihypertensive medications. Study aims were to determine how older hypertensive persons at risk of falling ranked avoidance of CV, fall, and medication-related events and to ascertain reasons for their priority.

Participants were 103 hypertensive community-living individuals 70+ years old with previous falls or fall risk factors. After demographic and health data were ascertained, participants completed a card order ranking task and responded to open-ended questions regarding reasons for their ranking.

Of the 103 participants, 83 (81%) ranked avoiding CV outcomes first; 20 (19%) prioritized avoiding fall injuries and medication symptoms. Table 1 displays reasons cited by participants for their priority. Concern about disability and personal experience were among the top reasons for both groups. Concern about head injuries was cited only by those who prioritized falls (P<.01) while death was mentioned only by those prioritizing CV outcomes (P=.02).

Participants varied in their priority in the tradeoff between avoiding CV vs. fall injury and medication-related outcomes and were able to articulate reasons for these preferences. Tradeoffs should be acknowledged and priorities and reasoning elicited as part of clinical decision-making.

Table 1. Reasons for Ranking

Reason	Avoid Cardiovascular First (N=83)	Avoid Falling or Symptoms First (N=20)	P-Value
	n(%)	n(%)	
Fear death	18 (22)	0 (0)	0.02
Personal experience with event	15 (18)	8 (40)	0.07
Fear disabilitity	15 (18)	4 (20)	1.00
Have a risk factor	10 (12)	2 (10)	1.00
Fear cardiovascular, fall or symptom event	10 (12)	2 (10)	1.00
Family history	10 (12)	0 (0)	0.20
Fear sudden health change	4 (5)	0 (0)	1.00
Experience of others	3 (4)	2 (10)	0.25
Fear lingering	3 (4)	0 (0)	1.00
Outcome not modifiable	3 (4)	0 (0)	1.00
Heard about in media	2 (2)	0 (0)	1.00
Avoid symptoms to avoid falls	0 (0)	2 (10)	0.36
Concern about head injury	0 (0)	6 (30)	<0.01
No reason given	17 (20)	1 (5)	0.19

Some participants mentioned multiple reasons. P-values based on Fisher's exact test.

A73

Work up of Syncope in an Elderly Population.

O. Edo-Ohonba,[1] D. Schneider,[1] M. Naglak,[1] M. Hofmann.[1,2] *1. Medicine, Abington Memorial Hospital, Abington, PA; 2. Muller Center for Senior Health, Abington Memorial Hospital, Abington, PA.*

Supported By: Not funded.

Background: Syncope is a common reason for which elderly patients are assessed in the emergency department (ED). History, physical exam and electrocardiography are the standard work up with a combined diagnostic yield of 50%. Electroencephalography, computed tomography (CT), and Doppler ultrasonography have combined diagnostic yield of 2-6%. Because of difficulty in diagnosing the etiology of syncope, neurological imaging is often performed. Burdens of this testing and prolonged hospitalization should be carefully considered in the elderly.

Objective: The purpose of this study was to evaluate the history and physical exam of patients admitted for syncope and the utility of neurological imaging in these patients.

Methods: This was a retrospective study of 100 patients with a diagnosis of syncope admitted between April and July 2006 to the ED of a 600-bed community teaching hospital. The history and physical exam were reviewed using a chart abstraction tool. Data were summarized using frequencies, means and chi square analyses.

Results: A total of 100 patients were involved in this study, 58% were female. Mean age was 72 ± 17.9 yrs. Patient histories revealed that: 32% had prior syncope, 23% had coronary artery disease, 7% had valvular heart disease, and 9% had diabetes. Micturition and defecation was associated with syncope in 8% of patients, 3% had palpitations, 1% had chest pain, and 5% had a history of congestive heart failure. Documentation of cardiac related history was good, but ~75% of patients had no documentation of orthostatic BP and 19% had no documentation of neurology exam. 70% of all patients had neuroimaging; 60% CT and 10% magnetic resonance imaging (MRI). 50% of all neuroimaging was ordered in the ED and were CT scans. The radiologist's report did not explain the cause of syncope in any of these patients. For patients who had a neurology consult (n = 17), 41% had an MRI, 47% had a CT, 2% had no neuroimaging. Of those patients who had an MRI (n=10), 70% had a neurology consult (p<. 0005).

Conclusions: We conclude that neuroimaging is of limited diagnostic value in patients with syncope without other neurological signs or symptoms. We believe this is particularly important in an elderly population since prolonged hospitalization can lead to increased complications and risk of morbidity and mortality.

A74

Nutritional Status and Mortality One Year Post Percutaneous Endoscopic Gastrostomy in an Elderly Cohort.

H. Mahboob,[1] D. Dietzen,[1] B. Ghauri,[1] M. Naglak,[1] M. Hofmann.[1,2] *1. Medicine, Abington Memorial Hospital, Abington, PA; 2. Muller Center for Senior Health, Abington Memorial Hospital, Abington, PA.*

Supported By: Not funded.

BACKGROUND: Decisions regarding artificial nutrition are one of the most important medical decisions patients face. Percutaneous endoscopic gastrostomy (PEG) tubes are frequently used in patients who cannot maintain sufficient oral intake but have functioning gastrointestinal tracts.

OBJECTIVE: The aim of the present study was to determine the pre- and post-procedural nutritional status of patients with PEG tubes and the survival benefit one year from PEG tube placement.

METHODS: A retrospective review was performed on consecutive patients who underwent PEG insertion at a 600 bed teaching hospital between January and December 2005. Cases were obtained from an institutional database. Serum albumin and body weight were assessed. These parameters were reviewed immediately before PEG placement and at 3, 6 and 12 months. Survival benefits were obtained.

RESULTS: A total of 173 PEG tubes were inserted (mean age 74.8±11.9). Indications for PEG tube insertion include ventilator dependant respiratory failure (27.2%), dementia and cerebrovascular accidents (both 20.8%). Mean serum albumin before PEG placement was 3.18 ±0.6 gm/dl (range 1.7-4.6 gm/dl) and mean weight was 150.7 ±39.9 lb (range 81-398 lb). No statistically significant difference in nutritional status was noted at any time. At 3 mo., serum albumin fell by a mean of 0.07 gm/dl and weight fell by a mean of 2.3 lb. At the one year follow-up, 59.8% of patients died, with early deaths (<30 days post-procedure) occurring in 43.7% and late deaths (>30 days post-procedure) occurring in 56.3%. Of the patients who died, mean albumin was lower at PEG tube insertion (3.07 gm/dl) and fell throughout the period after insertion until death, a similar trend was seen for weight.

CONCLUSION: Our study indicates that neurological illness (e.g., dementia, dysphagic stroke) is a common indication for PEG placement. No significant improvement was noted in nutritional status post-procedure. Recent data indicate albumin may be an inflammatory marker however; weight and serum albumin remain mainstays in nutritional evaluations. We conclude nutritional status of hospitalized patients does not improve significantly after PEG tube insertion. This small study reinforces the notion that the risk benefit ratio of PEG placement should continue to be re-evaluated.

A75

A Qualitative Analysis of Bathing among Older Persons.

S. Ahluwalia,[1] T. Gill,[1] D. Baker,[2] T. Fried.[1] *1. Geriatrics, Yale School of Medicine, New Haven, CT; 2. Department of Epidemiology and Public Health, Yale School of Medicine, New Haven, CT.*

Supported By: National Institute on Aging

Background: Among older persons, bathing disability is highly prevalent and associated with several adverse outcomes. Because bathing is a complex and highly personal self-care task, effective interventions to forestall or prevent disability will depend on a robust understanding of older persons' perspectives of their bathing experiences. We sought to describe the bathing experiences, preferences and goals of older persons.

Methods: Qualitative cross-sectional study of 23 community-living persons aged 78 and older with a range of bathing ability. In-depth, semi-structured interviews were conducted in the participant's home. Questions addressed the meaning and purpose of bathing, frequency of bathing, use and preferences for different types of bath aids, concerns about bathing, thoughts about future changes in bathing, and wishes about bathing.

Results: Four key themes emerged that illustrated the complex and individual nature of the bathing experience: 1) current approaches to quantitative assessment may fail to capture the restrictions and changes made by older individuals who still rate themselves as "independent"; 2) older persons with disability are accepting of a restricted form of bathing and may even self-restrict prior to frank disability; conversely, they cannot imagine how their ability to bathe could be improved or preserved; 3) preferences for bathing aids vary considerably and are based on variability in goals regarding bathing; some individuals preferred personal assistance because they valued safety or companionship over independence; and 4) older persons receive bath aids through self-assessment rather than through a systematic, formal assessment of bathing need.

Conclusions: The bathing experiences of community-dwelling older persons revealed considerable unmet need. Effective strategies to address bathing disability will require systematic individualized assessments and interventions. These may include: 1) more detailed assessment of bathing ability, in order to target those persons who have made modifications in their bathing routine and 2) interventions based on changing expectations regarding the inevitability of decline and tailored to individual preferences and goals.

A76

Factors Associated with Suboptimal Benzodiazepine Use in an Older US cohort, 2004-6.

T. Li,[1] S. Dublin,[2,1] S. L. Gray,[1] J. C. Nelson,[2,1] N. S. Weiss,[1] E. B. Larson.[2,1] *1. University of Washington, Seattle, WA; 2. Center for Health Studies, Group Health, Seattle, WA.*

Supported By: National Institute on Aging grants U01AG006781-22 & K23AG028954

Background:

Benzodiazepine use is common in older adults and is associated with adverse effects including falls and fractures. Many initiatives have been undertaken to reduce use. At Group Health (GH), a large, integrated health-care delivery system, efforts have targeted long half-life agents, believed to convey higher risk. Heavy use of benzodiazepines is also of concern. Our objective was to examine recent usage patterns (2004-6) and factors associated with long-half-life or heavy use in an older cohort at GH.

Methods:

Subjects came from the Adult Changes in Thought (ACT) study, a prospective study which in 1994 began enrolling community-dwelling, nondemented GH members age 65+. Biennial assessments included cognitive screening, structured interviews, and physical function testing. We assigned participants an "index date" defined as the date of their most recent ACT visit in 2004-6 or, for those with no visit, a random date in that period. Benzodiazepine use was defined as receiving more than two pills in the prior 12 months, based on computerized pharmacy data, and was classified as "new" use if ≥12 months had elapsed since any prior dispensing. Prescriptions were converted to the total standardized dose (TSD) to measure intensity of use, with heavy use defined as receiving at least 150 TSD in 12 months. Relative risk regression was used to assess the association between use of long half-life agents or heavy use and the presence of comorbid illnesses and cognitive or functional impairment (related to basic and instrumental activities of daily living [ADL, IADL]) at the index date.

Results:

Among 2163 participants, with median age 82, 11.7% (n=263) had used benzodiazepines in the past 12 months. 5.7% of the cohort

(n=123) were new users, 2.4% (n=52) received long-half life agents, and 2.6% (n=56) had heavy use. Use of long-half-life agents was more common in persons with cancer (RR 2.1, 95% CI 1.2-3.6) and ADL impairment (RR 1.9, 95% CI 1.1-3.5). Heavy use was more common in persons with hypertension (RR 2.1, 95% CI 1.1-3.8), COPD (RR 2.0, 95% CI 1.1-3.6), and history of stroke (RR 2.5, 95% CI 1.3-5.1).

Conclusion:

In this older cohort with a high level of comorbidity, benzodiazepine use was common. Few persons used long half-life medications or had heavy use, but users with these patterns had greater comorbidity and functional impairment than nonusers.

A77

Concept Mapping to Create a Research Agenda in Elder Self-Neglect.

T. D. Brown,[1] M. S. Lachs,[1] K. A. Pillemer,[2] C. M. Murtaugh,[3] M. McDonald,[3] E. Wethington,[2] C. Reid,[1] M. P. Pavlou.[1] *1. Weill Cornell Medical College, New York, NY; 2. Cornell University, Ithaca, NY; 3. Visiting Nurse Service of New York, New York, NY.*

Supported By: The Brookdale Foundation, The RAND/John A. Hartford Foundation's Building Interdisciplinary Geriatric Health Care Research Centers Initiative, Medical Student Training in Aging Research of The American Federation for Aging Research

Purpose: To create a clinically and community relevant research agenda in self-neglect using community-based participatory research. **Methods:** Concept mapping technology was employed. Online brainstorming was conducted by a community of professionals, members of the NCEA's National Elderabuse Listserve, creating a list of relevant problems, issues, behaviors and characteristics relating to self-neglect. These ideas underwent content analysis, and were sorted and rated by participants based on themes. All responses were ranked in regards to their importance and feasibility for implementing solutions with respect to self-neglect. Analysis was conducted using multi-dimensional scaling and hierarchical cluster analyses to integrate each participant's sort and develop a series of 'concept maps.' **Results:** Two hundred seventy-three ideas were submitted by 82 professionals from 30 states. These ideas were reduced to 100 final statements for sorting and rating. Interpretation of the identified themes will be conducted by a steering committee composed of a core group of community practitioners and researchers. **Conclusions:** Concept mapping is a consensus-building technique that integrates input from diverse professionals to create a research agenda in self-neglect, as well as foster networks for implementing future interdisciplinary research activities. The maps help to understand differences in approach among the different stakeholder groups. Identification of themes that are ranked high in importance and feasibility provide focus for future research, action-planning, policy change and possibly future interventions.

A78

Disparities in End-of-Life Care: Experiences in an Urban Geriatric Home Palliative Care Program.

A. P. Holley, R. Gorawara-Bhat, W. Dale, J. Hemmerich, D. Cox-Hayley. *Section of Geriatrics & Palliative Medicine, University of Chicago, Chicago, IL.*

Supported By: Aetna Foundation

BACKGROUND: Home palliative care provides an avenue to reach groups previously shown to be at higher risk for underutilizing hospice services, including African Americans and patients dying with dementia. Both groups are prevalent in our unique home care program, Palliative Access Through Care at Home (PATCH). Little is known about the needs of these patients or their caregivers. Our study elicits opinions from caregivers of patients who have died regarding their experiences with PATCH. METHODS: Patients enrolled during the first year of PATCH were identified via chart review. Caregivers of patients who had died were contacted to participate in a brief telephone interview (n=29). Those who completed the telephone interview (n=22) were asked about their willingness to participate in an in-person interview about their caring experience. Thirteen in-person interviews were conducted, audiotaped, and transcribed for qualitative analysis using Grounded Theory. RESULTS: Average caregiver and patient ages were 62 and 88 respectively. 82% of patients were African American. 55% had a primary diagnosis of dementia. Caregivers of dementia patients provided care for significantly longer (80 months vs. 17 months, p-value<0.05) and were less likely to work outside the home (33% vs. 66%, p-value=0.18) compared to caregivers of patients without dementia. Emerging themes from qualitative analysis included: a) desire to control the location of care, b) the need for easy access to a physician or other expert in geriatric care, and c) the difficulties with transitions of care, both in and out of the hospital, and in transitioning to end-of-life care. There were no significant differences in reports between caregivers for patients with dementia and those without. CONCLUSIONS: 1) PATCH delivered end-of-life care to groups traditionally at-risk for underutilizing hospice services. 2) There were some significant differences in care required between dementia and non-dementia patients. 3) Despite these differences, issues raised between caregivers of patients with and without dementia were similar. It appears that differences in end-of-life care between the two groups are based more on providers' failure to recognize the appropriate timing for initiation of end-of-life care for patients with dementia than on differing needs of the two groups.

A79

Prevalence of pharmacogenetic risk alleles important in geriatric care in a consanguineous Middle Eastern population.

E. G. Brown,[1] K. Becetti,[2] S. Zahirovic,[2] L. Chouchane,[2] H. Sattar,[3] A. Al-Mohammed,[3] M. Hamza,[3] A. Al-Mulla,[3] M. Al-Merri,[3] A. A. Al-Hashemi,[3] M. A. Al-Nesf,[3] J. Geraghty,[2] R. Mathew,[2] A. Maayah,[2] A. Gohar,[2] N. R. Hackett,[1] T. P. O'Connor,[1] R. G. Crystal.[1] *1. Weill Cornell Medical College, New York, NY; 2. Weill Cornell Medical College - Qatar, Doha, Qatar; 3. Hamad Medical Corporation, Doha, Qatar.*

Supported By: The Henry Adelman Fund for Medical Student Education

Purpose: Personalized drug therapy must account for the differences in metabolism of drugs among individuals, differences that are mediated by genetic variation. These efforts are especially important in the geriatric population, where adverse effects are severe and complicated by polypharmacy. In the literature and established databases, the frequency of these alleles are largely unreported for Middle Eastern populations, whose consanguinity can make them unique. To address this disparity, we assessed the prevalence of risk alleles relevant to geriatric care in the Qatari population. The treatments investigated included 1) morphine (pain management); 2) warfarin (anti-coagulation therapy); 3) thiopurines (immunosupressants); and 4) anthracyclines (chemotherapy). **Methods:** DNA from blood samples of n=159 Qataris was assessed by TaqMan allelic discrimination assays for the COMT Val/Met (higher morphine dosage requirement), VKORC1*2 (risk of bleeding with warfarin), TPMT*3C (myelosuppression from thiopurines), and NQO1*2 (worse prognosis in anthracycline treatment) alleles. Allele frequencies were compared to HapMap population data when available. **Results:** The prevalence of the target risk alleles in the Qatari population was distinct from other populations. The allele frequencies were as follows: COMT Val/Met (Qatari=0.56, European=0.52, African=0.29, Asian=0.25), VKORC1*2 (Q=0.44, E=0.46, A=0.13, As=0.96), TPMT*3C (Q=0.009, E=0.025, A=0.05, As=0.017), NQO1*2 (Q=0.24, E=0.22, A=0.19, As=0.46). **Conclusions:** In the Qatari population, alleles that lead to a variable response to drug therapy in the elderly are present in a collective distribution not found within any other one HapMap population.

Ignorance of risk allele prevalence for Middle Eastern populations jeopardizes the care of elderly patients susceptible to the adverse effects of variant drug metabolism, especially as this information becomes more relevant in determining dosage. Knowledge of these frequencies can help design efficient care for these specific patient populations.

A80

Assessing Medication use in the Setting of Elder Self-Neglect: A pilot cross sectional study.

J. G. Garcia-Gallegos,[1] J. Burnett,[2,3] C. B. Dyer.[2,3] *1. Department of Geriatric Medicine, University of Texas Medical Branch at Galveston, Galveston, TX; 2. Department of Geriatric Medicine, University of Texas Medical School at Houston, Houston, TX; 3. Consortium for Research in Elder Self-Neglect, Houston, TX.*

Supported By: This study is part of the Consortium for Research in Elder Self-Neglect of Texas (C. B. Dyer, Principal investigator) and was funded by a National Institute of Health Grant# P20-RR020636

Background: Elder self-neglect is the most commonly reported form of elder mistreatment. Elder who neglect themselves are often frail and have multiple, untreated medical illnesses. Assessing medication use in self-neglecters may provide some clues about health resources utilization and medical management of common geriatric conditions.

The purpose of this study was to assess medication use among community-living elders reported to APS for self-neglect.

Methods: Ninety-eight community-living elders, 65 years of age and older, with APS substantiated self-neglect and 97 controls matched on (age, ethnicity, gender and socio-economic status) participated in this study. An in-home medication review was conducted. Student's t tests and Pearson Chi-square tests were performed to evaluate group means and distributional differences in medication use.

Results: Self-neglecters were taking significantly fewer medications compared to controls ($t=2.85$, $df = 193$, $p<.001$). Self-neglecters were also significantly less likely to be using psychotropic medications ($X2 = 11.54$, $df = 1$, $p<.01$), gastrointestinal medications ($X2 = 8.0$, $df =1$, $p<.01$), and pain medications ($X2 = 17.38$, $df =1$, $p<.001$). There were no significant differences between narcotic and neurologic medication use between the groups.

Conclusions:

The results of this analysis show that self-neglecters were taking fewer medications compared to controls. Self-neglecters were also taking less psychotropic meds, gastrointestinal and pain medications. Fewer medications in the self-neglect group may be explained by differences in healthcare utilization or accessibility to medications. The same may be true for the differences in medication types, but may also be associated with differences in medical diagnoses. Further studies are needed to delineate the reasons for these differences as well as to determine if these findings are related to the higher levels of depression and pain among self-neglecters reported in the literature.

A81

Willingness of Organ Donations in African Americans.

S. Nakagawa,[1] K. Ravakhah,[1] Y. Cho,[2] J. Yoo,[3] Y. Chang.[1] *1. Medicine, Huron Hospital, a Cleveland Clinic hospital, Cleveland, OH; 2. School of Public Health, University of Minnesota, Minneapolis, MN; 3. Geriatric Medicine, University of Michigan, Ann Arbor, MI.*

Introduction: Compared with whites, it had been reported that African Americans were less willing to donate their organs. The pervasive mistrust of health system was explained as one of this phenomenon. The present study was aimed at identifying reasons of less enthusiastic about organ donation in African Americans.

Methods: Cross-sectional data were gathered from 145 African Americans. Participants did not have history of HIV, HBV, HCV, end-stage chronic disease(kidney, liver, lung and heart) and dementia. Data were gathered by face-to-face interviews. They were questioned about their willingness to donate organs if they were in brain death. They were asked to choose one out of three reasons behind their decisions if they did not want to donate organs: lack of information, preference of being buried intact and mistrust of health system. Religious beliefs were defined as belonging to faith traditions. Logistic regression analysis was used to investigate associations between willingness of organ donation and its attributable factors. The SPSS version 16(SPSS Inc., Chicago, IL) was used.

Results:26.2% were willing to donate their organs. Participants had following characteristics: an average age ±standard deviation(SD)(52.0±12.7), lives alone(12.4%), an average of number of co-morbidities(total 8 items)±SD (2.0±1.2), an average of healthcare utilizations at clinic or inpatient over the past 12 months ±SD(3.41±2.46), lack of insurance(40.6%), presence of advance directive(living will or/and designation of durable power of attorney; 15.9%), and religious beliefs(79.4%). African Americans with old age(p=0.008, OR=1.07, CI 1.02-1.14), high number of healthcare utilizations p=0.027, OR=1.33, CI 1.03-1.73) and religious beliefs(p=0.047, OR=3.40, CI 1.01-11.36) were more unfavorable to donate their organs. Preference of being buried intact(57.0%) was the most common reason that affected their decisions and was followed by lack of information about organ donation(29.9%) and mistrust of health system(13.1%).

Conclusion: African Americans who were old and utilized healthcare services frequently were reluctant to donating their organs in case of brain death. Recognition of their preference of being buried intact might help to understand why African Americans with religious beliefs were less enthusiastic about organ donation.

A82

High HDL in older Bangladeshi men in the USA.

N. J. Rianon,[1] R. S. Rasu.[2] *1. Geriatrics, Baylor College of Medicine, Houston, TX; 2. Pharmacy, UMKC, KC, MO.*

Supported By: TAFP

Purpose: High-density lipoprotein (HDL), an indicator of health in the elderly, is positively associated with fish consumption, an important part of native Bangladeshi diet. Higher prevalence of dyslipidemia with low (≤40mg/dl) HDL was reported in Bangladeshi immigrant men compared to other immigrants in the UK. Bangladeshis in the UK also showed a high serum omega-3 fatty acid, presumably due to high fish consumption. The UK study findings invite the question if Bangladeshi men are negatively impacting their lipid related health while adapting to western diet. Dyslipidemia, a common health problem in the USA, is yet to be explored in the Bangladeshi immigrants. We investigated indicators of HDL in the Bangladeshi immigrant men in the USA.

Method: A total of 91 community dwelling Bangladeshi men aged 35 to 71 (mean 46±8) years residing in Houston, TX, USA participated in this cross-sectional study. Serum collection for lipid profile with fasting glucose and blood pressure measurement were performed by a certified technician trained on study protocol. A multivariate logistic regression model was developed with HDL as the dependent and risk factors, e.g., age, height, weight, education, smoking, physical activity, diet, hypertension and diabetes as independent variables. The model was adjusted for low-density lipoprotein (LDL), triglyceride and fasting glucose.

Results: More than half of the participants had risk level serum triglyceride and LDL. Only 35% of the total and 23% of the older (≥ 45 years) men had low HDL ($p<0.05$). Men with older (≥ 45 years) age (OR, 95% CI = 0.25, 0.08 to 0.82) and higher fish (≥ 3 times/week) consumption (0.15, 0.03 to 0.68) were less likely ($p<0.05$) to have low HDL compared to those with younger age and less fish consumption, in order. When stratified by fish consumption, association between older age and HDL remained the same for the group with higher fish

consumption (N = 68) and no association was found for those with less fish consumption.

Conclusion: Our findings documented older age as an independent indicator of high HDL (> 40 mg/dl) in the Bangladeshi men in TX, USA. Immigrants bring along their native culture to their new country. Our results may have been an effect of cultural influence of high fish consumption in the older generation of immigrants. No information on the length of stay limits us from analyzing the influence of acculturation process in the USA on the participants' health outcome.

A83

The Development of a Risk Profile to Identify At-Risk Elderly Persons for Nursing Home Placement in a Hospital-based Setting.

E. R. Smith,[1] A. Stevens.[1,2] *1. Scott & White Healthcare, Temple, TX; 2. College of Medicine, Texas A&M Health Science Center, Temple, TX.*

Nursing home (NH) placement among older adults is influenced by numerous factors, including prognostic disease indicators, functional and cognitive status, and one's social environment and is associated with multiple problematic outcomes. Interventions to prevent or delay NH placement have mainly been researched in the community. However, prediction of these factors during hospitalization could provide an ideal opportunity to shape targeted interventions among high-risk patients. The purposes of this investigation were to compare characteristics of patients discharged to the community and those discharged to the NH, and to identify predictors of NH placement in a hospital-based cohort.Information about the study population (n=6,009 discharged persons) was obtained from the Scott and White Memorial Hospital's Electronic Medical Records and billing records. Descriptive characteristics were compared between community discharges and NH discharges using the $\chi 2$ statistic for categorical data and t-test for continuous variables. Multiple logistic regression models were performed to identify the most salient predictors of NH placement. Traditional risk factors, such as having less caregiving support, utilizing more hospital services, being more severely ill, and not understanding their illness, characterized person discharged to the NH compared. Significant predictors of being discharged to the NH included not understanding one's illness, being female, living alone, being more severely ill, having longer hospitalization stays and having a fall risk. Persons who needed assistance with eating and had more than 2 prior hospital visits were more likely to be discharged to the NH as compared with person who did not need assistance with eating and had less than 2 prior hospitalizations. Additionally, persons who need assistance with dressing and had an family member caregiver were more likely to be NH discharges compared with persons who did not need assistance and did not have a caregiver. This association was not seen among those with a spousal caregiver. In conclusion, these results could help develop hospital-based interventions to postpone or prevent NH placement among high-risk patients.

A84

Predictors of Engagement in Healthcare and Self-Rated Health by Older Patients' with Multiple Chronic Illnesses.

A. Hochhalter, L. C. Sklar, J. Rush, J. Song, A. B. Stevens. *Scott & White Healthcare and Texas A&M HSC, Temple, TX.*

Supported By: Scott & White Research Foundation

Co-occurring chronic illnesses create healthcare challenges for older adults. Active participation in healthcare is one way to address these challenges. However, older adults are less likely than younger adults to actively participate in healthcare appointments (Greene et al, 1989), and many prefer a passive role during decision-making (Elkin et al, 2007). Baseline data from an ongoing randomized clinical trial of a patient engagement intervention were examined to identify predictors of perceived health and patient engagement. The 79 participants were 65 years or older (M=74, SD=6) and had been treated for two or more types of chronic illness. Participants responded to telephone interviews measuring self-rated health, health-related quality of life, patient activation, self-efficacy for self-management and communication with physicians. Stepwise regressions were used to model predictors of a) self-rated health, 2) number of physical and mental unhealthy days in the past month, and 3) patient activation measure scores (Hibbard et al. 2004) scores. P-values of less than 0.05 were considered statistically significant. Self-efficacy for self-management was a significant predictor in all three models. Several variables contributed to the model of self-rated health. Only two variables were significant predictors in the models of total unhealthy days and patient activation. Data suggest that the degree to which older adults believe they can manage the everyday challenges posed by chronic illnesses is an important contributor to how they perceive their health and whether they are engaged in their healthcare. Self-efficacy may therefore be an appropriate target of interventions to encourage active engagement in healthcare.

A85

Health Care Workers Who Serve as Informal Caregivers to Older Adults: Perceived Needs.

C. M. Holder,[1] S. Hazelett,[1] G. C. Smith,[2] A. B. Jencius,[1] E. Fleming,[1] E. Fink,[1] K. Allen.[1] *1. Summa Health System, Akron, OH; 2. Kent State University, Kent, OH.*

Background: Informal caregivers provide 80% of care to older adults in the US. Many of these caregivers are also employed outside of the home. With the aging population, caregiver strain is going to become more prevalent requiring innovative solutions to minimize the negative effects of care giving on the workforce. Although abundant research exists on the needs of informal caregivers of older adults, studies examining the circumstances of healthcare workers who also serve as family caregivers are lacking.

Purpose: To investigate the need for supportive services among healthcare providers who are also informal caregivers.

Methods: All employees of a large healthcare system in northeastern Ohio who are current or former caregivers of a relative age >65 were invited to participate in an online investigator-generated survey of their needs as caregivers.

Results: A total of 389 employees completed the survey (181 current and 128 former caregivers). Of these, 76% were professional and 17% were clerical, 93% female, 67% age 41-60, 92% Caucasian, 61% married, and 63% were daughters of the care recipient. About half (53%) provided the majority of care. Of the current caregivers, the most common caregiving tasks reported included companionship (85%), transportation (81%), interacting with outside agencies (71%), shopping (71%), housework (60%), meal preparation (52%), and medications (52%). When asked what informational programs would better prepare them as caregivers, the most frequently requested information was on Medicare part D (52%), advance directives (48%), community services (44%) and managing caregivers' moods (48%). When asked what services they would like their employer to offer, the most common responses were access to flex time (53%), more affordable services (49%), stress management (46%), access to legal advice (43%) and ability to work from home (43%).

Conclusion: We conclude that elder care burden is a growing problem for the healthcare industry, especially in the face of persistent nursing shortages. An understanding of the challenges faced by this population is the first step in the development of effective interventions.

A86

Weathering the Storm: Components of Nurse Home Visiting That Keep Older Adults with Disabilities from Worsening.

D. V. Liebel,[1] B. A. Powers,[1] N. Watson,[1] B. Friedman.[2] *1. Nursing, University of Rochester, Rochester, NY; 2. Community and Preventive Medicine, University of Rochester, Rochester, NY.*

Supported By: T-32 Grant in Geriatrics and Gerontology funded by NIH

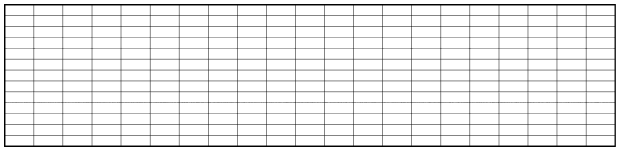
Purpose The purpose of this study was to better understand and illuminate results of a nurse home visit intervention in a larger quan-

titative study in terms of facilitators and barriers associated with disability maintenance/ improvement.

Design/Methods. Purposeful sampling of cases representative of the disability construct led to selection of 10 cases each of disability maintenance/improvement and 10 cases of disability worsening. Data from nurses' progress notes and case studies were analyzed using qualitative descriptive analysis.

Results. Three primary themes captured aspects of home visiting intervention associated with change in disability status: (1) building and maintaining patient-centered working relationships, (2) negotiating delivery of intervention components, and (3) establishing balance between patients' acute and chronic care needs. Sub-themes illustrate nurse, patient, and system factors associated with successful intervention delivery and disability maintenance/improvement (e.g., nurse caring, facilitating interdisciplinary communication) as well as barriers associated with disability worsening (e.g., presence of dementia, depression, and acute illnesses). The overarching metaphor of an Approaching Snowstorm was used to facilitate data analysis by providing a core concept to explain the impact of disability and its relationship to the lives of older adults living with chronic illness and disease

Implications. This study provides health professionals with new insights about challenges and strategies used by patients and nurses to prevent disability worsening. Opportunities exist to integrate these insights into designs of new best-practice models of nurse visiting.



A87

Appropriate Warfarin Dosing to Meet Patient Safety Goals: A Performance Improvement Initiative to Monitor Prescribing in Older Adults.

T. S. Dharmarajan,[2,3] M. Baig,[2] A. Gupta,[2] J. Idury,[2] P. Sivaraju,[2] E. P. Norkus.[1,2] *1. Medical Research, Montefiore Medical Center North Division, Bronx, NY; 2. Medicine, Montefiore Medical Center North Division, Bronx, NY; 3. Division of Geriatric Medicine, Montefiore Medical Center North Division, Bronx, NY.*

Supported By: This study was funded internally; external funding was not obtained for any part of this study.

Introduction: Warfarin is used to prevent thrombo-embolism but adverse drug events (ADEs) are common; the National Safety Goals (3E) 2008, recommend institutions develop processes to monitor its safe use. Guidelines exist, but adverse events (bleeding) commonly occur. This PI initiative, in an academic hospital, aimed to ensure the safe use of warfarin in hospitalized adults through education.

Methods: Data collected retrospectively (R) (Sept-Dec. '07) & prospectively (P) (Jan-Nov. '08) on prior warfarin use, dose at admission & during hospitalization, hematocrit, INR, hepatic, renal function, and adverse events related to warfarin dosing/drug-interaction.

Results: 218 patients (81 R & 137 P) on oral warfarin examined. Mean age: 69 ± 17(sd) yrs; 46% males, 37% from nursing homes. Age (P=.5325), sex (P=.473) and residence (P=.821) were similar in both periods. Initial INR and warfarin dosing are shown in the Table. With an initial INR <3.0, warfarin doses were similar in the R & P periods (all P>.05), however, a trend to provide inappropriate warfarin dosing for supra-therapeutic INRs (>3.0) was observed more often in R vs. P periods (P=.0336). Lower average maintenance doses of warfarin also were provided in P vs. R (P=.0172).

Conclusions:

1) Most hospitalized patients (in R & P) presented with INRs in the sub- or supra-therapeutic ranges (<2 & >3, respectively), requiring warfarin dose adjustments.

2) Significantly lower average maintenance doses of warfarin were administered in the P period, leading to fewer patients in the supra-therapeutic range and lessening the likelihood of warfarin over-treatment and complications.

3) The process was supported by emphasizing abnormal INRs verbally at hands-off sessions to maintain closer monitoring in P.

4) Inappropriate dosing of warfarin, including a lack of awareness is common in practice, but appears correctable with education, as demonstrated here.

Retrospective				Prospective			
INR range	#	INR levels	Warfarin (mg)	INR range	#	INR levels	Warfarin (mg)
<2.0	37	1.4 +/- 0.3	3.5 /- 2.5	<2.0	84	1.3 +/- 0.3	3.1 +/- 2.7
2.0 - 3.0	9	2.3 +/- 0.3	2.1 +/- 1.2	2.0 - 3.0	20	2.5 +/- 0.3	4.8 +/- 2.1
>3.0	32	4.6 +/- 1.7	4.8 +/- 2.8	>3.0	24	4.3 +/- 1.1	3.1 +/- 2.3
unknown	3	-	3.8 /- 2.5	unknown	9	-	3.5 +/- 2.3

A88

Health and social care for the demented elderly: comparison between Israel, Italy and the Netherlands.

J. Gindin,[1] Y. Offer,[1] S. Epstein,[1] S. Maggi.[2] *1. Kaplan Medical Center, Rehovot, Israel; 2. Institute of Neuroscience, Padova, Italy.*

Supported By: EU-FP6

Policy makers, health economists, and health care professionals grapple with providing care to the demented old persons in the community and institutions. It also involves solving family and ethical issues, along with everyday care.

Objectives: To describe and compare health and social services for demented elderly in Israel, Italy and the Netherlands.

Methodology: This study is part of the CLESA (Comparison of Longitudinal European Study on Aging) project. The group of experts in the clinical fields, health administration, and epidemiology of aging, created a qualitative tool – "The Four Cases Questionnaire". It described 4 different case studies on care for the elderly. We focused on the case of the demented old man, with Alzheimer's Disease (AD), from early signs to final deterioration.. Each country created a consensus committee, with clinical and administrative members involved in service and administration, on regional and national level. The answers reflect the practice and knowledge of the members. The coordinating center in Israel cleared and processed the answers into qualitative comparable tables.

Results: In general, all 3 countries provide wide range of care, with varying levels of state responsibility and financing. There is case mix between medical and social care, with more to community care in the early and mid stages, and institutional care in the late and final stages. In Israel and the Netherlands services are highly fragmented among medical and social agencies. The Netherlands has more available and accessible services, with generous use of home care (home help and health home care). In Italy social services for AD patients are poor and the burden is on the family throughout all stages.

Conclusions: Socio-cultural factors, the structure of families and the preferences of elderly people and their caregivers significantly influence the demand for community and long-term care services. The policy responses of health care and social services agencies vary greatly by structure and organization of the system, availability of resources, mechanism of funding care (by government and private sector), and by the degree of collaboration between medical and social services.

With the growing number of dependent elders, each country must agree on how best to support demented elderly and how to organize a coherent long-term care system.

A89

The DEXA scan screening in African American Elderly Women.

Y. Chang,[1] K. Ravakhah,[1] Y. Cho,[2] J. Yoo,[3] S. Nakagawa.[1] *1. Medicine, Huron Hospital, a Cleveland Clinic hospital, Cleveland, OH; 2. School of Public Health, University of Minnesota, Minneapolis, MN; 3. Geriatric Medicine, University of Michigan, Ann Arbor, MI.*

Introduction: Women age over 65 can receive osteoporosis screening by the DEXA scan without copayment. African American postmenopausal women have a lower prevalence of the osteoporosis (4%) compared to whites (8%). However, African American postmenopausal women had a higher mortality after osteoporotic fractures. Lack of recognition of risk factors and deficiency in proper management of osteoporosis might have contributed to this phenomenon. The purpose of present study was to measure screening rate of DEXA scan and to identify facilitators and barriers of DEXA scan in African American elderly women.

Design: A total of 402 African American women, age 65 or older were enrolled in a community health center. Charlson's co-morbidity index, medications that can affect their bone adversely (thyroid supplements, phenytoin or steroid for 3 months or more), evidence of osteoporosis and insurance status. Physicians' specialties were categorized as primary care and specialties regarding bone health. Physicians were asked to rank the following medical categories according to their priorities (colon cancer, breast cancer, hyperlipidemia, pap smear, domestic violence, alcohol/substance abuse and osteoporosis).

Results: The osteoporosis screening rate was 15.9%. The prevalence of osteoporosis was 29.6%. Participants had following characteristics: an average of age ± standard deviation(SD) was 74.8±7.04, an average of Charlson co-morbidity index ± SD was 5.08 ± 1.49, offending medications were 22.3%, evidence of osteoporosis was 29.6% and private insurance rate was 50.0%. Logistic regression analysis revealed the associations between the DEXA screening and its facilitators/barriers. Old age(p=0.01, OR=0.91, CI 0.86-0.96) was a barrier, but, evidence of osteoporosis (p=0.001, OR=6.33, CI 3.25-12.34), private insurance (p=0.02, OR=2.09, CI 1.07-5.23), high ranking of osteoporosis in physicians' screening priorities (p=0.001, OR=2.87, CI 1.57-5.23) were facilitators of the DEXA scan screening.

Conclusion: The absolute rate of DEXA scan (15.9%) was low and prevalence of osteoporosis (29.6%) was higher than that of previous studies. Along with patients' demographic and socioeconomic status, physicians' priority of osteoporosis among health maintenance items have contributed to DEXA scan rate in African American elderly women.

A90

Physician Attributes that Influence the Decision to Refer a Patient with Fecal Incontinence to a Nursing Home.

K. A. Nyrop,[1] M. Grover,[2] J. Busby-Whitehead,[1] O. S. Palsson,[1] S. Heymen,[1] M. H. Palmer,[1] P. S. Goode,[3] M. Turner,[1] W. E. Whitehead.[1] *1. University of North Carolina, Chapel Hill, NC; 2. Michigan State University, East Lansing, MI; 3. University of Alabama, Birmingham, AL.*

Supported By: Supported by the UNC Chapel Hill Investments for the Future Initiative and R24 DK067674

Aims: This study aimed to assess physician beliefs and characteristics that influence the disposition to refer an older adult patient with fecal incontinence (FI) to a nursing home or skilled care facility (NH/SCF). **Methods:** Members of the American Geriatrics Society were invited to complete a survey in which they were presented with the clinical scenario of a 70-year-old Caucasian female, hospitalized in an acute care hospital for community acquired pneumonia, who has a history of FI. Respondents were asked whether they would refer this patient to a NH/SCF (5-point scale: "definitely not" to "definitely yes"). The survey also asked about prior experience and practice with managing FI, and perspectives on NH/SCF care for FI. **Results:** 606 physicians (31.4%) completed the survey, of which 10.1% would probably or definitely refer this patient with FI to a NH/SCF. 31.2% reported that nursing homes do not take good care of patients' FI problems; 32.4% believe NH/SCFs lack proper expertise to care for patients with FI; and 25.5% believe NH/SCFs have patient care conditions that exacerbate FI. Significantly more male (40.2%) than female (27.3%) respondents believe nursing homes lack proper expertise to care for patients with FI. Respondents who believe that NH/SCF care exacerbates a patient's FI are significantly less likely to refer to a NH/SCF. 89.1% believe FI has a significant negative effect on patient quality of life and 59.3% believe FI can be managed conservatively. Those who believe FI can be managed conservatively are less likely to refer to a NH/SCF. 54.1% report that they screen for FI most of the time. 21% believe their patients are comfortable talking about their FI and 73.8% document FI in their patients' charts. Those who often document FI are more likely to refer to a NH/SCF. 66.5% investigate the cause of FI in their patients. 74.7% expressed the need for more education about FI. Respondents who are younger (25-45 years) and have fewer years of practice (0-5 years) are significantly more likely to refer to a NH/SCF. **Conclusions:** Physicians who believe FI can be managed conservatively and have more years of practice are less likely to refer to a NH/SCF when an older adult patient has FI.

A91

Social Circumstances Influence the Decision to Refer an Elderly Patient with Fecal Incontinence to a Nursing Home.

J. Busby-Whitehead,[1] M. Grover,[2] M. H. Palmer,[1] S. Heymen,[1] O. S. Palsson,[1] P. S. Goode,[3] M. Turner,[1] W. E. Whitehead.[1] *1. University of North Carolina, Chapel Hill, NC; 2. University of Michigan, East Lansing, MI; 3. University of Alabama, Birmingham, AL.*

Supported By: Supported by R24 DK067674 and the UNC Chapel Hill Investments for the Future Initiative

Aims: 1) Determine the impact of fecal incontinence (FI) on the decision to refer a patient to a nursing home or skilled care facility (NH), and 2) assess the impact of the patient's social support network on the decision to refer. **Methods:** 2000 members of the American Geriatrics Society were invited to complete a survey by email, postal questionnaire, or questionnaire distributed at the annual meeting. The survey presented a clinical scenario of a 70 year old woman with a two year history of FI who was ready for discharge from an acute care hospital and asked respondents to rate the likelihood of referral to a NH. Subsequent questions modified the clinical situation to address the effects of patient social circumstances. Significance of differences between scenarios in the relative risk (RR) of referring to a NH was determined by Wilcoxon tests. Respondents received $10 for completing the survey. **Results:** 685 providers completed the survey (31% response rate). There was broad representation of providers across age groups, gender, years in practice, private vs. academic, and urban vs. rural and suburban practice settings. Only 15% were trainees. In the base clinical scenario (FI of unspecified severity for the past 2 years), the likelihood of referring to NH was 10.4%, and increased to 35.2% if FI occurred weekly and consisted occasionally of large volumes. If the patient did not have a family member living nearby, the disposition to refer increased from 10.4% to 54.0% (RR=5.19), and if the caregiver was unwilling to help, the disposition to refer was 80.2% (RR=7.71). Patients with a prior NH admission were more likely to be referred (28.3%, RR=2.72), and patients with inadequate insurance coverage were more likely to be referred (26.3%, RR=2.53). All associations were significant at p<0.001. **Conclusions:** (1) FI increases the likelihood of referral to a NH in proportion to its severity, and (2) availability of caregivers who are willing to assist in management reduce the risk of NH referral while inadequate health insurance and a previous NH stay increase the disposition to refer.

A92

A Taxonomy of Reasons for Not Prescribing Guideline-Recommended Medications: Results from Physician Focus Groups.

M. A. Steinman,[1,2] S. Patil,[1] P. Kamat,[1] S. Knight.[1,2] *1. San Francisco VA Medical Center, San Francisco, CA; 2. University of California - San Francisco, San Francisco, CA.*

Supported By: This research was supported by grant #IAF 06-080 from the VA Health Services Research & Development Service.

BACKGROUND: Clinicians have a variety of reasons for not prescribing guideline-recommended medications, yet research on physician non-adherence to guidelines is hindered by the absence of an accepted method to categorize these reasons. We used physician focus groups to develop a taxonomy of reasons for not prescribing guideline-recommended medications for patients with heart failure.

METHODS: We convened 7 focus groups with a total of 30 physicians covering a range of clinical specialties and levels of training. Using semi-structured probes and concept mapping techniques, we assessed physician reasons for non-prescribing of guideline-recommended drugs for heart failure, and evaluated how physicians categorized these reasons into conceptual groupings.

RESULTS: Across our focus groups, reasons for not prescribing guideline-recommended drugs fell into 4 broad categories: clinical contraindications (such as contraindicating comorbidities), patient factors (such as patient preferences), physician factors (such as skepticism of drug benefits), and systems factors (such as co-managing patients with physicians in different health systems). There was substantial overlap among these categories, and physicians placed a number of reasons for non-prescribing at the intersection of two or more categories. For example, reasons for non-prescribing related to drug safety fell at the intersection of several categories, reflecting the contribution of clinical contraindications, patient's ability to manage their drugs, physician risk tolerance, and access to care that allows for appropriate monitoring of adverse drug effects.

CONCLUSIONS: Physicians were able to identify and categorize reasons for not prescribing guideline-recommended drugs for heart failure. This taxonomy will assist research and quality improvement efforts to understand the reasons behind – and appropriateness of – non-adherence to clinical practice guidelines.

A93

Medication Management in the Context of Community-Based Participatory Research in Assisted Living.

S. Zimmerman,[1] J. Tilly,[2] L. Cohen,[1] K. Love.[3] *1. University of North Carolina, Chapel Hill, NC; 2. Alzheimer's Association, Washington, DC; 3. Center for Excellence in Assisted Living, Washington, DC.*

Supported By: Agency for Healthcare Research and Quality

Background/Purpose: Residential care/assisted living (RC/AL) communities have become a primary provider of care to older adults. Questions regarding quality have accompanied their growth, including questions related to medication management because there are concerns about errors and no agreed-upon workforce standards; also, it has implications for affordability and regulation. Such questions can be answered through collaboration, and the purpose of this project was to form a partnership between provider, policy, advocacy, and research organizations to (1) develop a nationally-recognized and sustainable model of community-based participatory research (CBPR) in RC/AL; and (2) promote health and well-being by examining medication management in RC/AL.

Methods: Members of the national Center for Excellence in Assisted Living and the Collaborative Studies of Long-Term Care met regularly over two years to develop a manual of operations for CBPR in RC/AL, and to study medication administration. Data were collected by observation, interview, and chart review in TN and SC.

Results: In total, 4403 medications were observed being given during 83 passes for 320 residents in 11 RC/AL communities. While 35% of all administrations involved an error, 71% of errors occurred when the drug was given outside a two-hour window. Ten percent of errors were of potential to cause harm, representing 3.4% of all medications given. A Medication Administration Practices questionnaire had good reliability (alpha = .94), evidenced better completion for professionally trained staff, and correlated with observed errors ($p<.01$).

Conclusions/Implications: In this study, medication administration conducted by a range of staff was not an overall problem; further, the two-hour window of administration (which rarely represents potential for harm but has evolved into practice) contributes significantly to what is considered an error. A self-administered instrument shows promise for training and competency evaluation, which may reduce medication errors. Ongoing partnership to refine, implement, evaluate, and promote this instrument is indicated.

A94

Innovative Models of Coordinating Care for Older Australians: Findings of a Packer Policy Fellow.

S. R. Counsell,[1,2] L. C. Gray.[2] *1. Indiana University School of Medicine, Indianapolis, IN; 2. The University of Queensland School of Medicine, Brisbane, QLD, Australia.*

Supported By: Supported by Consolidated Press Holdings Ltd, the Australian Government Department of Health and Ageing and The Commonwealth Fund. The views presented here are those of the author and not necessarily those of Fellowship supporters.

Purpose: To describe innovative Australian models of care for older adults integrating primary care, geriatrics, acute care, and/or community-based services.

Methods: The Packer Policy Fellowship is an Australian-American health policy fellowship that enables fellows to gain an in-depth understanding of the Australian health care system and policy process. As a Packer Policy Fellow from July – December 2008, Dr. Counsell was based at The University of Queensland with mentor, Dr. Gray. Australian models of care coordination were identified through literature review, site visits, and meetings with clinicians, researchers and policy makers.

Results: Three models are described below followed by a description of physician payment methods that support these models. The nationwide Aged Care Assessment Program serves to assess the needs of frail older people and facilitate access to needed services; and ensure that older people are not prematurely or inappropriately approved for nursing home care. As required by law, Aged Care Assessment Teams (ACATs) – involving geriatricians, nurses, social workers, and therapists – assess and approve referred patients for nursing home and community-based services. The Hospital Admission Risk Program, or HARP, is a hospital based and statewide program in Victoria that provides patient management to prevent ED and hospital use. Eligibility is targeted to those at high risk of hospitalization, and interventions represent a variety of disease and care management services by interdisciplinary teams including geriatrics. Team Care Coordination is a primary care based program in Queensland which aims to improve health and well being of older adults with chronic illnesses through a partnership between the general practitioner (GP) and a nurse service coordinator who jointly assess, care plan, and implement and monitor service delivery. Reimbursement under the Australian Medicare Benefits Schedule supports GPs for 75+ annual health assessment, care planning and review, and case conferencing; and geriatricians for comprehensive geriatric assessment and case conferencing.

Conclusion: Several innovative models of interdisciplinary care coordination for older adults have been widely disseminated in Australia. These models can help inform the US in the development of similar type services along with corresponding reimbursement strategies.

A95

Challenges Associated with Enrollment of Frail Elders in a Care Management Randomized Clinical Trial.

S. Sikora,[1] S. Hazelett,[1] D. Kropp,[3] D. Jarjoura,[2] K. Allen,[1] E. Pfister.[4] *1. HSREI, Summa Health System, Akron, OH; 2. The Ohio State University, Columbus, OH; 3. Northeastern Ohio Universities College of Medicine/Pharmacy, Rootstown, OH; 4. Akron General Medical Center, Akron, OH.*

Supported By: The Agency for Healthcare Research and Quality (grant #1 R01 HS014539-01A1) and Summa Hospitals Foundation

Objective: Describe reasons for ineligibility or refusal to participate in a randomized controlled trial (RCT) of a community-based interdisciplinary care management (CM) intervention for low income frail elderly (the AD-LIFE trial).

Background: Observational data from numerous CM programs indicate this is a cost effective way to deliver optimal chronic illness care to the elderly, but RCT evidence is lacking. Recruitment of elderly subjects into RCTs can be challenging. Interpretation of the results of RCTs must consider potential bias in patient recruitment.

Methods: Eligibility criteria for the AD-LIFE trial include enrollment in Medicare and Medicaid, age 65 or older, passing a mental status screen, having at least one of eight chronic conditions, having baseline functional impairment, living at home, and having no terminal diagnosis or dialysis. Patients who enrolled and refused were compared using Chi Square.

Results: Of the 1195 admitted patients screened for enrollment, 328 met eligibility criteria. The most frequent reason for ineligibility was residing in an extended care facility 571 (48%), dementia, cancer, dialysis, dependence in 3 or more ADL's, cirrhosis, transplant, no ADL impairment or chronic condition, living >25 miles away, and other reasons each accounting for <10% of ineligibility. Of the 328 eligible patients, 203 were enrolled. The remainder refused (102(29%)) or were undecided (23(7%)). Data were collected for the last 71 patient refusals and compared to patients who enrolled. No significant differences in refusals were found by gender, race, marital status, or living arrangement. Coronary artery disease was the only chronic condition for which a significantly greater proportion of patients refused (p=.01). Significantly more enrollees were also enrolled in PASSPORT (p<.001), Ohio's community-based long term care Medicaid waiver program.

Conclusions: Further study is needed to clarify the association between PASSPORT enrollment and willingness to enroll in a care management trial. Willingness to allow outside agencies into the home may explain the observed differences. Future studies should consider these findings in recruitment strategies to help ensure more robust enrollment in community-based care management trials.

A96

Student Loan Forgiveness for Geriatric Physicians: The South Carolina Experience.

V. Hirth,[1,2] P. Eleazer.[2] *1. Palmetto Health / USC, Columbia, SC; 2. Internal Medicine, University of South Carolina, Columbia, SC.*

Introduction: With the aging demographics and rapidly increasing number of older adults in the US there is a critical need for geriatric physicians to care for and train care providers in the health care of older adults. Leaders in geriatrics have been warning of the coming shortage of geriatricians for decades. Of additional concern today, is the lack of new geriatric physicians to replace those retiring or otherwise leaving geriatrics. Thus, at a time when 36,000 geriatricians are anticipated as being needed by 2030, the absolute number of Geriatricians has decreased from 9,256 in 1998 to 6,435 today. Problems of both recruitment and retention have been a major issue in geriatric medicine.

Methods: We describe the first three years experience with the South Carolina Loan Forgiveness program which was initially passed in 2005 and made the first awards in 2006.

Results: In the past three years 21 applications from eligible physicians have been received. Fifteen awards totaling $376,040 have been awarded to 14 geriatric physicians (one physician received two awards), of which three were geriatric psychiatrists, in direct to lender loan repayments. The age range of recipients was 33 to 49 years old with an average age of 39. Eight recipients were women and 6 were men and all but two awardees were Caucasian. All recipients are still practicing geriatrics.

Conclusion: After three years the SC loan forgiveness program has made 15 awards to recruit and retain geriatric physicians in South Carolina. Annual feedback from awardees indicates that they are satisfied with their practices, that they valued the loan forgiveness program and that export of this program to other states/settings would be valuable.

Location of training

	Fellowship		Residency		Medical School	
State	SC	Other	SC	Other	SC	Other
Awards	7	8	8	7	9	5

A97

A structured teamwork among the medical staff focused on episodes of INR>5 improves safety of vitamin K antagonist therapy in a geriatric hospital ward: an intervention study.

C. Bussy, P. Ghiassi, S. Chauvelier, B. Mbwakongo, C. Oasi, S. Pariel, M. Sohane, J. Belmin. *Hopital Charles Foix, Ivry sur Seine, France.*

Background: Vitamin K antagonists (VKA) are widely used in old patients with atrial fibrillation or venous thromboembolism. Safety is a major concern, especially in old patients. International normalized ratio (INR) > 5 is associated with an increased risk of bleeding and is considered as a near miss error.

Aim: To reduce the incidence of episodes of INR>5 which occurred during the hospital stay of patients of a geriatric hospital ward exposed to VKA.

Design: Intervention study, non randomized.

Method: The study was done in 5 geriatric wards comprising acute, intermediate and long-term care beds of a French hospital. The intervention was conducted in one ward of the hospital. A structured teamwork among the medical staff of the geriatric ward was implemented from July to December, 2005. Twice monthly, the medical staff examined during a short meeting the cases of all the patients with INR>5 which occurred during the preceding weeks. The group discussed cases using a tool designed to identify prescribing errors in dose adjustment and/or INR monitoring. The approach was proactive in order to learn from errors and not punitive. The number of patients exposed to VKA and the number of episodes of INR>5 were recorded during a 12-month period before the intervention (2004-2005) and during the year following it in the intervention ward and in control wards (2006).

Results: In control wards, 60 episodes of INR>5 were recorded in the 267 patients (22.5%) receiving VKA in 2004-2005 and 56 episodes among the 263 (22.1%) in 2006. In the intervention ward, 22 episodes were recorded in the 72 patients (30.6%) in 2004-2005, and 16 episodes of INR>5 were recorded among the 92 patients (17.4%), corresponding to a significant decrease (-43.1%) as compared to control wards (–1.8%, p<10-4).

Conclusion: A structured teamwork of cases of INR>5 lessen the risk of VKA overdose and might improve safety of anticoagulation. Learning from errors seems an efficient way to improve quality of care.

A98

Peer-led Gait and Balance Classes and Social Rehabilitation.

L. Robertson,[2] B. Hale,[2] D. L. Waters,[1] L. Hale.[1] *1. University of Otago, Dunedin, New Zealand; 2. Otago Polytechnic, Dunedin, New Zealand.*

Supported By: Accident Compensation Corporation New Zealand

Peer-led classes for older adults are a newer form of service delivery for exercise programs. In Dunedin, New Zealand peer-led classes have been running successfully for years, however the determinants for class sustainability are largely unknown. This investigation evaluated the factors that contribute to the success of the peer-led strength and balance programs from the perspective of those who have participated in them.

There are 25 peer-led classes with approximately 300 participants over the age of 65 year in Dunedin. The peer-led classes were formed following a formally administered once weekly, 10 week strength and balance exercise class. Potential peer-leaders were asked to continue the classes and received training from a physiotherapist in a one-day workshop. Training workshops continue to be held annually for the peer-leaders. A series of focus groups were conducted with 64 participants from six of the peer-led exercise groups. Open-ended questions included topics relating to knowing about the group and reasons for joining, perceptions of the value of the exercises, and of the peer-leadership style of delivery. Themes identified were perceived benefits related to physical aspects (such as strength and balance), functional abilities (such as gardening, managing stairs, reaching), increased awareness of posture and movement, social opportunities, greater sense of wellbeing and self-confidence, and group processes (such as motivation). In conclusion, there were significant benefits from participating in peer-led groups which ranged from being more confident about living independently in terms of functional abilities and self-reliance, to the importance attached to the social processes and support. The peer-led method of delivering a strength and balance exercise program has much to contribute to the function and quality of life of those who participate and appears a viable and cost effective means in which to deliver a sustainable program in the community.

A99

Predicting adverse outcomes in a day hospital setting: the utility of measuring frailty.

F. Coto-Yglesias,[1] M. Cartín-Brenes,[3] E. G. Tangalos.[2] *1. Geriatrics and Gerontology Department, Hospital Nacional de Geriatría y Gerontología, San José, Costa Rica; 2. Primary Care Internal Medicine/ Geriatrics, Mayo Clinic College of Medicine, Rochester, MN; 3. Public Health School, University of Costa Rica, San José, Costa Rica.*

The purpose of this work was to establish if gait speed (GS) and/or the Modified Edmonton Frailty Scale (MEFS) could add important information regarding prediction of adverse outcomes in elderly attending geriatric facilities. The setting was a day hospital in Costa Rica specializing in geriatric care. Falls, hospitalization, ER visits, increasing dependence and death were considered adverse outcomes.

Basal assessment included the institutional form to record the Comprehensive Geriatric Assessment, the 15-item Yesavage screening test for geriatric depression, the Mini-Mental State Examination (MMSE), Lawton and Barthel Scales for Activities of Daily Living. We also designed a report sheet for the gait speed measurements and Spanish-translation of the Modified Edmonton Frailty Scale (MEFS).

All participants were clinically evaluated during baseline and then followed by telephone interview at six months. We included 145 patients (mean age of 78.07 years, 66.8% females, number of comorbidities 5.54 (± 2.02 SD), medications 5.98 (± 2.78 SD). In baseline we found Barthel Scale median 83.31, mean Lawton Scale 4.88 (±2.68 SD), Yesavage test resulted in 42.1% positive cases, MMSE mean 24.11 (±5.75 SD), median MEFS 9 and median GS 0.7 m/seg. Individuals were stratified in high or low risk groups according to median values obtained among MEFS and GS, considering those in the low risk category as "negative" for the test.

At the end of the follow up 137 individuals were available for analysis. In order to combine data obtained from the MEFS and GS a parallel screening test analysis was considered. Using the MEFS as first test 78 cases were considered negative individuals and went for the GS test (three were unable to perform the test and were excluded). Parallel analysis resulted in a positive predictive value of 84.78 (76.90-92.67 95% CI), with a sensitivity of 72.22 (63.31-81.13 95% CI) and a specificity of 46.15 (25.07-67.24 95%CI) for detection of adverse outcomes.

These findings are very important in order to establish new models of care for the frail elderly, representing a better first-step screening a broader multi-domain test of frailty as the Edmonton Frailty Scale than just a physical measure as gait speed.

A100

Has Nursing Home Hurricane Evacuation Improved?: A Katrina-Gustav Comparison.

G. P. Blanchard,[1,2] D. M. Dosa.[1,2] *1. The Warren Alpert School of Medicine at Brown University, Providence, RI; 2. Division of Geriatrics, Rhode Island Hospital, Providence, RI.*

Background: One of the tragic legacies of Hurricane Katrina was the loss of life among Louisiana (LA) nursing home (NH) residents. Katrina revealed a staggering lack of emergency preparation and understanding of how to safely evacuate frail populations. Three years later, LA braced for Hurricane Gustav, a storm heralded to rival Katrina's destructive power. Though its magnitude of destruction paled to Katrina, the warnings and predicted path preceding Gustav yielded a process of NH evacuations similar to Katrina. Our goal was to ascertain whether NH administrative directors (ADs) felt more prepared to evacuate for Gustav.

Methods: In 2006, Dosa, et. al. (JAMDA, 3/07), interviewed 20 NH ADs by qualitative telephone survey to evaluate their lessons learned from Katrina. We contacted ADs at these 20 NHs to conduct a recorded 16-item survey to compare hurricane preparedness. Data were transcribed and narrative summaries created for each AD. Specifically, ADs were asked if they evacuated, their destination, and about logistical issues with evacuation (e.g., transportation, injuries). ADs were asked to rate their confidence with state assistance and their evacuation preparedness on a 10-point scale (10 = most confident).

Results: 16 of the 20 NHs that participated in 2006 agreed to be surveyed (1 refused, 1 could not be reached, and 2 were excluded as they were hired after Gustav). 12 of these 16 ADs were part of the 2006 study (4 were new hires since Katrina).

Unlike Katrina, when only 45% evacuated, all 16 NHs evacuated before Gustav (50% to another NH and 50% to a church, gym, or college). Overall, ADs rated their confidence in preparedness for Gustav as a mean of 8.4 (range 5 to 10) – compared with a mean of 5.7 (range 3 to 8) for Katrina, a 47% improvement. Of the 12 ADs employed pre-Katrina, 83% reported improved collaboration with the state and 50% noted improved transportation. Yet for all respondents, 5 noted substantial logistical problems during evacuation (mostly transportation); 4 noted resident injuries (2 hip fractures, 2 head injuries); and 3 noted resident post-traumatic stress.

Conclusions: NH ADs felt more prepared to evacuate their residents for Gustav, owing partly to improved communication and collaboration with state agencies; however, considerable morbidity and logistical problems remain with evacuating frail NH residents before hurricanes.

A101

Development of an Aging and Developmental Disabilities Clinic within an Academic Outpatient Geriatrics Practice.

J. A. Moran.[1,2] *1. Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, MA; 2. Medicine, Harvard Medical School, Boston, MA.*

Supported By: Health Resources and Services Administration Geriatric Academic Career Award.

BACKGROUND: In the 1930's, the mean age at death for persons with developmental disabilities (DD) was 19 years. By 1993 this increased by 247% to 66 years (Janicki et al., 1999), and by 2030 the population aged 60 and older is estimated to nearly double in size to 1.2 million people (Heller et al., 2004). With the increase in life expectancy in this population, a new niche within geriatric medicine is emerging. As adults with developmental disabilities age, they encounter medical and psychosocial problems well-suited to the training of the geriatrician: osteoporosis, osteoarthritis, dementia, depression, hearing and vision impairments, and polypharmacy. This is especially true for older adults with Down syndrome, who are at a markedly increased risk of developing Alzheimer's disease as they age. AIMS: To address the growing need for specialized geriatric care within the aging DD population, the Beth Israel Deaconess Medical Center Aging and Developmental Disabilities Clinic was established. The goal of the clinic is to provide superb specialized care to older adults with DD, while also serving as a teaching venue for internal medicine and geriatric medicine trainees. The education of physicians in the special needs of adults with DD is inadequate, and frequently no formal exposure to the needs of this population is provided during standard medical training. METHODS: The clinic provides comprehensive geriatric consultation for aging adults with all forms of intellectual and developmental disabilities. Memory assessments for adults with Down syndrome and other forms of DD are provided from both a medical and biopsychosocial perspective, complete with specialized cognitive testing for adults with intellectual disabilities. Other common consultation questions may include assessment of behavioral and functional changes, evaluation of polypharmacy, and preventitive care. The clinic was founded in 2006 by the author, a geriatrician-educator with specialty training in older adults with DD. RESULTS: Response has been extremely positive, prompting expansion of clinic time to meet the demand. An average of 8-10 new patients are being seen monthly. CONCLUSIONS: As the Aging and Developmental Disabilities Clinic grows, it will strive to close an healthcare and educational gap while serving as a unique resource for an emerging geriatric population.

A102

Are patients' wishes known, documented, and easily accessible in the nursing home?

L. Grooms, C. Furman, K. Church, T. Miles. *Family and Geriatric Medicine, University of Louisville School of Medicine, Louisville, KY.*

Purpose

As the population ages, nursing homes will play a larger role at the end of life. Given the increasing role of nursing homes, it is important that patients' wishes are followed. To ensure that this occurs, physicians must discuss advance directives with their patients and document these discussions. Documentation of patient wishes does not always result in written orders.

In 2003, data was collected on how goals of care discussions are documented in the chart. Charts were also reviewed to determine whether these goals were reflected in the printed physician orders and the face sheet so that the patients' wishes are known and easily accessible. After four years of a palliative care education initiative at the nursing home, the same data was collected.

Methods:

A retrospective chart review was performed on all residents at a teaching nursing home in July 2007. Data collected included the following: patient ID, admission date, level of care, advance directives, patient's choices about advance directives, and location of advance directives in the chart. The data was compared with results from a similar study completed in November 2003.

Results:

Since the original study in 2003, documentation of advance directives has improved. The printed physician orders in 2003 had the following documented (numbers indicate % of charts): 64.5 DNR, 0.6 DNH. In 2007, the printed physician orders had the following (% of charts): 83.5 DNR, 16.5 DNH. This shows 19% increase in DNR documentation. However, review of the charts showed that these discussions were occurring, but were not being documented in the printed orders.

The face sheet in 2003 had the following documented (% of charts): 73.3 DNR, 0.6 DNH, 1.2 DNH stickers. In 2007, the face sheet had the following (% of charts): 78 DNR, 6 DNH, 19.9 DNH stickers. This shows 5% improvement in documentation of DNR. However, the charts demonstrated more patients had these discussions, but were not reflected on the face sheets.

Conclusion:

Even though more goals of care discussions were elicited and documented in 2007 as compared to 2003, the documentation was not consistent. When patients become ill, nursing home staff need immediate access to patients' wishes. The face sheet and printed physician orders are immediately accessible. Therefore, the documentation of goals of care needs to be consistent.

A103

Acute Care for Elders (ACE) Consultation: Pharmacist's Role is Integral to the Interdisciplinary Team by Promoting Safe Medication Use in Hospitalized Older Adults.

L. A. Gryttenholm, M. Siebers, M. Brenny-Fitzpatrick, C. Chacko. *Pharmacy and the Department of Medicine, University of Wisconsin Hospital and Clinics, Madison, WI.*

Acute Care for Elders (ACE) units have been extensively discussed in the geriatric literature as an innovative means to provide enhanced care for hospitalized older adults. For institutions without designated ACE units, such as the University of Wisconsin Hospital and Clinics (UWHC), an interdisciplinary ACE team can provide comprehensive geriatric consultations. An ACE pharmacist considers age-related changes that may alter a medication's pharmacokinetic and pharmacodynamic characteristics and evaluates medications that may potentially impact geriatric syndromes. Safe medication use also requires the consultant pharmacist to be vigilant in educating patients, families and healthcare professionals. Objectives: To describe the pharmacist role as part of the consult team, to describe medication recommendations made and their outcomes. Methods: A retrospective analysis of ACE patient information collected for six months was evaluated. Evaluated data included: consult number, patient demographics, requesting physician service, consult reason, medication number on admission, number and types of pharmacist interventions and recommendations implemented. Results: One hundred and thirty eight patients received an ACE consultation at UWHC between January and June 2008. The average patient age was 79.2 years with females accounting for 60% of consults. The Cardiovascular Medicine team requested the most consults followed by the Hospitalist and Family Practice services. Delirium, dementia, mental status changes, and medication reviews accounted for the majority of consults. There were 461 medication recommendations made, with an average of 4.5 recommendations per patient and 75.5% of these were implemented by the requesting team. The most common types of new medications recommended were for pain management, Alzheimer's disease, depression or delirium. Medications prone to cause agitation, pain medications and antibiotics were the most common medications recommended to discontinue. Conclusions: This innovative interdisciplinary consult team model can be used in other healthcare organizations.

Drug-related morbidity and mortality is costly in human and economic terms. The inclusion of a pharmacist in these patient consultations is critical to impacting the healthcare delivered to these older adults.

A104

A multidisciplinary program for the treatment and follow-up of depression in ambulatory elderly. Preliminary results.

M. Schapira, M. Smietniansky, J. Esteban, H. Patiño, P. Bongiorno, M. Martin, M. Montero Odasso, L. Camera. *Hospital Italiano de Buenos Aires, Buenos Aires, Argentina.*

Supported By: Hospital Italiano de Buenos Aires

Context: Depression is a common disorder in the elderly population; with significant elevated rates in terms of morbidity and mortality. Nonetheless it continues to be a subdiagnosticated disease leading to poor outcomes.

Design: A randomized controlled trial in community elderly people at a Geriatric Unit.

Participants: 37 patients aged 65 years or older referred by primary care physicians with diagnostic of clinical depression.

Intervention: Patients were recruited for an initial comprehensive geriatric evaluation, and then randomly assigned to the program intervention (n= 18) or usual care (n= 19). Intervention patients had bimonthly follow-up visits, social evaluation, access to psychiatric consultation, weekly phone interviews to assess the course of the symptoms and/or detect any other problem, and weekly round case discussion with multidisciplinary team.

Main outcomes measures: Assessment al baseline and at 6 months for symptoms of depression, measured by qualitative and quantitative validated scales.

Results: At 6 months, 55.5 % of participants in intervention group experience a 50 % reduction in depressive symptoms from baseline while control group with usual care experienced a 31.5 % reduction (relative risk [RR], 0.65; 95 % confidence interval [CI] 0.35-1.18).

Conclusion This preliminary data show a reduction of the depressive symptoms in the intervention group. Due to the limited sample size the results are not powered to show statistically significance, however, this preliminary result shows the potential of this intervention.

A105

The Functional Evaluation Unit (EFAu): A brief geriatrics tool for diagnosing dementia.

M. Schapira, J. Benchimol, M. Gonzalez Salvia, B. Outumuro, M. E. Guajardo, M. E. Soderlund, M. Mattiusi, F. Giber, M. V. Perazoli, A. Aleman, J. Bekerman, E. Quintar, D. Seinhart, M. Montero Odasso, B. Martinez, M. Cavagna, M. E. Riggi, L. Camera. *Hospital Italiano de Buenos Aires, Buenos Aires, Argentina.*

Supported By: Hospital Italiano de Buenos Aires

Elderly people with cognitive impairment are an important target for medical intervention. Accurately identification of this vulnerable group is a critical step for implementing interventions and implementing quality improvement effort. However, identification in primary care setting by General Practitioner (GP) can be cumbersome.

Objective: to develop a 1 hour functional evaluation and cognitive tool in detection dementia referred by their GP. Methods: prospective community based cohort study comprising 811 patients aged 65 and older.

The EFAu was developed by geriatrician as a tool to evaluate patients who present with cognitive complaint. The gold standard was the criteria DSMIV for dementia during a follow up (average 2 years).

At evaluation, social-demographic information, educational level, comorbidities, global mental status, depression, functional capacity and a complete list of chronic medications were evaluated by a geriatrics team. Measures included: Geriatric Depression Scale, Activities of Daily Living, Instrumental Activities of Daily Living, Mini Mental State Exam and 5 cognitive domains were tested: memory, attention, language, visuospatial skill and executive functioning.

The EFAu were administered to all participants, and sensitivity (SE) and specificity (SP) were assessed for detection of dementia.

Results: the prevalence of dementia was 37,4%; SE 65.1%, 95% confidence interval (CI) = .59-.70; SP 95.2%, 95 % CI = 0.93-0.96; positive predictive value 89.1%, 95% CI = .84-.92); negative predictive value 82%, 95% CI = .78-.85). The low SE included mild cognitive impairment (63%), depression (26%) and patients without cognitive impairment (11%).

Conclusion: the EFAu is a geriatrics tool with high SP, good positive and negative predictive values for detecting dementia in patients with cognitive complaints.

A106

Effect of a Facilitated Hospital Discharge Program on Post-Hospital Outcomes in Elderly Patients.

R. O'Connor,[1] K. B. Costello,[1] A. Ata.[2,1] *1. Albany Medical College, Albany, NY; 2. State University of New York at Albany School of Public Health, Albany, NY.*

Supported By: AMC Graduate Studies Program

The post-hospital period is a precarious time for elderly patients. Medical issues evolving during the time between discharge and resumption of primary care may result in avoidable complications, including re-hospitalization. We conducted a study of the efficacy of a Facilitated Hospital Discharge Program (FHDP), a collaborative program of Albany Medical Center (AMC) and the Visiting Nurse Association of Albany (VNA), in the prevention of post-hospitalization complications in elders. The FHDP provides coordination of transitional care through program physician home visits and communication with hospitalists, hospital case managers, visiting nurses, caregivers, and PCPs during the post-hospital period before resumption of primary care. We examined the effect of the FHDP on readmission and emergency department visits within 30 and 60 days of discharge. We hypothesized that the enhanced medical supervision and coordination of care provided by the FHDP would result in fewer of these events when compared to controls who were not enrolled in the program. To test the hypothesis, we employed a nonconcurrent cohort study design. The health outcomes of 30 patients enrolled in the FHDP were compared to 54 historical controls. Cases and controls were matched according to age, sex, length of hospital stay, discharge diagnosis, co-morbidities, surgeries within 60 days prior to discharge, and previous hospitalizations within 30 days of current admission. Data was abstracted through retrospective chart review and analyzed. While trends appeared favorable for all 4 outcomes, none achieved statistical significance. Potential reasons for lack of significant effect include inadequate sample size vs. effect size, data loss due to the retrospective nature of the study, or a lack of program effect. Because we only had access to outcome data at AMC, events at other hospitals may have been undetected, especially in control patients. Another limitation of the study was that control patients may or may not have required or received VNA follow-up. All cases qualified for and received VNA services. Therefore the study population may have needed a higher level of care in aggregate. A more comprehensive prospective study of the program is planned to further evaluate the efficacy of FHDP for the above measures as well as other health outcomes, cost, and patient and caregiver satisfaction.

A107

Lost in Transition: Reconciliation of Nursing Home and Hospital Advance Directives.

T. W. Farrell,[1] S. Gravenstein.[1,2] *1. Division of Geriatrics, Rhode Island Hospital, Providence, RI; 2. Quality Partners of Rhode Island, Providence, RI.*

Purpose: We hypothesize that lack of advance directive (AD) status reconciliation between nursing home and hospital visits predicts a greater frequency of hospitalization. Our secondary hypothesis is that certain index signs and symptoms occur frequently with care transitions, and therefore can help focus AD discussion.

Key Words: Care transitions, rehospitalization

Participants: Nursing home residents

Setting: Not-for-profit nursing home

Description of study methods: A retrospective chart review was conducted for participants hospitalized between 01JUL07 and 01NOV08. Each care transition was defined as a hospital visit from the nursing home followed by care at the nursing home, and included subjects evaluated in the emergency department only. We recorded the index condition with signs or symptoms of chest pain, dyspnea, fever, and altered mental status leading to each transition, AD status before and after each transition, and attempts at AD reconciliation within two weeks of each transition. We used contingency table and chi-square analyses to assess differences, with a two-tailed alpha set at 0.05.

Summary of results: The 81 study subjects (mean age 85.4 years; 66.7% female) transitioned 168 times. AD status within 2 weeks of nursing home readmission was reconciled for 18/44 transitions (n=39 subjects) with only 1 transition and for 22/124 transitions (n=42 subjects) with >1 transition (X^2=9.61, p=0.019). 40/168 (23.8%) of transitions had AD status reconciled within 2 weeks of nursing home readmission. AD status was listed on the hospital interagency form upon first readmission in 22/39 subjects with only 1 transition and in 17/42 subjects with >1 transition (X^2=2.06, p=0.15). 78/168 (46.4%) of hospital interagency forms were either incomplete or missing an assignment of AD status. 24/39 and 77/129 transitions of the singly and multiply transitioning subjects, respectively, had at least 1 of the index conditions at transition (p=NS).

Statement of conclusions: Lack of reconciliation of AD status within two weeks of readmission to the nursing home from a hospital visit was associated with an increased frequency of care transitions. Reconciliation of ADs, possibly upon first readmission to the nursing home, may provide an important target for quality improvement initiatives in the nursing home setting. Certain index conditions frequently contribute to care transitions.

A108

FMRI of Pre-symptomatic Familial Alzheimer's Disease (FAD) Mutation Carriers During a Task of Executive Function.

A. H. Chen,[1] L. D. Medina,[2] J. M. Ringman.[2] *1. Student, University of Cincinnati College of Medicine, Cincinnati, OH; 2. Mary S. Easton Center for Alzheimer's Disease Research, UCLA Department of Neurology, University of California, Los Angeles, Los Angeles, CA.*

Supported By: This study was supported by PHS K08 AG-22228, California DHS #04-35522, M01-RR00865, and the Goldberg Trust. Further support for this study came from the NIA Alzheimer's Disease Research Center Grant AG-16570, the Sidell-Kagan Foundation, and the NIA/AFAR & Lillian R. Gleitsman Medical Student Training in Aging Research Program

Purpose: Past research has demonstrated that older adults with known genetic risk factors for Alzheimer's Disease (AD) and no clinical signs of dementia exhibit increased, compensatory focal cerebral activity during memory encoding tasks as measured by functional magnetic resonance imaging (FMRI). Few studies of similar populations have investigated executive function, a major cognitive system devastated by AD. This novel study utilizes FMRI to investigate whether or not mutation carriers for Familial Alzheimer's Disease (FAD) will demonstrate similar increased focal cerebral activity during a task requiring executive function.

Methods: 24 asymptomatic subjects were studied, of whom 15 were APP or PS-1 mutation carriers and 9 were non-mutation carriers. The mean age and gender were similar for the two groups. Patterns of brain activation during FMRI scanning were determined while subjects performed a task of executive function that involved a word-picture pair and inhibition of a natural response. FMRI analysis was carried out using FEAT. Individual brain scans were group averaged using statistical parametric mapping analysis. Statistic images were thresholded using a clusters determined by Z>2.3 and a correlated cluster significance threshold of P=0.05.

Results: Parametric mapping analysis revealed increased focal cerebral activation in the prefrontal and parietal regions during the task of executive function in both the mutation carrier and non-carrier groups. There was no statistically significant difference in the magnitude or extent of brain function between groups during the executive function task in any cortical region.

Conclusion: Tasks involving executive function may not exhibit the same compensatory increase in focal cerebral activation in populations at risk for AD that is seen with memory-related tasks. These findings have implications toward the prospect of early AD diagnosis.

A109

Determinants of Judgment and Problem Solving in Persons with Dementia.

A. M. Mayo,[1,2] M. I. Wallhagen,[3] B. A. Cooper,[3] K. M. Mehta,[4] L. Ross,[5] B. L. Miller.[1] *1. Memory & Aging Center, University of California, San Francisco, San Francisco, CA; 2. School of Nursing & Health Sciences, University of San Diego, San Diego, CA; 3. School of Nursing, University of California, San Francisco, San Francisco, CA; 4. Geriatrics, University of California, San Francisco, San Francisco, CA; 5. Institute for Health & Aging, University of California, San Francisco, San Francisco, CA.*

Supported By: The National Alzheimer's Coordinating Center (NACC) (#2007-JI-01), the University of California, San Francisco Alzheimer's Disease Research Center

ADRC (P50-AG023501), and the John A. Hartford Foundation.

Purpose of Study: The relationship between functional ability and judgment/problem solving and the extent to which select demographics and cognitive measures moderate that relationship in patients with dementia were examined in order to determine if compromised functional ability should trigger a recommendation for a focused evaluation of patient judgment/problem solving.

Study Methods: The National Alzheimer's Coordinating Center Universal Data Set which contains data from 29 Alzheimer's Disease Centers across the United States from September 2005 to September 2007 was utilized for this study. Primary variables were functional status, measured with the Functional Activities Questionnaire (FAQ), and judgment/problem solving, measured with the judgment & problem solving subscale on the Clinical Dementia Rating (CDR) Scale. Relationships between variables were calculated using correlational statistics. Hierarchical (simultaneous) regression analysis was used to determine which factors moderated the relationship between functional ability and judgment/problem solving.

Results: All participants in this study (n=3855) had a confirmed diagnosis of dementia. Judgment/problem solving was related to functional ability (r= 0.665). Scores on the FAQ and Mini-Mental Status Exam (MMSE) jointly predicted 56% of the variance in CDR Judgment/Problem Solving scores (R-squared = .56, F = 2304.01, df =

2,3666, p < .0005). The interaction predicted an additional 4% of the variance in Judgment/Problem Solving scores. As determined by predicated values, as the MMSE score decreased below 16, the prediction of judgment/problem solving by functional ability became stronger.

Conclusions: There is a strong relationship between functional ability and judgment/problem solving and mental status moderates that relationship. Health care professionals may elect to use routinely collected information about compromised functional ability and mental status scores as cues to pursue a focused assessment of judgment/problem solving in their patients with dementia.

A110

Late-life measures of adiposity and the incidence of dementia.

B. E. Bowen,[1] J. Williamson,[1,2] J. Lovato,[2] A. Fitzpatrick,[3] M. Carlson,[4] K. Sink,[2] J. Luchsinger,[5] C. Furberg,[2] J. Demons.[2] *1. Wake Forest University School of Medicine, Winston-Salem, NC; 2. Sticht Aging Center, Wake Forest University Health Sciences, Winston-Salem, NC; 3. University of Washington School of Public Health and Community Medicine, Seattle, WA; 4. Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; 5. Columbia University Medical Center, New York, NY.*

Supported By: American Federation for Aging Research.

Background: The prevalence of dementia, notably Alzheimer's dementia, is rapidly increasing, along with an increase in life expectancy. Population studies have also demonstrated an increase in the proportion of older people who are overweight and obese in the United States; it is important that research into the etiology of dementia clarifies the relationship between dementia incidence and body weight. We assessed the relationship between measures of adiposity and overall dementia incidence and also each subtype of dementia as classified by the GEM study investigators.

Design: The Ginko Evaluation of Memory (GEM) Study, a six-year, double-blind, placebo-controlled clinical trial (n=3069).

Participants: 3069 community-dwelling adults over age 75 who underwent extensive cognitive assessment every six months.

Methods: We used BMI as a surrogate for adiposity based on the following classification: underweight (BMI < 20), normal (BMI 20-24.9), overweight (BMI 25.0-29.9), or obese (BMI > 30). The adiposity-associated risk for developing all-cause dementia and dementia subtype, including AD, was explored, adjusting for important covariates. Additional analyses stratified by age and also examined the relationship between waist/hip ratio as an alternative measure of adiposity.

Results: At baseline, there were 660 obese, 1411 overweight, 907 normal weight, and 79 underweight individuals. Table 1 shows the Hazard Ratios and 95% confidence intervals for each category of adiposity relative to persons classified as normal.

Conclusion: In persons 75 years and older, these data show an inverse association between BMI and dementia incidence. Explanations for this association may include survival bias, measurement error in defining adiposity by BMI, and subclinical disease.

Table 1: Hazard Ratios for Incident Dementia

	Hazard Ratio	95% CI
Underweight BMI < 20	1.18	0.72 - 1.94
Normal 20 ≤ BMI < 25	1.00	Reference
Overweight 25 ≤ BMI < 30	0.86	0.71 - 1.04
Obese BMI ≥ 30	0.71	0.55 - 0.92

A111

The effects of amyloid-beta peptide on reactive gliosis in Müller glial cell culture.

C. K. Cheng,[1,2] M. C. Davidson,[2] M. Oliveira,[3] G. A. Silva.[2] *1. School of Medicine, Loma Linda University, Loma Linda, CA; 2. School of Medicine, University of California - San Diego, La Jolla, CA; 3. University of California - Merced, Merced, CA.*

Supported By: The research reported was supported by NIH grant R01NS054736. The investigators retained full independence in the conduct of this research.

PURPOSE: The purpose of this study was to develop a simple in vitro model for rapid pre-screening of candidate drugs for the potential control and treatment of reactive gliosis in the neural retina. Reactive gliosis is a neuropathological process that contributes to all degenerative and traumatic CNS disorders, including essentially all degenerative retinal disorders (i.e. macular degeneration, diabetic retinopathy, and retinitis pigmentosa) prevalent in the geriatric population. In a previous experiment, IL-6 family cytokines (IL-6, oncostatin, ciliary neurotrophic factor, and leukemia inhibiting factor) were demonstrated in vitro to induce reactive gliosis in a controlled manner and at predictable levels in order to pre-screen anti-gliotic drug candidates. In this experiment we tested the potential of amyloid-beta – found in several neurodegenerative disorders - to induce gliosis in the rMC-1 immortalized rat Müller retinal glial cell line by quantifying upregulation of GFAP and vimentin, both markers of gliosis.

METHODS: rMC-1 cells were cultured on glass cover slips in a 24 well plate. Müller cells were plated at different concentrations of amyloid-beta, and were incubated at different time intervals, ranging from one to four days. The concentrations of amyloid-beta tested included: 0.25 μM, 1.0 μM, and 5.0 μM. Cells were fixed and imaged using confocal microscopy for relative differences in GFAP and vimentin expression.

RESULTS: Immunocytochemistry analysis revealed that addition of amyloid-beta upregulated GFAP and vimentin in rMC-1 cells in a dose-dependent relationship. The highest concentration of amyloid-beta (5.0 μM) yielded the highest co-expression of GFAP and vimentin. From two days to four days incubation at 5.0 μM, increased GFAP ($p<0.01$) and vimentin ($p<0.001$) expression were statistically significant relative to the control which lacked amyloid-beta.

CONCLUSION: The results indicate that adding amyloid-beta in vitro may induce reactive gliosis in dose-dependent fashion in order to pre-screen anti-gliotic drug candidates. Additional experiments must be conducted for reproducibility before drug testing can occur.

A112

Timed 10-Foot Walk as a Predictor of Incident Parkinson's Disease: The Honolulu-Asia Aging Study.

J. F. De Luca,[1] G. Ross,[4,1] C. Bell,[1] K. Fong,[2] R. Abbott,[2,1] H. Petrovitch,[2,1] L. White,[1,3] P. Blanchette,[1] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI; 4. Department of Veterans Affairs, Honolulu, HI.*

Supported By: The Hawaii Medical Student Training in Aging Research (MSTAR) National Training Center (NIA, John A. Hartford Foundation & AFAR grant); The John A. Hartford Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; Honolulu Department of Veteran Affairs; National Institute on Aging.

Background: The timed 10-foot walk is used clinically to diagnose and monitor functional impairment. Case-control studies have shown slower walking speeds in patients with prevalent Parkinson's disease (PD). We examined whether walking time predicts 10-year incident PD in elderly men.

Methods: The Honolulu-Asia Aging Study began with the fourth Honolulu Heart Program examination in 1991-93, when 3606 Japanese-American men ages 71-93 years performed the timed 10-foot walk. Walking time (seconds) was used both as a continuous variable and divided into three groups (fast, intermediate, slow). Subgroup analysis excluded those with prevalent stroke or dementia at baseline. Both prevalent (n=66) and incident (n=45) PD were studied as outcomes. Final diagnosis of PD was based on consensus from 2 neurologists using standardized criteria. Chi-square, T-tests, logistic regression and Cox regression were used for analyses.

Results: The prevalence of PD was highest in those with slowest walking times (3.1%, 1.2%, 0.4% respectively, p<0.0001). Using multiple logistic regression analyses adjusting for age, triceps skinfold thickness, midlife smoking and midlife caffeine intake, those with the slowest (OR=7.39, 95% CI=2.92-18.73, p<0.0001) and intermediate (OR=2.88, 95%CI= 1.10-7.57, p=0.03) walking times were significantly more likely to have prevalent PD compared to those with the fastest walk times (reference). Cox proportional hazards models demonstrated a significant increase in risk of 10-year incident PD in those with slow walk times compared to fast (RR=2.26, 95% CI=1.08-4.73, p=0.03). This relationship was slightly stronger when subjects with prevalent stroke or dementia at baseline were excluded (RR=2.49, CI=1.19-5.21, p= 0.02). Most incident PD cases (76%) were in the first 5 years of follow-up, suggesting that slow walk may be a sign of imminent PD.

Conclusion: Slower walk time was significantly independently associated with prevalent PD, and with 10-year incident PD. It is likely that slow walking time is a marker of pre-clinical PD, in addition to being a manifestation of clinically recognized PD. Early screening for PD will be helpful when treatments become available that delay or arrest progression of disease.

A113

The Safety and Tolerability of the Rivastigmine Transdermal Patch Compared with the Rivastigmine Capsule in Patients Switched from Donepezil: Data from Three Clinical Trials.

J. Olin, X. Meng. *Novartis Pharmaceuticals Corporation, East Hanover, NJ.*

Supported By: This study was funded by Novartis Pharmaceuticals Corp.

Purpose: To analyze data from three open-label, multicenter trials to compare the safety and tolerability of switching to rivastigmine transdermal patch or capsule from donepezil in patients with moderate Alzheimer's disease.

Methods: Study US38 was a 25-week, randomized, parallel-group study to investigate the switch (immediate or after 7 days' withdrawal) from donepezil to rivastigmine transdermal patch (4.6 mg/24 hr). Two studies investigated the switch from donepezil to rivastigmine capsules (3–12 mg/day). Study US13 was a 26-week, single-arm, immediate-switch study. Study US18 was a 26-week, sequential cohort study. Patients switched immediately or after 7 days' withdrawal. Safety outcomes included adverse events (AEs), discontinuations due to AEs and serious AEs (SAEs).

Results: At baseline, patients receiving the rivastigmine patch (n=261) had a mean (SD) age of 77.3 (8.0) years, dementia duration of 3.9 (2.6) years and Mini-Mental State Examination (MMSE) score of 18.3 (3.99). Patients receiving rivastigmine capsules (n=331) had a mean (SD) age of 78.1 (7.8) years, dementia duration of 3.6 (2.2) years and MMSE score of 17.9 (4.4). One hundred and eighty four (70.5%) patients receiving the patch experienced at least one AE, and 23 (8.8%) experienced an SAE, compared with 276 (83.4%) and 55 (16.6%) patients, respectively, who received the capsules. Of the patients who experienced an AE, 10 (3.8%) and 109 (32.9%) experienced nausea, and 11 (4.2%) and 80 (24.1%) experienced vomiting with the patch and the capsule, respectively. Discontinuations due to AEs occurred in 38 (14.6%) patients who received the patch, with the most common reasons being application site reaction and disease progression. Discontinuations due to AEs occurred in 64 (19.3%) patients who received the capsule, most commonly because of nausea and vomiting.

Conclusions: The rivastigmine transdermal patch appears to provide a better tolerability profile than rivastigmine capsules, particularly in terms of gastrointestinal AEs and discontinuations due to these AEs.

A114

Neuroprotection by Ginsenoside Rg1 against beta-amyloid-induced apoptosis is mediated by PI-3K/Akt/GSK-3 beta signaling pathway.

J. Zhang,[1] Z. Tu.[2] *1. Biochemistry Department, Wuhan university school of medicine, Wuhan, China; 2. College of Life Science, Huazhong University of Science and Technology, Wuhan, China.*

Supported By: Supported by National Natural Science Foundation of China(No:30670749)

Objective:To investigate the involvement of the PI-3 K(phosphoinositide 3-kinase)/Akt/GSK-3β(Glycogen Synthase Kinase-3β) signaling pathway in the neuroprotection of Ginsenoside Rg1,one of the active ingredients of Ginsenoside, on β-amyloid-induced apoptosis.

Methods: Apoptosis was induced by β-amyloid peptide(25-35) in cultured human neuroblastoma SH-SY5Y cells. Cells were pretreated with the indicated concentration of Ginsenoside Rg1(20μmol/L),Lithium chloride (LiCl,GSK-3β inhibiter,10mmol/L), LY294002(PI-3K inhibiter,20μmol/L),PD98059(MEK inhibiter, 100μmol/L) alone or a combination of Ginsenoside Rg1 with LY294002 or PD98059 for 24 h and then further exposed to 20μmol/L β–amyloid for 12 h to induce apoptosis,untreated cell as vehicle control,cell apoptosis was then assessed using the terminal dUTP transferase nick-end labeling method(TUNEL) and flow cytometric analysis. Akt, Ser 473 phosphorylation of Akt (p-Akt),GSK-3β and Ser 9 phosphorylation of GSK-3β(p-GSK-3β) expression was examined using Western blotting, β-actin levels were determined as an internal control.

Results: Compared with β-amyloid treated alone cells,pretreatment with Ginsenoside Rg1 significantly reduced the proportion of apoptotic cells(43.3 ± 2.9% VS 14.1 ± 2.5%, P<0.01) and resulted in 1.8 fold, 2.9 fold, 1.4 fold and 2.7 fold increases in Akt, p-Akt,GSK-3β and p- GSK-3β expression,respectively(P<0.05). Similar results were also observed in LiCl treated cells, furthermore,the neuroprotective effect induced by Ginsenoside Rg1 was abolished by combination of Ginsenoside Rg1 with LY294002 pretretment,but no obvious change was detected in the combination of PD98059 with Ginsenoside Rg1 pretreated cells.

Conclusion:The results suggest that the neuroprotection of Ginsenoside Rg1 on β-amyloid-induced apoptosis via GSK-3β phosphorylation was regulated primarily through PI-3 K/Akt signaling pathway but not by MAPK signaling pathway.

A115

Influence of vascular risk factors on neuropsychological profile in Alzheimer's disease.

L. Tay, M. Chan, M. S. Chong, J. J. Chin, W. S. Lim. *Geriatric Medicine, Cognition and Memory Disorders Service, Tan Tock Seng Hospital, Singapore, Singapore.*

Objective: To examine the relationship between aggregation of vascular risk factors (RF) and neuropsychological profile in Alzheimer's disease (AD), and how this compares with vascular dementia (VaD) in a memory clinic cohort of predominantly Chinese ethnicity.

Methods: We evaluated 37 AD and 19 VaD subjects of mild severity (CDR 0.5-1). DSM-IV criteria for dementia, NINCDS-ADRDA criteria for AD, and NINDS-AIREN criteria for VaD were

applied. We excluded AD subjects with radiological evidence of infarcts or past history of stroke. Based upon the presence of five vascular RF [hypertension, hyperlipidaemia, diabetes, ischaemic heart disease (IHD) and smoking], we stratify AD subjects into 2 groups: i) AD-RF- (n=25), with 0-2 RF; and ii) AD-RF+ (n=12), with 3-5 RF. We then compared neuropsychological test performance, Cornell Scale for Depression (CSD) and presence of apathy between AD-RF-, AD-RF+ and VaD.

Results: AD-RF+ and VaD had significantly more vascular RF compared with AD-RF- (mean: 3.3, 2.6, 1.1 respectively, P<0.01). All vascular RF except smoking, were significantly more common in AD-RF+ and VaD groups (P<0.05). Similar to AD-RF-, AD-RF+ subjects displayed greater impairment in delayed memory compared with VaD (mean: 1.1, 1.3, 2.1, P=0.21). However, in all non-amnestic domains assessed, AD-RF+ performed worse than AD-RF-, being intermediate to VaD in visuospatial performance (object assembly, P<0.01; block design, P=0.02) and more impaired than VaD in category fluency (P=0.25) and confrontational naming (P=0.02). AD-RF+ also showed a non-significant trend in CSD and apathy that was intermediate between AD-RF- and VaD.

Conclusions: Even in the absence of strokes, aggregation of vascular RF can influence the neuropsychological profile of AD. The association of depression, apathy and greater impairment in non-amnestic domains with AD subjects having more vascular RF, suggests potential diagnostic and treatment implications that merit further investigation.

A116

Clinical characterization across the spectrum of Mild Cognitive Impairment (MCI).

M. Chan, L. Tay, W. S. Lim, M. S. Chong. *Geriatric Medicine, Tan Tock Seng Hospital, Singapore, Singapore.*

Background: Mild Cognitive Impairment (MCI) is an important transitional state between normal aging and dementia. Emerging evidence suggests that MCI exists across a spectrum of severity that spans the continuum from mild to late stages.

Objectives: To determine whether clinically characterized MCI subjects may be further delineated into categories of varying severity using a combination of cognitive and functional measures.

Methods: We reviewed the clinical data of 124 subjects with no dementia (ND, n=27), uncertain dementia (n=41), and mild Alzheimer's disease (AD, n=54) presenting to an Asian memory clinic over a 1-year period. Uncertain dementia patients were considered early MCI (e-MCI, n=5) when global Clinical Dementia Rating (CDR) score =0.5, but neuropsychological test scores were within population norms (<1 SD). Remaining subjects with uncertain dementia were classified as either: (i) MCI (n=19), when CDR sum of boxes (CDR-SB) scores were ≤1.5; or (ii) late MCI (l-MCI, n=17), when CDR-SB >1.5. Cognitive assessment comprised the Chinese Mini-Mental State Examination (CMMSE) and a neuropsychological battery evaluating verbal memory, language, visuospatial ability and executive functioning. Functional assessment was performed using Lawton's scale for instrumental activities of daily living (iADL, total score=23).

Results: The subjects were predominantly elderly (mean age 72.0±9.0), female (62.1%) and Chinese (90.3%). There was a significant trend for worsening performance across the spectrum from ND, e-MCI, MCI, l-MCI to mild AD for CMMSE, iADL, and neuropsychological domains of recognition memory, delayed memory and executive functioning (ANOVA, p<0.05 for all tests). While e-MCI subjects had neuropsychological profiles similar to subjects with ND (post-hoc Bonferroni, p>0.05 for all neuropsychological domains between ND and e-MCI), l-MCI subjects demonstrated functional impairment that approximated mild AD (mean iADL scores 16.3 and 14.6 respectively, p=0.59).

Conclusions: Our study offers proof-of-concept evidence that MCI is a transitional continuum with varying degrees of severity, ranging from the mildest end of the spectrum (e-MCI) that more closely resemble normal aging, through formal MCI criteria as implemented in clinical trials, and to the late stage (l-MCI) that more closely approximates early dementia in clinical characterization.

A117

Vitamin E slows functional decline and anti-inflammatories slow cognitive decline in Alzheimer's Disease.

M. R. Flaherty,[1] J. J. Locascio,[2] A. Atri.[2,3] *1. University of New England College of Osteopathic Medicine, Biddeford, ME; 2. Dept. of Neurology, MA Alz Dis Res Ctr, MA General Hospital, Harvard Med Sch, Boston, MA; 3. Ctr. for Translational Cognitive Neuroscience, GRECC, VHA Bedford Med Ctr, Bedford, MA.*

Supported By: Supported by National Institutes of Aging grants 1K23 AG27171-02 (Atri) and 5P50 AG05134 (Dr. Bradley T. Hyman; MA Alzheimer's Disease Research Center [MADRC]), American Federation for Aging Research MSTAR grant (Flaherty) and the NIH Loan Repayment Program (Atri). We would like to acknowledge our great debt to the patients and families involved with research in the MGH Memory Disorders Unit and MADRC without whom this research would not be possible.

Disclosure: There was no sponsorship or involvement by the pharmaceutical industry, including the motivation, design, execution, interpretation, presentation and costs associated with any part of this study. Dr. Atri has no conflict of interest to disclose with respect to this study. Dr. Atri has in the past received remuneration for lectures or consulting activities from Eisai, Forest, Merck, Novartis, and Pfizer, and Investigator-Initiated research grant support from Forest. He has also participated in conducting clinical trials in association with the Alzheimer's Disease Cooperative Study (ADCS), Elan, Neurochem and Wyeth. Dr. Locascio and Mr. Flaherty have no potential conflicts to disclose.

Objective: To assess the real-world clinical effectiveness and long-term clinical trajectory in patients with Alzheimer's disease (AD) who were treated with VitE and AI medications.

Methods: 540 subjects with Probable AD (60% female, mean age 73.9 yrs, education 14.3 yrs) taking a cholinesterase inhibitor underwent serial clinical evaluations at a memory disorders unit. Cognition was assessed by the Information-Memory-Concentration subscale of the Blessed Dementia Scale (BDS) and function was assessed by the Weintraub Activities of Daily Living Scale (ADL) at six-month intervals. As part of their clinical care, 208 subjects took VitE but no AI, 49 took AI but no VitE, 177 took both, and 106 took neither during the course of the study. Mean follow-up was 3.1 years (6.4 visits). Cohen's d effect sizes were calculated annually for years 1-5 based on mixed-effects regression analyses.

Results: At baseline, subjects made a mean 9.6 errors on BDS, were on average 26% dependent on ADLs, and had a mean CDR of 0.8. Covarying for baseline scores and their interaction with time, age, duration of illness at baseline, and education, significant effects were observed on Cohen's d for ADLs in favor of VitE (vs. NO-VitE), and for BDS in favor of AI (vs. NO-AI). For VitE, the ADL Cohen's d significantly increased with duration of treatment going from 0.20 in year-1 (p=0.02), to 0.27 (p=0.002) by year-2, and to 0.42 by year-5 (p<0.001). For AI, the BDS Cohen's d ranged from 0.12 in year-1 (p=0.08) to 0.17 by year-2 (p=0.02), and to 0.22 (p=0.006) by year-5.

Conclusions: Analysis of real-world clinical data from patients with AD treated in a memory disorders unit showed treatment with vitamin E is associated with slower long-term functional decline. These treatment benefits show small to medium effect-sizes that increase with time. Treatment with anti-inflammatory medications shows small but stable effect-sizes that are associated with modest long-term slowing of cognitive decline. Treatment with vitamin E and anti-inflammatory medications may provide long-term benefits in slowing decline in AD. Further studies are needed to assess the long-term risk-benefit calculus in AD for treatment with vitamin E and anti-inflammatories.

A118

Brain Morphology Differences in Older Adults with Disabling Chronic Pain.

N. Buckalew,[1] M. W. Haut,[4,5] L. Morrow,[2] S. Perera,[3] D. Weiner.[2,3] *1. CSTP, UPSOM, Pittsburgh, PA; 2. Psychiatry, UPSOM, Pittsburgh, PA; 3. Medicine, UPSOM, Pittsburgh, PA; 4. Behavioral Medicine and Psychiatry, WVU School of Medicine, Morgantown, WV; 5. Radiology, WVU School of Medicine, Morgantown, WV.*

Supported By: 1.) University of Pittsburgh's Claude D. Pepper Older Americans Independence Center

2.) Clinical Scientist Training Program (CSTP) funded by Dr. Arthur Levine, Senior Vice Chancellor for Health Sciences and Dean of the University of Pittsbirgh School of Medicine (UPSOM)

3.) NIH T32 Training Grant from the National Institute on Aging

Purpose: Chronic low back pain is the most common musculoskeletal disorder affecting older adults. Previously we found smaller regional brain volumes, left parietal lobe grey matter (GM) and middle cingulate white matter (WM), in older adults with chronic low back pain (CLBP) compared to pain free. It is unknown how these structural brain deficits relate to chronic-pain-related disability. We report findings from an open pilot study examining differences in brain structure in older adults with CLBP reported as disabling and non-disabling; and relationships among brain structure, neuropsychological (NP) and physical performance (PP).

Methods: Community dwelling older adults (≥65 years of age) with CLBP (experienced every day or almost every day of at least moderate intensity for ≥3 months) underwent brain MRI, assessment of NP using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), and PP using the Short Physical Performance Battery (SPPB). Participants were categorized into two groups: CLBP self-reported as 1.) disabling (pain that necessitated cutting back on daily activities or resulted in being bed bound for > 6 weeks over the past 6 months); or, 2.) non-disabling (pain that has not limited function). Exclusions include psychiatric or neurological disorders, substance abuse, opioid use, or diabetes. T-test was used for between group comparisons and Pearson's correlation coefficients for association analysis combining groups.

Results: Nine of sixteen participants have completed the study. Between groups analysis reveals significantly lower WM integrity of the splenium of the corpus callosum ($P < 0.02$). Combining groups there is a strong correlation between higher SPPB scores and higher WM integrity of the left centrum semiovale ($R = 0.71$, $P < 0.03$).

Conclusion and Significance: Brain structure is different in those with disabling chronic pain, notably WM connections in the posterior brain. These results are consistent with our prior study indicating brain differences in regions involved in processing sensory and pain information. Standard treatment of chronic pain with physical therapy and somatic pain relief may be insufficient if brain structure and function are key contributors to chronic pain and disability risk.

A119

Immunohistochemical Characterization of Tau and Aβ in the Basal Ganglia and Midbrain of Patients with Alzheimer's Disease (AD).

P. A. Ljubenkov,[1] S. Tung,[2] J. Pomakian,[2] D. B. Seligson,[3] H. V. Vinters.[2] *1. Temple University School of Medicine, Philadelphia, PA; 2. Cellular & Molecular Pathology, University of California, Los Angeles, Los Angeles, CA; 3. Department of Pathology and Laboratory Medicine, University of California, Los Angeles, Los Angeles, CA.*

Supported By: National Institute of Health, John A. Hartford Foundation, Lillian R. Gleitsman Foundation, The American Federation of Aging Research, PHS Grant P50 AG16570

Amyloid-beta (Aβ) senile plaques, amyloid angiopathy, and tau protein neurofibrillary tangles are pathological hallmarks of Alzheimer's Disease (AD). However, few studies have sought to characterize Aβ and tau lesions in the basal ganglia and midbrain of AD affected patients or correlated the pathologic characteristics of these regions with AD severity (as defined by Braak staging). Basal ganglia and midbrain sections of 2 control cases and 21 AD cases (at various Braak stages) from the UCLA ADRC tissue bank were studied. Aβ and tau deposition were characterized within midbrain and basal ganglia structures by immunostaining paraffin sections of these structures. Severe tau neurofibrillary tangle involvement in the caudate, putamen, 3rd nerve nucleus, and coliculli was most typically observed in the neocortical Braak stages (V& VI), while less severe tau involvement was associated with limbic Braak stages (III & IV). Subjects at various Braak stages showed moderate to prominent Aβ plaque deposition in the caudate, with two cases of very prominent deposition occurring at Braak stage VI. Modest Aβ plaque involvement was observed in the 3rd nerve nuclei and colliculi, while only meager involvement was observed in the substatia nigra. Aβ angiopathy was not observed in the basal ganglia and midbrain sections of AD affected individuals. Our results suggest that the progression AD pathology includes the appearance of Aβ plaques and the Braak stage-related appearance of tau-immunoreactive neurofibrillary tangles in the basal ganglia (particularly within the caudate and putamen) and midbrain (particularly within the 3rd nerve nucleus, the substantia nigra, and the colliculi).

A120

Stroke Risk in Mild Cognitively Impaired Patients.

S. N. Urban,[1] A. Jak, Ph.D.[2] *1. Ohio University College of Osteopathic Medicine, Athens, OH; 2. Psychiatry, UCSD, La Jolla, CA.*

Supported By: Acknowledgements: This work was supported, in part, by the National Institute of Aging grant T35AG026757 and the Sam and Rose Stein Institute for Research on Aging at the University of California, San Diego.

Objective: To investigate if patients with mild cognitive impairment (MCI), a transitional stage of dementia, have increased stroke risk, when compared to normal individuals, to determine if increased stroke risk contributes to incident dementia among individuals with MCI. We further sought to determine if stroke risk was related to decreased neuropsychological test scores in those with MCI.

Methods: 42 non-demented individuals from a community based, longitudinal study of normal aging underwent comprehensive neuropsychological testing, structural neuroimaging, and genotyping for the epsilon 4 allele of apolipoprotein, and received the Framingham Stroke Risk Profile (FSRP). Patients with history of stroke or transient ischemic attack were excluded. Via comprehensive neuropsychological criteria, 14 of these individuals were identified as MCI (either amnestic or non-amnestic) and 28 as cognitively normal. Participants were divided into high and low stroke risk groups based on a mean split on the FSRP.

Results: 75% of low stroke risk participants are categorized as cognitively normal whereas only 46% of those with high risk FSRP are cognitively normal ($\chi2 = 3.57$, $p=.06$). 92% of those with the lowest risk (low FSRP and no APOE 4) are normal cognitively, 57% of those with medium risk (either high FSRP or presence of APOE 4, but not both) are normal, but only 20% of those at highest risk (both high FSRP and presence of APOE 4) are normal($\chi2 = 9.16$, $p=.01$). Within the MCI group, higher stroke risk is related to lower performance on WMS-R Visual Reproduction ($r=-.85$, $p=.001$), while in the cognitively normal group, higher FSRP percent stroke risk is related to lower category fluency ($r= -.42$, $p=.032$).

Discussion: Those with higher stroke risk are more likely to have MCI than those with lower stroke risk. Genetic and stroke risk factors combine to produce even higher likelihood of diagnosis of MCI. These risk factors seem to differentially impact cognition dependent on diagnostic group. Limitations of the study include increased age in the higher stroke risk group, the small sample size, and the need to

combine those with amnestic and non-amnestic MCI into one group due to sample size and power considerations.

A121

Wrist actigraphy to assess disturbances of sleep and motor behavioural abnormalities in old patients with dementia: a preliminary study.

S. Pariel, C. Oasi, E. Ligier—Guesdon, M. Soltani, J. Belmin.
Geriatric ward and University UMPC-Paris 6, Charles Foix Hospital-APHP, IVRY sur Seine, France.

Background: Behavioural disturbances and especially sleep disturbances are a major concern for the management and care of patients with Alzheimer's disease or other type of dementia. Quantitative assessment is difficult and imprecise because classical tools are only based on questions to caregivers.

Aim: Investigate wrist actigraphy to study disturbances of sleep and motor behavioural abnormalities in old patients of a geriatric hospital ward.

Methods: Transversal study of consecutive patients of intermediate-care and long term-care units. Patients had several measurements: wrist actigraphy (Vivago, IST, Finland) during 7 consecutive days, Mini Mental Status Examination (MMSE), Neuropsychiatric inventory (NPI). Diagnostic of dementia has been examined using DSM IV criteria. Analysis of actigraphy records allowed calculation of total sleep duration (TSD), number of sleep periods (NSP), and motor activity averaged by 3-hour periods (3h-MA).

Results: The study was done in 38 patients (30 females and 8 men), 82.6 +/- 6.9 yrs old, comprising 22 patients with dementia. As compared to other patients, those with motor disturbance on NPI scale had significant decrease in TSD, increase in NSP and changes in 3h-MA profile. In addition, we found a significant correlation between MMSE score and NSP, the latter been greater for the lowest MMSE score. TSD was significantly correlated to day 3h-MA, patients with important day motor activity having the lowest TSD.

Conclusion: This exploratory study shows that wrist actigraphy can be used in elderly patient, including those with dementia and behavioural disturbances. Several actigraphy parameters were related to behavioural problems. Actigraphy is an interesting tool for objective assessment of sleep and motor disturbances in psychogeriatrics.

A122

Expression Profile of Rho/Rho-Kinase in Human Glaucoma and Normal Ocular Tissues.

B. Goldhagen,[1] V. Rao.[2] *1. School of Medicine, Duke University, Durham, NC; 2. Department of Ophthalmology, Duke University, Durham, NC.*

Supported By: American Federation for Aging Research (AFAR) - Medical Student Training in Aging Research (MSTAR) Program; Research to Prevent Blindness (RPB)

Rho GTPase is a small G-protein that is involved in the regulation of many cellular activities including contraction, cytoskeleton organization, cell morphology, migration, and adhesive interactions. Rho and its downstream protein kinase effectors ROCK1 and ROCK2 play a critical role in the regulation of aqueous humor ocular outflow, and inhibition of these proteins has been demonstrated to decrease intraocular pressure. Further, ROCK inhibitors have recently been considered as a novel drug class for use in the treatment of glaucoma, and human clinical trials of these inhibitors are currently in progress. However, the regulation of Rho/Rho-kinase pathway in the aqueous humor outflow pathway, especially its expression status in human glaucoma patients, is not yet understood. Therefore, to explore whether changes in the expression profile of Rho/Rho-kinase is associated with glaucoma pathophysiology in humans, we evaluated the expression profile of Rho, ROCK1, and ROCK2 in human glaucoma and age-matched control eyes through immunohistochemistry using the paraffin-embedded ocular specimens. As part of this study, we also examined the expression profile of Rho/Rho-kinase in retina, cornea, and optic nerve head since these molecules are recognized to participate in wound healing, cell survival, and membrane remodeling. This study reveals these proteins' distribution in various ocular tissues including: ciliary body, conjunctiva, corneal endothelium and epithelium, lamina cribrosa, lens, trabecular meshwork with sparing in the scleral spur, iris sphincter muscle, optic nerve, retina, and Schlemm's canal. Importantly, our data reveal different expression profiles of Rho/Rho-kinase in different ocular tissues. The noted similarities and differences between the distributions of these proteins might help us better understand the abnormal regulation of the Rho/Rho-kinase pathway in the pathophysiology of glaucoma and may impact drug selection in its management.

A123

Exploring the utility of serum markers of matrix breakdown as a measure of intervertebral disc disease activity.

G. Sowa,[1,2] E. Westrick,[2] A. Rajasekhar,[1,2] B. Woods,[2] S. Leckie,[2] P. Coelho,[1,2] N. Vo,[2] R. Studer,[3,2] J. Kang.[2] *1. Physical Medicine and Rehabilitation, University of Pittsburgh, Pittsburgh, PA; 2. Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA; 3. VAHS, Pittsburgh, PA.*

Supported By: This work was supported by The Physiatric Association of Spine, Sports, and Occupational Rehabilitation, and Rehabilitation Research Experience for Medical Students program of the Association of Academic Physiatrists.

Purpose: Intervertebral disc degeneration, as assessed by imaging studies, is ubiquitous among aging patients. Nevertheless, interventions are frequently planned based on imaging studies, likely resulting in unnecessary procedures and associated morbidity. Because serum levels of matrix breakdown products reflect disease activity, evaluation of biomarkers has potential to provide information beyond the changes observable on imaging studies. We evaluated serum biomarkers of matrix turnover in an animal model of disc degeneration.

Methods: Eight New Zealand White Rabbits underwent disc degeneration via annular stab technique (as previously reported), and 8 animals served as controls. Serum samples and MRIs were obtained immediately prior to surgery, and after 3, 6, and 12 weeks. Five animals also underwent sham surgery to assess the contribution of the surgical approach to the serum biomarker profile. ELISA assays were performed to assess the amount of collagen II breakdown product (CTX-II) and aggrecan biosynthesis marker (CS846). MRI of the lumbar spine was obtained using a 3T magnet and MRI index was calculated as the product of disc area and MRI signal intensity.

Results: The stab model recreated disc degeneration, with the stab group demonstrating a 35% decrease in MRI index while control animals demonstrated only 16% decrease. Both groups (stabbed and control) showed increased CTX-II levels over time with stab group concentration changing more than control group ($p<.001$). Sham animals showed no change in CTX-II over time compared to control. Changes in CS846 showed no statistically significant difference between control, sham, or stabbed animals.

Discussion: Changes in the serum levels of CTX-II, reflecting collagen turnover, were observed in our animal model of disc degeneration compared to controls. These results suggest that novel markers of disease activity may have utility in assessing disc degeneration. Future studies will examine these changes in human disc disease.

A124

The relationship between body mass index and mammography use among older women in Latin American and Caribbean cities.

S. Miller,[1] C. A. Reyes-Ortiz.[2] *1. Texas College of Osteopathic Medicine, University of North Texas Health Science Center, Fort Worth, TX; 2. Social Behavioral Sciences, School of Public Health, University of North Texas Health Science Center, Fort Worth, TX.*

Background: Body mass index (BMI) may influence breast cancer screening rates. However, there are no data on how BMI affects breast cancer screening utilization among older Latinas. The objective of this study was to examine the relationship between BMI and mammography use among Latin American and Caribbean older women.

Methods: A sample of 5,222 women aged 60 and older from the first interview of Health, Well-Being and Aging in Latin America and the Caribbean Study (SABE), in six cities (Bridgetown, Havana, Mexico, Montevideo, Santiago, and Sao Paulo). Outcome was reporting a mammogram within the last 2 years. Body mass index (weight and height measured at interview; kg/m2) was categorized as underweight (<18.5), normal weight (18.5-24.9), overweight (25.0-29.9), and obesity classes I (30-34.9), II (35-39.9) and III (40+). Other independent variables were sociodemographics, medical conditions, and functional status.

Results: In the combined sample, the prevalence of mammography use across BMI categories is shown in Table (p <.0001). In multivariate analyses, women who were underweight or with extreme obesity (class III) were less likely (OR=0.51, 95% CI 0.32-0.80; and OR= 0.57, 95% CI 0.37-0.89; respectively) to have a mammogram compared with women who had normal weight. Other independent predictors for having a mammogram were younger age, being married, higher education, having history of cancer and better functional status. Some variations across cities were found.

Conclusion: Having underweight or obesity class III were associated with lower mammography use rates, suggesting that extreme measures of BMI may be barriers to screening mammography among Latin American and Caribbean older women.

Body mass index	<18.5	18.5-24.9	25.0-29.9	30.0-34.9	35.0-39.9	40+
Prevalence (%) of mammography	10.3	20.9	23.9	22.4	23.3	15.8

A125

Suboptimal Immune Response to Influenza Vaccine in Community-Dwelling Older Adults.

R. Chi,[1,2] S. Haight,[3] K. Neuzil.[1,4] *1. University of Washington, Seattle, WA; 2. VA Puget Sound Health Care System, Seattle, WA; 3. Saint Louis University School of Medicine, Saint Louis, MO; 4. PATH, Seattle, WA.*

Supported By: AFAR MSTAR, VA Career Development Award, USAID HealthTech Program

Purpose: Many older adults remain susceptible to influenza infection and complications despite yearly vaccination. We compared clinical characteristics and local skin reaction after intradermal injection of influenza vaccine (or "flu shot skin test" as a marker of delayed-type hypersensitivity) in subjects aged ≥65 years who did or did not respond to influenza vaccine.

Methods: In this secondary analysis of a completed randomized clinical trial comparing intradermal (ID) and standard intramuscular (IM) injections of influenza vaccine, subjects received partial (60% dose) or full dose of the 2007-08 influenza vaccine by ID or IM routes. Those receiving a partial dose were re-vaccinated one month later with full dose IM vaccine. IgG antibody titers before and after standard IM vaccination were measured. Non-responders were defined as those failing to achieve 1:40 hemaglutination (HAI) inhibition titers to at least 2 of 3 vaccine antigens.

Results: Ninety-two (37%) subjects were nonresponders (Table). There was no statistically significant difference in age, sex, chronic medical conditions, or receipt of previous year vaccination between responders and nonresponders. Pre-vaccination HAI titers of ≥1:10 are highly predictive of response to influenza vaccine. Skin induration after ID injection may predict vaccine response (OR=2.25, 95% CI 0.94-5.40), after adjustments for age, sex, race, presence of chronic condition, smoking, number of medications, previous year influenza vaccination, and baseline serologic status.

Conclusion: Inadequate immune response to influenza vaccine is common among older adults. Pre-vaccination serologic status and positive skin test to influenza vaccine antigens may be useful in identifying elderly patients at risk for influenza vaccine failure.

Characteristic	Non-Responder	Responder	P-value
Age, years	75.7	74.2	0.16
Chronic Condition	55.4%	65.2%	0.13
Lung Disease	9.8%	9.6%	0.97
Heart Disease	28.3%	28.9%	0.92
Diabetes	14.1%	20.5%	0.21
Previous year flu shot	95.7%	94.9%	0.78
Pre-vaccination HAI ≥1:10 to 2-3/3 vaccine antigens	47.8%	88.5%	<0.001
Measurable swelling at 48-72 hours after ID vaccination	31.9%	48.7%	0.07

A126

Examining the Cultural Competency of Activities Programming in Nursing Homes.

D. L. Boyd-Seale. *College of Nursing, University of Illinois at Chicago, Chicago, IL.*

Supported By: Debra Boyd-Seale

Aim: Activities programming within nursing homes significantly affects the quality of life of residents; yet, little is known about the cultural competency of activities directors (AD) and their programming. This presentation will present the findings of an exploratory study examining the cultural competency of activities programming in a large urban Midwestern county.

Methods: The Cultural Competency Assessment (CCA) Survey measured the cultural competency level of 62 AD. Examination of the master activities calendars revealed the cultural diversity of scheduled activities within facilities. Correlational statistics examined the relationship between measured cultural competency levels and cultural diversity of scheduled activities.

Results: The total number residents (N=9,711) represented by the sample was diverse with 45% identified as African American, 48% Caucasian, 5% Hispanic, 2% Asian, and .5% Native American/Alaskan Natives. The CCA scores were delineated into four categories, culturally diverse, culturally aware, culturally sensitive, and culturally competent. Approximately 63% (n=39) of the AD reported previous cultural competency training, and 61% (n=38) rated themselves as very culturally competent. The mean CCA score was 18.11±2.77 (N=62), indicating, in general, the AD were culturally sensitive. St. Patrick's Day was the most frequently celebrated culturally based observance with 89% (n=55) of facilities acknowledging the day. The mean number (N=62) of culturally based holidays observed was 3.56± 1.47. The correlation between CCA scores and scheduled activities reflecting culturally based observances was weak r=.22, and trended toward significance p=.09.

Conclusions: The cultural competency levels of AD may influence the cultural diversity of activities programming within nursing homes. More research is needed to determine the salience of culture and culturally based holidays from the residents' perspective.

Implications for Practice: Given the increasing diversity of resident populations, AD must consider the culture of residents when planning programming. AD are in the unique position of influencing

the quality of life of residents. Therefore, to ensure the provision of resident focused services, AD must be able to competently address the residents' cultural needs.

A127

Active Green Environments: Developing Environmental Green Spaces To Promote Physical Activity In Seniors.

L. D. Malavasi,[1] K. Kim,[1] C. Park,[1] L. Sheppard,[1] A. Schwingel,[1] C. Rolfe,[1] H. Wilkinson,[1] P. Martin,[2] W. Chodzko-Zajko.[1] *1. Kinesology and Community Health, University of Illinois at Urbana-Champaign, Urbana, IL; 2. Clark-Lindsey Village, Urbana, IL.*

Supported By: The Retirement Research Foundation

University of Illinois at Urbana-Champaign

Clark-Lindsey Village

The National Blueprint: Increasing Physical Activity Among Adults Aged 50 and Older serves as a guide for organizations, associations and agencies to support their efforts related to increasing physical activity among America's aging population. The Blueprint outlines strategies that will lead to increased physical activity among older adults. One of the key barriers to physical activity identified in the Blueprint is the poor design of neighborhoods and environments that actively discourages older adults from participating in physical activity. The purpose of this study is to examine how older adults respond to alterations to the environment that are designed to promote physically active choices. As part of methods we used a qualitative research design to evaluate the subjective reactions and responses of older adults to changes to the outdoor space surrounding a long term care retirement community in which they live. A combination of questionnaires and focus groups were used to explore in depth the perceptions and reactions of residents to a purposeful redesign of their community. This approach led to the identification of distinct cohorts of seniors who were supportive and resistant to the changes induced by the New AGE project. As results, several distinct cohorts of older adults were identified; (1) individuals who were highly positive about the redesigned landscape, (2) individuals who were much less supportive of the New AGE redevlopment; as well as (3) regular users of the New AGE, and (4) non-users of the outdoor space. Similarities and differences in reaction to the environmental change between the various cohorts were identified. In conclusion, the changes to the built environment have the potential to be viewed both more and less positively. Older adults differ considerably with respect to how they react to alterations to the environmental space that surrounds them. It is important to carefully study the preferences and opinions of older persons prior to embarking on any strategy to redesign the environment. Engaging older adults as participants in all stages of the design, build, and implementation of environmental change is essential.

A128

Prognostic Index & The Reality of Code Status.

P. Chand,[1,2] I. B. Coutin.[1] *1. Continuing Care Services, Kaiser Permanente, Fontana Medical Center, Fontana, CA; 2. Gerontology, Geriatrics, Palliative medicine, University of Alabama at Birmingham (UAB), Birmingham, AL.*

Introduction/Objective: Code status is a medical decision to provide level of care desired by the patient/family. Prognostic Index (PI)has been validated as an important tool for assessing the risk of mortality within one year after hospitalization. Our department monitored all patients sent out from a regional hospital center caring for nearly 400,000 patients to SNF/NH/Sub Acute institutions in 2008 regarding their code status as well as their probability of dying within one year of hospitalization.

Design/Methodology: The Prognostic Index is a tool initially reported in JAMA, in June, 2001. It encompases risk factors such as demographic characteristics, activities of daily living (ADL)dependency, comorbid conditions, and laboratory measurements. Given 6 independent risk factos for mortality, a simple point system was used to stratify medical patients over 70 years of age according to 1-year mortality after hospitalization. Our department used this prediction model and compared the probability of 1 year post hospital mortality to the patient's code status for all 324 patients sent from the hospital to either a SNF, NH, or sub acute facility. Finally, we noted the actual expiration data on same individuals.

Results: Of 324 patients sent from a regional medical center for continued institutional care, 320 patients (99%)were reviewed regarding prognostication and code status. Of this group, 123 patients achieved a PI score of at least 7, indicating a 68% chance of death within the subsequent year after hospitalization. Eighty (80) of the 123 patients (65%) requested Full Code status at the time of hospital transfer.

Conclusion/Discussion: End of life decisions are rarely easy, either for the patient, the family or for the medical instituion caring for them. Our study looked at the relation between actual desired code status in the face of the prognostic outcome and found that at least two thirds of patients with a poor likelihood of life expectancy continued to request all efforts to be made including CPR, ventilation, hospitalization, tube feeding, transfusions and IV therapies. It would seem to us to be prudent in reviewing the likelihood of survival with our patients much earlier in the continuum of health care so that we might better prepare the patient and family for anticipated outcomes.

A129

The impact of yoga on balance and fear of falling.

A. A. Schmid,[1] T. Nichols,[2] D. Koceja,[2] M. Van Puymbroeck .[3] *1. HSR&D, Roudebush VAMC, Indianapolis, FL; 2. Department of Kinesiology, Indiana University, Bloomington, IN; 3. Department of Recreation, Park, & Tourism Studies, Indiana University, Bloomington, IN.*

Supported By: IU Bloomington, Faculty Research Support Program: Influence of Yoga on Fall Risk Factors in Older Adults

Purpose: Fear of falling is common among older adults and can be associated with many negative physical, functional, and psychological consequences. Fear of falling may or may not be associated with falls and is associated with decreased static and dynamic balance. Yoga has been demonstrated to improve balance, lower body strength, and flexibility. The purpose of this pilot study was to examine whether yoga was related to improved fear of falling and balance in an older adult population.

Methods: Fourteen older adults with fear of falling were recruited as a convenience sample from a local retirement center and enrolled in a twice weekly, 12-week Hatha yoga program. The yoga program was taught by a Registered Yoga Therapist. While all participants endorsed a fear of falling, we assessed fear of falling with the University of Illinois Fear of Falling measure. We assessed balance with the Berg Balance Scale. A score <36 indicates a high fall risk. Therefore, we chose to delineate the scale to assess static and dynamic balance with the Berg (dynamic included transfers, reaching, turning, stepping, etc). We used paired t-tests to compare the differences in mean scores of fear of falling and balance.

Results: The mean age was 78 years old and 5 (33%) participants had sustained a fall prior to the intervention. All but one participant had a Berg score of >36. Change in static balance approached significance ($p=0.08$) but fear of falling and dynamic balance were not statistically significant when comparing baseline and 12 week scores. However, there was a trend toward improvement; 6% in fear of falling and 3% in static balance. No adverse events occurred during the program.

Conclusion: While we have a limited sample size, we did find some improvement for both fear of falling and static balance scores

with the yoga intervention. Interestingly, only 5 of our participants endorsed a prior fall, but 100% indicated a fear of falling, perhaps the prior fall indicates a different cohort with different balance or fear of falling issues.

A130

The Medical and Occupational Well-Being of Musicians After Breast Cancer.

S. Schmalenberger,[2] J. Giebenhain,[2] L. Starr,[1] C. E. Gessert.[1] *1. SMDC Health System, Duluth, MN; 2. University of St. Thomas, St. Paul, MN.*

Supported By: Miller Dwan Foundation

Duluth Clinic Foundation

Purpose: To describe and understand the lived experience of breast cancer therapy and rehabilitation in a cohort of older women who have a physically demanding occupation.

Methods: Quantitative and qualitative data was collected from a national cohort of musician/breast cancer survivors. In Phase One of the study, musicians who were breast cancer survivors were recruited nationwide to complete a web-based survey; quantitative methods were used to develop a description and profile of this cohort. In Phase Two, subjects from Phase One were interviewed by telephone using a semi-structure interview guide; transcripts were analyzed using quantitative research methods.

Results: The Phase One survey was completed by 170 subjects, 86 of whom met all study inclusion and exclusion criteria. Eighty-nine percent of subjects were between the ages of 45 and 75. Many Phase One survey subjects reported ongoing physical symptoms 1 to 5 years after breast cancer therapy, including hot flashes (41%), numbness (32%), changes in cognition (31%), contractures/tightness of the skin (21%), pain (20%) and fatigue (18%). Over half of the subjects volunteered for Phase Two interviews. Analysis of the 30 interview transcripts revealed that subjects were unprepared for the long-term physical impact of their therapy, that they initially felt isolated and unsupported in their quest for support, and that many found that their reconnection with their music was transformative in their recovery.

Conclusions: Breast cancer has a profound impact on women with physically demanding occupations, and in most cases the impact endures for many years beyond the period of formal treatment and rehabilitation. Many of these breast cancer patients found the health care system to be only partially responsive to their experiences and needs. In particular, subjects reported that many of the physical problems that they encountered had not been addressed prior to therapy, nor was follow up continued long enough to address rehabilitation issues that affected their capacity to perform as musicians. The care of breast cancer should be reconceived to include longer-term follow up.

A131

The effect of pre-op IL-6 level on outcomes following cardiac surgery in the elderly.

A. R. Huang,[1] I. Van der Spuy,[2] S. Scott,[3] N. E. Mayo.[1,3] *1. Medicine, McGill University Health Centre, Montreal, QC, Canada; 2. Physical and occupational therapy, McGill University, Montreal, QC, Canada; 3. Clinical Epidemiology, McGill University Health Centre, Montreal, QC, Canada.*

Supported By: McGill University Health Centre Research Institute

AIM: Cardiac surgery is in high demand and not all older patients recover as quickly or completely following their operation. A pilot study was conducted to explore factors involved in reserve capacity that may be predictive of functional recovery post-surgery. METHODS: Forty patients older than 65-years undergoing cardiac surgery (coronary artery bypass graft and/or valve procedures) were assessed within 14-days pre-op and then at 6 months post-surgery. The primary outcome was change in the 6-min walk test (6MWT) between the two observations. Some of the factors studied included clinical assessments (Parsonnet cardiac surgery risk assessment, Mini-nutritional assessment, MMSE, pain), physical and biochemical measures (BMI, IL-6, serum albumen, hemoglobin); and emotional factors (Euroquol-5D, SF-36, Hospital Anxiety Depression Scale). RESULTS: There were 2 deaths and 1 drop-out. Study population: age=73.6(±5.6)y, women=32.5%, BMI=27.3(±5.31), pre-op gait speed=1.04(±0.27)m/s; 47.5% underwent bypass only and 32.5% valve procedures only. Patients fell into three functional recovery outcomes, those who had excellent 17/40(42.5%) (change >80m), intermediate 8/40(20%) (change 20-80m) and poor 15/40(37.5%) (change <20m) 6MWT results at 6-months. No associations were found among the factors studied, after data from two outliers were removed. A complete set of data including pre-op IL-6 levels were available on 33 patients. Patients were grouped into abnormal (≥ 6pg/ml) vs. normal level of IL-6 pre-op and the Student's t-test applied. No correlation was found between abnormal pre-op IL-6 level and the following at 6 months: 6MWT, gait speed, HADS-anxiety, HADS-depression and EQ5D-Utility scores. However there was an association with the EQ5D-Visual analog scale (QOL measure). The EQ5D-VAS was (mean, 95%CI) 80.7 (75.8-85.5) vs. 66.9 (56.2-77.6) p=0.08.

CONCLUSIONS: The findings were surprising. None of the potential markers of frailty were found to be associated with outcomes but the sample size of the pilot study limits this conclusion. Despite the sample size, the data clearly show that the presence of a high pre-op IL-6 level does not affect what the person can do but how the person feels at 6 months post cardiac surgery. This observation supports the value of patient reported outcomes.

A132

Radical Cystectomy: High Risk of Delirium in Older Patients.

C. Reichard, G. Bales, G. Steinberg, C. DuBeau. *The University of Chicago, Chicago, IL.*

Supported By: The Hartford Foundation/ AGS Geriatrics for Specialty Residents grant program, Short Term Aging-related Research Program Grant No. 1T35AG028785-01A1

Purpose: Bladder cancer is the fourth most common cancer in older men, and incidence increases with age. Treatment by radical cystectomy is increasingly prevalent, especially in older patients. Radical cystectomy patients may have a high risk of delirium, as bladder cancer and delirium share the risk factors of age and smoking. Although delirium is well described following vascular and orthopedic procedures, there is no data on its incidence after urologic surgery. In this ongoing study we aim to determine the incidence of and potential risk factors for delirium following radical cystectomy.

Methods: We prospectively enrolled patients aged ≥ 65 undergoing radical cystectomy at our institution. We excluded patients with known dementia or taking cholinesterase inhibitors, and non-English speakers. Baseline assessment included cognition (MiniMental [MMSE]), function (Katz Activities of Daily Living [ADL]), and clinical data from patient interview and chart review. Trained interviewers used the Confusion Assessment Method (CAM) to assess delirium on postoperative days (POD) 1-3, 5, and 7.

Results: To date (July – November 2008), we have collected data on 22 patients (mean age 74 [67-85], 73% men, 73% white). All but 2 were smokers (mean pack years 31 [3-105]); 46% had T2 cancers; 64% had hypertension, 23% diabetes, 27% cardiovascular disease; mean pre-op MMSE was 26 (21-30), and 38% had impaired ADLs. Delirium occurred in 5 (23%) patients, 2 on POD 1 and the rest on PODs 5-7; duration ranged 1-5 days, and 2/5 patients were still delirious within 2 days of discharge. When comparing pre-op MMSE with the lowest post-op MMSE, the mean decrease was 6 points with delirium and 1.6 without. Delirium was more common among those living alone (p=0.06).

Conclusions: This study is the first description of the incidence of CAM-assessed delirium following urologic surgery. The incidence of delirium following radical cystectomy rivaled that of orthopedic and vascular procedures. Of concern, delirium could occur late (> POD 5) and persist up to discharge, and was associated with a marked decrease in MMSE. The high incidence of delirium in older patients may contribute to mortality following radical cystectomy. Our results emphasize the need for urologists to screen radical cystectomy patients for delirium and develop prediction and prevention programs. Our ongoing work will help identify risk factors to better recognize patients at risk

A133

Mortality Differences between Men and Women over the age of 65 after Sustaining a Hip Fracture.

J. Y. Lin,[1,2] A. Chopera,[2] S. Pomerantz,[2] A. Stephenson.[2] *1. Internal Medicine/Geriatric Medicine, Lake Erie College of Osteopathic Medicine, Erie, PA; 2. Geriatrics Medicine, UMDNJ-SOM, Stratford, NJ.*

Supported By: UMDNJ-SOM

The aim of the study is to assess the degree to which gender adds to the risk of mortality above and beyond the predictors of mortality identified in previous studies.

This is a retrospective chart review of patients age 65 or older who were hospitalized for hip fracture from 2003-2004. Data were collected on demographics (age, sex, living situation), co-morbidities (dementia, chronic heart disease, chronic pulmonary disease, diabetes, hypertension, chronic renal disease, history of cerebral vascular disease, history of fracture), presence of infection, and two year post surgical mortality as documented through the Social Security Administration's Death Master Index (DMF).

A total of 124 patients were included in this analysis; 31% were male and 69% were female. The average age was 81 (SD= 6.2). 72% of the patients were admitted to the hospital from home, while the remaining 28% were admitted from institutions (assisted living, nursing home). The relationship between co-morbidities and mortality were examined using chi square. Of the co-morbidities, dementia, history of MI, congestive heart failure, chronic renal disease, and the presence of infections(UTI, pneumonia, infected skin ulcers, bacterimeia, other viral infection) were statistically significantly ($p<.05$) related to mortality. Using a t-test for analysis, there was a statistically significant difference between those who died and those who did not die on age and number of co-morbidities. A series of logistic regression models were created using two-year mortality as the dependent measure and the above independent variables. In the refined model, age (dichotomized at 79/80; odds = 3.9), presence of infection (odds=2.8), and sex (odds=2.9) remained statistically significant and were independent predictors of two year mortality.

The findings support the literature that increased age, being a man, and presence of infections is related to a higher risk of two year mortality after a hip fracture. In previous studies the mortality rates were related to the co-morbidities. In this study, co-morbidities did not have a significant contribution to two year mortality rate. These findings suggest that men have an increased risk of two year mortality above and beyond the co-morbidities that were identified in previous studies.

A134

Acetabular anteversion does not predict patterns of hip fracture.

M. Y. Kamath, N. W. Coleman, S. C. Mears. *Orthopaedic Surgery, Johns Hopkins Bayview Medical Center, Baltimore, MD.*

Purpose of the Study: Intertrochanteric and femoral neck fracture patterns account for approximately 90% of hip fractures in elderly patients. Anatomy of the acetabulum and femur may play a role in determining fracture type. It has been theorized that a fall resulting in external rotation of the hip may cause the posterior aspect of the neck of the femur to impinge against the posterior acetabulum. If the acetabulum is more anteverted, the impaction of the femoral neck on the acetabulum may result in a femoral neck fracture. If the acetabulum is less anteverted, the femoral neck would not hit the acetabulum and an intertrochanteric fracture would result. The purpose of this study is to determine if acetabular anteversion measured on computerized tomographic (CT) scans correlates with fracture type.

Methods: Between January 1, 1999 and December 31, 2007, 135 patients age 65 or older with either a femoral neck or an intertrochanteric hip fracture were found to have an abdominal or pelvic CT scan. After 2003, all films were digital. Acetabular anteversion was measured with a goniometer either manually or digitally.

Results: Measurements were made on 62 patients with femoral neck fractures (mean age 80.6 years) and 73 patients with intertrochanteric fractures (mean age 81.3 years). Mean acetabular anteversion was 19.9 degrees (range 10.4 to 37.4) in the femoral neck fracture group and 21.4 degrees (range 7.7 to 30.3) in the intertrochanteric fracture group. Linear regression analysis showed no association between acetabular anteversion and fracture type (OR: 1.06, 95% CI: .983-1.14).

Conclusion: Patients with femoral neck fractures did not have more anteversion than patients with intertrochanteric fractures. We reject the hypothesis that impingement of the proximal femur on the acetabulum leads to femoral neck fracture. Further work is needed to determine the mechanism of femoral neck and intertrochanteric hip fractures.

A135

OUTCOMES OF PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE IN BPH PATIENTS WITH INTRAVESICAL PROSTATIC MIDDLE LOBES.

N. Y. Lee, B. B. Choi. *Urology, Weill-Cornell Medical College, New York, NY.*

Supported By: AFAR/MSTAR

The National Institute on Aging

The John A. Hartford Foundation

Introduction and Objective: Affecting over 80% of men over the age of 81, BPH can have serious adverse affects in the quality of life for the aging population. Various surgical treatment modalities have been advanced in recent years. Photoselective vaporization of the prostate (PVP) via the GreenLight™ laser system has emerged as a safe, effective, and minimally invasive debulking procedure for treating bladder outlet obstruction. This series reports on outcomes of GreenLight™ laser therapy specifically in patients with significant intravesical prostatic middle lobe growth which often poses a significant challenge to endoscopic surgery.

Methods: Between 1/6/06 and 5/22/08, 51 consecutive patients with symptomatic BOO and significant middle lobe enlargement underwent PVP. 3 (5.88%) presented with hydronephrosis, and 21 (41.18%) presented with urinary retention. Pre and post-operative data was analyzed. Mean follow up time was 376.7 days. Intraoperative and postoperative complications were recorded.

Results: Mean patient age at the time of surgery was 68.69 ± 8.88 years. Mean values are reported for: lasing time (61.51 ± 29.08 min), energy used (219.06 ±83.98 kJ), length of hospital stay (7.55 ± 5.88 hrs), and length of catheterization (16.75 ± 12.80 hrs). There were no severe intraoperative complications, such as myocardial infarction, transfusion, TUR syndrome, conversion to TURP, or capsular perforation. The following mean changes from baseline were statistically

significant ($p < .001$): prostate volume (62.7 to 31.7 cc), post void residual (189.4 to 15.1 cc), Qmax (5.9 to 13.7 cc/sec), IPSS (21.9 to 7.4), and QoL (4.65 to 1.5). Postoperative complications were as follows: transient retention (N=1, 2%), dysuria lasting over 2 weeks (21, 41%), irritative voiding symptoms, such as urgency and frequency, lasting between 2 and 12 weeks (18, 35%), and irritative voiding symptoms lasting over a year after surgery (6, 12%). No delayed bleeding, retention, urethral strictures, and bladder neck strictures were observed.

Conclusions: Results from this series demonstrate that PVP using the GreenLight™ laser is an effective and safe treatment of outlet obstruction in patients with enlarged prostatic middle lobes.

A136

Descriptive Survey of 5-Year Survival of Older People Undergoing Colonoscopy.

S. A. Bruce, S. Burns. *Medicine for the Elderly, Conquest Hospital, St Leonards-on-Sea, United Kingdom.*

Introduction: Colonoscopy has a high diagnostic yield in symptomatic older people (Duncan JE et al. Dis Colon Rectum 2006;49:646). It is a safe procedure but the incidence of perforation increases with age (Gatto NM et al. J Natl Cancer Inst 2003;95:230). Its longer term effectiveness has also been questioned in a recent study showing that comorbidity was a stronger predictor of outcome than indication for colonoscopy or its findings (Kahi CJ et al. Gastrointest Endosc 2007;66:544). We have previously reported procedure tolerability and 30-day morbidity in a cohort of patients over 75 years undergoing colonoscopy (Gentles H et al. Age Ageing 2002;31:Suppl2,41(abstr)). We now report preliminary 5-year follow-up data.

Methods: Retrospective cohort study of people aged over 75 years who underwent colonoscopy during 2000-2001, by one colonoscopist* in a UK DGH. Data was obtained using the local clinical information system. Comorbidity was assessed using the Charlson index (CI) which was also used by Kahi et al. Ethical approval was obtained for the original study and this follow-up.

Discussion: Our cohort differed from that of Kahi et al. The majority were female and either had lower gastro-intestinal symptoms or anaemia whereas in Kahi et al's study the majority were men and 56% were undergoing screening or polyp surveillance. As would be expected, the diagnostic yield was higher in our group in line with Duncan et al. Those with cancer had lower 5-year survival (36.4%) and higher CI (2.7) as Kahi et al. found (37.5% and 2.6 respectively). Our cohort appeared to have less comorbidity overall though assessing this retrospectively may have led to some underestimation. We also have concerns that the Charlson index may not be ideal for scoring comorbidity in older subjects. Despite these differences we found a slightly higher mortality at 5 years. We agree with Kahi et al. that their findings have implications for colonoscopy surveillance of older subjects. The fact that we found similar 5-year mortality also has implications for those with recurrent symptoms and/or anaemia who might be subject to multiple investigations.

Results

	Kahi et al. (N=404)	Present study (N=109)
Age (mean)	75-92 (79)	76-95 (83)
CI (SD)	2.7 (+/-1.8)	1.7 (+/-1.6)
Women	26%	59%
Cancer on colonoscopy	2%	11%
5-year survival	59%	51%

A137

Pre-operative pacemaker interrogation for proximal femur fractures.

A. M. Mirabella,[1] K. W. Bingham,[1] D. A. Mendelson,[1] S. L. Kates,[2] S. M. Friedman.[1] *1. Internal Medicine; Division of Geriatrics, University of Rochester, Rochester, NY; 2. Orthopaedic Surgery, University of Rochester, Rochester, NY.*

Supported By: Hartford / AGS Geriatrics for Specialty Residents award

AO Foundation

Synthes unrestricted grant

Highland Hospital, Rochester, NY

Purpose:

Proximal femur fractures are a common injury for older adults, with an estimated 350,000 occurrences in the United States yearly. Growing data suggests that operating on patients within 24 hours of presentation is ideal. Many of these patients have pacemakers for the treatment of cardiac arrhythmias. Due to the concern for perioperative pacemaker failure, some centers interrogate all pacemakers prior to surgery. Our centers do not routinely interrogate pacemakers, thus we collected data to look at outcomes for patients with and without pacemaker interrogation.

Methods:

Preoperative chest radiographs were reviewed for the presence of a pacemaker for all patients 60 years and older admitted to 2 medical centers in upstate New York for a proximal femur, native hip, non-pathological, fragility fracture. Patients with an identified pacemaker had a chart review to identify demographics, co-morbidities as defined by the Charlson Index, length of stay, time to surgery, if pacemakers were interrogated, delay in surgery due to interrogation, interventions resulting from interrogation, in-hospital mortality, and mortality due to pacemaker failure. A convenience sample of data was collected from July 1, 2007 to June 30, 2008 for one center, and from July 1, 2005 to June 30, 2008 for the other. Descriptive statistics, Chi-square, and unpaired t-tests were performed as appropriate to determine relationships between demographics and outcomes.

Results:

Average age of the subjects was 85.2 years, 65% were female, and 96% were non-Hispanic Caucasian. Average total Charlson score was 3.1. Of the 77 subjects with pacemakers, 13 were interrogated. There were no deaths due to pacemaker failure, and no interventions due to pacemaker interrogation. There was no difference between whether a pacemaker was interrogated as to age, gender, race, ethnicity, or Charlson score. Patients who had their pacemakers interrogated had, on average, a 16 hour longer time to surgery ($p=0.01$), and a 1.3 day longer length of stay ($p=0.56$) than those without interrogation.

Conclusion:

Our data showed no pacemaker failures during the perioperative period, and no interventions due to pacemaker interrogation, which suggests that pre-operative interrogation in not warranted. A larger sample is needed to confirm this conclusion.

Presidential Poster Session

Thursday, April 30
4:00 pm – 5:30 pm

B1

A Surprising Cause for a Wound in a Nursing Home Resident: An Occult Sweat Gland Carcinoma.

A. D. Talsania, M. Brennan. *Medicine, Baystate Medical Center/Tufts University School of Medicine., Springfield, MA.*

Introduction:

Cancers are primarily geriatric diseases which may present atypically in older patients. Frailty, coexisting medical and cognitive problems complicate both diagnosis and treatment. We report a case of a rare sweat gland cancer in a demented elder; it was thought just to be a non healing ulcer.

Case:

A 79 year old NH resident with dementia had a longstanding axillary ulcer with some localized pain and ongoing exudate. He underwent outpatient incision and drainage but failed to heal. Two months later, he was admitted for more aggressive debridement due to persistent discharge, positive wound cultures and an elevated white count. He had a non-healing sinus tract that measured approximately 1 x 0.35 X 5 cms. It was friable and bled easily. A chest CT showed left axillary phlegmonous changes, but no fluid collections to suggest abscess, adenopathy or chest nodules. Intraoperatively, the surgeons found a firm area inferior to the ulcer between the infected tissue and the previous surgical site and suspected a malignancy. A frozen specimen revealed a sweat gland carcinoma with involved margins. The patient was transferred to surgical oncology for wider local excision and axillary dissection. A final pathology report documented a high grade eccrine adnexal carcinoma with squamous differentiation.

Discussion:

Sweat gland carcinomas are rare, have a high metastatic potential and poor prognosis. Only roughly 200 cases of eccrine sweat gland and 38 cases of apocrine gland carcinoma exist in the world literature. Diagnosis is challenging and often delayed; they frequently present as histological surprises. These carcinomas occur primarily in adults, with a peak incidence in the fifth and sixth decades. Since the cancers are so rare, it is unclear if there is a second peak later in life, whether the presentation in elders differs or if alternative treatment strategies are needed for geriatric patients. It is possible that these cancers are more prevalent in older patients than is currently appreciated since caregivers may be slower to biopsy and debride wounds in frail elders.

Conclusion:

Geriatricians and nursing home staff need to be more aware that non-healing wounds may represent a malignancy. Due to the small number of sweat gland carcinomas reported, these patients present diagnostic and management challenges as well as opportunities for collaborative research with oncologists.

B2

"Weak in the knees": a single rare cause leading to a geriatric syndrome.

C. M. Khandelwal, H. Coward. *Center for Aging and Health, UNC Chapel Hill, Chapel Hill, NC.*

Supported By: Division of Geriatric Medicine, Center for Aging and Health; UNC at Chapel Hill.

Mrs.W was an active 88-year-old female with a history of COPD, HTN, and TAH/BSO, who presented with a complaint of falls. Mrs.W had several months of "weakness in the knees", but believed it was due to "just getting old!" The patient's medications were lisinopril, advair, and aspirin. Results of the patient's physical examination were unremarkable except for 4/5 bilateral proximal leg weakness. Labs were obtained and pertinent positive labs demonstrated: ESR 80, CRP 11 with normal labs: BMP, CBC, TSH, B12/folate, RF. The patient was placed on oral prednisone for a diagnosis of Polymyalgia Rheumatica. Within twenty-four hours, the patient experienced a dramatic improvement with her ambulation. However, within one week of steroid therapy, Mrs. W again reported progressive weakness in her lower extremities leading to more falls. The patient also developed diarrhea and had a reported episode of hypoglycia without obvious cause. The patient was sent for EMG/PNVC studies of her lower extremities which showed diffuse sensorimotor axonal neuropathy without myopathy. A paraneoplastic process was considered and therefore further serology was ordered. Pertinent findings: SPEP abnormal and ACHR-AB binding was positive, suggesting an organ-specific neurological autoimmunity. The diagnosis of a paraneoplasia was made and Mrs.W was sent for a body CT scan. An abdominal CT demonstrated a large heterogeneous mass occupying the left upper quadrant with omental "caking". The patient refused any further evaluation for the unknown mass and requested only comfort measures. Mrs. W died two months later. An autopsy revealed a peritoneal mesothelioma.

DISCUSSION: Falls among older adults are not a normal consequence of aging. They are considered a geriatric syndrome most often due to multifactorial causes. Our patient had a peritoneal mesothelioma, a rare neoplasm causing paraneoplastic manifestations including neuropathy, hypoglycemia and a wasting syndrome, all leading to the geriatric syndrome of falls. About half of reported cases of abdominal mesotheliomas do not have a history of asbestos exposure. Our patient, a lifelong nonsmoker, lived in Pittsburgh where the industries of steel mills and shipyards may have led to asbestos exposure. Paraneoplastic syndromes, though rare, need to be included in the differential diagnosis of older patients presenting with sensory loss or weakness, even with little risk factors for malignancy.

B3

Crocodile Tears: An Unusual Presentation of Amyotrophic Lateral Sclerosis.

D. J. Halpern. *Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC.*

Case: A 78 year-old female with hypertension, hyperlipidemia, and hypothyroidism presented for a new-patient evaluation with approximately one year of intermittent dysarthria. At first, she attributed the symptoms to new dentures, but the slurred speech seemed to worsen over time. She admitted that she worried a lot about speaking and at times was more tearful than usual. Her husband noticed that her outbursts of crying often seemed quite sudden in onset. He also reported that over the past six months, she had experienced occasional lapses in her short term memory. She denied swallowing difficulties, but reported that she had been yawning a lot recently, even though she did not feel particularly tired.

Physical exam revealed a well-appearing elderly female who was fully alert and oriented. Cardiac, pulmonary, and abdominal exams were normal. Neurologic exam revealed tongue fasciculations and diminished gag reflex. Cranial nerve function was otherwise normal. Patellar reflexes were abnormally brisk bilaterally. Strength was normal throughout. She scored 28/30 on the MMSE and drew a clock without difficulty.

Over the next several days, she underwent extensive diagnostic workup in order to determine the etiology of her symptoms. Basic metabolic panel, CBC, B12, folate, and RPR were all normal. An MRI of her brain was unremarkable. Doppler ultrasounds of the carotid arteries showed no blockages. An EMG revealed abnormalities in gastrocnemius and genioglossus muscles that were consistent with motor-neuron disease, confirming a diagnosis of bulbar-onset amyotrophic lateral sclerosis (ALS).

Discussion: While most cases of ALS present with weakness in the limbs, a small proportion of patients report bulbar symptoms before they experience weakness. Fewer than 25% of people with ALS present with bulbar-onset disease. These patients may experience early dysarthria and dysphagia. Difficulty swallowing saliva and other liquids can lead to drooling. Often, patients with bulbar-onset ALS will present with pseudobulbar affect, which causes exaggerated or inappropriate laughing and crying. Patients with bulbar-onset ALS usually have more rapid progression than those with limb-onset disease. However, they may respond better to riluzole, which can slow the progress of ALS in some patients.

B4

Acute poststreptococcal glomerulonephritis in an elderly patient.

E. Zilberfayn, W. Horn. *Geriatrics, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY.*

Supported By: no funders

Background: Acute poststreptococcal glomerulonephritis (PSGN) often presents atypically in older adults and a review of the medical literature identifies only a few case reports.

Case: The patient is an 82 year old female nursing home resident with a past medical history significant for diabetes, chronic kidney disease stage 2, and coronary artery disease s/p CABG who presented with shortness of breath and acute renal failure (ARF). Two weeks prior to admission, she failed treatment with oral antibiotics for cellulitis of the left lower extremity. She developed ARF and severe respiratory distress after treatment with intravenous fluid administration.

On admission she was hypoxemic, hypertensive and tachypneic. Her physical exam was remarkable for increased lethargy, rales bilaterally, and left lower extremity erythema with diffuse tenderness and nonpitting edema. Her labs were significant for hyponatremia, hyperkalemia and acidosis in the setting of acute renal failure with a creatinine clearance of 30. She had a mild leukocytosis and elevated cardiac enzymes without ECG changes. Her urine analysis showed microscopic hematuria with red blood cell casts. Her chest x-ray was consistent with pulmonary edema.

She was treated with oxygen, diuretics and vancomycin for resistant cellulitis.

PSGN was suspected and further work up revealed an ASLO antibody titer elevated more than five times normal, positive streptozyme and hypocomplementemia. Her renal function improved close to the preadmission level.

Discussion: In the elderly, acute PSGN is more frequently induced by a cutaneous rather than pharyngeal infection. The typical presentation includes the abrupt onset of hematuria, modest proteinuria, hypertension and fluid retention. In elderly patients, the urinary abnormalities may not be significant and the predominant findings may be related to fluid retention and hypertension. The clinical presentation is often an acute exacerbation of congestive heart failure with pulmonary edema. The course of acute PSGN in the elderly is similar to younger adults. Patients may have persistent hematuria and proteinuria but chronic renal insufficiency is unusual. Our case illustrates that the diagnosis of PSGN should be considered in every patient with acute renal failure accompanied by a history of infection, acute congestive heart failure and hypertension.

B5

An Especially "Sweet" Elder.

G. Luciano, D. Porter, M. Brennan, S. Bellantonio. *Baystate Medical Center, Springfield, MA.*

Introduction: Hydrothorax is a rare complication of peritoneal dialysis occurring in about 2% of patients.(1) The authors present a case occurring in a high-functioning elder.

Case: A 67-year-old female was on peritoneal dialysis for renal disease due to Wegener's granulomatosis. She had dyspnea and cough which worsened with exertion and after dialysis. Laying on her right side alleviated her symptoms. She was in no distress with normal vital signs. Her chest was dull to percussion and breath sounds were reduced at the right base. A chest x-ray showed an effusion and thoracentesis relieved the dyspnea. Fluid analysis revealed a transudative effusion with glucose of 460 mg/dL. The patient's serum glucose the same morning was 103 mg/dL. A diagnosis of sweet hydrothorax was made.

Discussion: Sweet hydrothorax is characterized by a transudative pleural effusion which is typically right sided.(1,2) It may result from increased peritoneal pressure, diaphragmatic defects or abnormal lymphatic drainage.(1,2) Chest x-ray will show an effusion, and peritoneal scintigraphy and CT peritoneography may also suggest sweet hydrothorax.(2) However, definitive diagnosis is via thoracentesis which reveals a transudative effusion. A very high glucose gradient can also be present; hence, the name 'sweet hydrothorax'. Therapy consists of cessation of continuous ambulatory peritoneal dialysis (CAPD) and thoracentesis to ease symptoms.(1,2) In many cases, CAPD can be successfully resumed; however, refractory cases may require pleurodesis.(1,2) Thoracotomy and video-assisted thoracic surgery for direct repair are also options.(1)

Conclusion: Elderly patients with decreased cardiopulmonary reserves are less able to tolerate a hydrothorax. Older adults often choose CAPD since dangerous fluid shifts can occur in hemodialysis and transportation issues can be challenging. As the population ages and the prevalence of geriatric renal disease increases, physicians must anticipate and treat dialysis-associated complications in elders. Clinical, educational and research collaboration between geriatricians and nephrologists is essential.

References:

1. Szeto CC, Chow KM. Pathogenesis and management of hydrothorax complicating peritoneal dialysis. Curr Opin Pulm Med 2004;10:315-9.

2. Saha TC, Singh H. Noninfectious complications of peritoneal dialysis. South Med J. 2007;100:54-8.

B6

Extra-mammary Paget's disease: A rare cause of non-healing dermatitis.

H. Sheikh, M. McCann, A. Rice. *University of Rochester, Rochester, NY.*

Pruritic rash of the perineum is a frequent occurrence in the nursing home setting commonly attributed to fungal infections. We describe a rare case of pruritic rash not responsive to standard therapy that should be considered in the differential diagnosis of a non-healing rash.

An 81 years old woman was admitted to the nursing home with progressive dementia and functional decline. Her initial assessment upon admission revealed a history of long standing pruritic rash in the genitalia extending into the inner thigh folds thought to be secondary to chronic vaginitis from incontinence. Physical examination revealed a well demarcated red scaly plaques encompassing mon pubis and vulva with overlying pustules and erosions. She had received multiple treatments with topical antifungals in the past with no relief. A dermatology consult diagnosed it to be inverse psoriasis with secondary super-infection. She underwent a course of oral 1st generation cephalosporin, topical corticosteroids with discontinuation of anti-fungal therapy. Upon followup a month later, she noted improvement in the inflammation but with persistence of pruritis and rash. Punch biopsy was obtained which showed mucin produing pagetoid foamy cells strongly positive for cytokeratin 7 and negative for cytokeratin 20 consistent with the primary cutaneous Paget's Disease with the possibility of internal adenocarcinoma. A gynecologic oncology consult was obtained with a work-up that included pelvic ultrsouund, mammography, CEA and CA-125 levels to exclude adenocarcinoma. Owing to the nature of primary cutaneous Paget's disease and her limited symptoms surgical wide resection of the lesion was deferred. Instead, topical Imiquimod therapy was undertaken with complete resolution of the symptoms and rash at three months.

This case emphasizes that Paget's can mimic exudative dermatitis and present as a chronic non-healing lesion in the perineum for many years. It is a rare neoplastic lesion which mainly affects postmenopausal women and is frequently associated with internal or regional malignancy. Clinicians should have a high index of suspicion to pick up the disease early by biopsy and thoroughly search for occult malignancy.

B7

Depression: Challenges for Housecalls.

H. Kao. *Medicine/Geriatrics, UCSF, San Francisco, CA.*

Supported By: Geriatric Academic Career Award (HRSA)

Introduction: This case depicts shortcomings in mental health services available to homebound patients.

Case: 83yo bedbound woman with depression. Despite medication, regular social work (SW) and physician (PMD) visits, her depression worsened. She refused phone support and friendly visitors. Her husband was exhausted and stressed, but the family only had a part-time caregiver to relieve him.

The patient began refusing food and pills. The PMD could not find a psychiatrist or psychologist who made housecalls. The team discussed inpatient psychiatric care with the patient. Of 10 area psychiatric units, only 2 accommodated bedbound patients but only 1 took elective admissions. The insurance plan denied authorization for admission, as the patient had not had requisite outpatient psychiatric care. Their network did not have a single psychiatrist who made housecalls but they argued, "She is bedbound so she can't kill herself." Two psychiatrists reviewed her case and recommended admission. The insurance finally agreed to inpatient care. The patient was admitted for interdisciplinary care. Her mood lifted and the family dynamic improved. At discharge, her team explained that full treatment required not only medication but also a comprehensive approach with environmental changes and a full-time hired caregiver.

Unfortunately, once home, full-time caregiving was not arranged and the patient's depression, drug refusal, and family tensions returned. The SW and PMD increased the intensity of visits. The PMD also began actively addressing the husband's well-being each visit. Two months later, the patient was taking her medications daily. The family, prompted by the husband's new diagnosis of a tumor and the team's steady encouragement, renewed efforts to hire a full-time caregiver.

Discussion: Up to 26% of home care patients have depression. The U.S. has 1600 of the 5000 geropsychiatrists needed to care for elders with mental illness. This case illustrates system barriers to providing mental health care to homebound patients: insurance misconceptions of these patients' needs; a limited workforce with geriatric expertise; few psychiatric units that accommodate bedbound patients; and the need for interdisciplinary interventions to care for complex homebound patients. The time commitment required for the degree of advocacy in this case is rarely sustainable for most providers. Until care systems improve, providers must maintain a high level of vigilance and creativity to effectively meet the needs of their frailest patients.

B8

Panhypopituitarism Secondary to Prostate Adenocarcinoma Metastatic to the Pituitary. A Case Report.

I. J. Paik, B. Matti-Orozco. *Geriatrics, St. Luke's-Roosevelt Hospital Center., New York, NY.*

We report the case of panhypopituitarism in a 75-year-old white male with history of hypertension, well controlled type 2 diabetes mellitus and recently diagnosed metastatic prostate cancer to the bones confirmed by biopsy. The patient presented with failure to thrive, confusion, dehydration and polyuria. On assessment he was hypotensive, refractive to fluid resuscitation. He had significant hypernatremia with diabetes insipidus. Cortisol, Testosterone and TSH levels were undetectable. MRI of the brain showed abnormal thickened enhancement along the pituitary stalk, superior aspect of the sella, and right cavernous sinus most likely consistent with metastatic disease. The patient was treated aggressively in the intensive care unit with fluid resuscitation, hormone replacements and steroids. He was ultimately discharged from the hospital under palliative care.

Prostate cancer frequently metastasizes to the skeleton and lymph nodes, but intracranial metastasis is rare. It was previously reported by McCutcheon et al. that 38 of 7994 cases (0.7%) demonstrated intracranial metastases from prostate cancer. The most common intracranial metastatic site of prostate cancer is the leptomeninges (67%), with the cerebrum (25%) and cerebellum (8%) following in frequency of involvement. Given the rarity of such metastases, routinely performing intracranial CT or MRI for all patients with prostate cancer might not be warranted. However, this case indicates the importance of considering the possibility of intracranial metastases in prostate cancer patients demonstrating hormonal disturbances or neurologic signs or symptoms.

B9

Is it Elder Abuse?

J. Jacob, Z. Chaudhry, S. Workman, S. Bellantonio, M. Rosenblum, T. Cappizzi, R. Belforti. *Baystate Medical Center, Springfield, MA.*

Supported By: Baystate Medical Center

Abused elderly patients are 3.1 times more likely to die within 3 years than those not abused. Detection of abuse in elders is complicated by many physical and mental co-morbidities which may mask abuse. Case: We admitted an 86 y/o woman with Alzheimer's dementia, living with her grandson, her sole caregiver, who was known to suffer from mental illness. Protective Services reported she was found soiled with feces and with multiple ecchymoses on the left thigh and shoulder, right arm and wrists, in the suprapubic region, and groin, raising the suspicion for sexual abuse. The bruises were initially small and enlarged rapidly. On HD #3, she became tachycardic and hemoglobin dropped from 8.3 to 4.9. She received multiple blood transfusions; CT of the abdomen revealed large retroperitoneal hematomas. Coagulation workup revealed dramatically elevated APTT of 109.5 seconds, with normal INR. Further evaluation revealed decreased levels of factor VIII (13.3%), with Factor VIII inhibitor markedly increased, at >50% Bethesda units. Thus, to our surprise, we discovered that what initially appeared to be elder abuse was in-fact a case of acquired hemophilia. Discussion: The incidence of elder abuse is 1.3% and the incidence of acquired Hemophilia A is 0.2-1.0 case/million persons/yr; 50% of cases of acquired Hemophilia A are idiopathic and occur before age 30 or after age 60. The incidences of both conditions are grossly underestimated. Elder abuse is underreported due to embarrassment, intimidation, and mental or physical inability to recognize & report abuse. Acquired Hemophilia A, caused by acquired auto-antibodies directed against clotting factor VII, may be underestimated in older adults due to difficulty in diagnosis since patients with low titers of inhibitor may remain asymptomatic and undiagnosed until they undergo a major surgery or trauma. Typical findings include hemorrhages in the skin, muscles, and soft tissues, as seen in our patient. Although a rare condition, given its prevalence in the elderly population, clinicians need to be aware of Acquired Hemophilia A, in order to initiate appropriate treatment. Conclusion: Although a patient may have risk factors for elder abuse, as did our patient (dementia, caregiver mental illness and stress), a thorough investigation for any possible medical cause for the constellation of signs and symptoms of suspected abuse is essential.

B10

Exogenous lipoid pneumonia in a chronic laxative user.

J. A. Hernandez-Montfort, J. A. Martagon-Villamil, B. Hehn, A. Arora. *Medicine, Baystate Medical Center/Tufts University School of Medicine, Springfield, MA.*

Case presentation: 72 year-old ex-smoker male referred to our outpatient clinic for evaluation of abnormal chest radiographic findings. The patient complained of chronic intermittent cough associated with occasional chest discomfort. Past medical history was relevant for dyslipidemia, coronary artery disease, gastroesophageal reflux

disease and diverticulosis. His medications included clopidogrel, aspirin, metoprolol, atorvastatin and esomeprazole. He was retired, reported living most of his life in New England, and denied substantial chemical exposures. Chest auscultation was clear bilaterally. Complete blood count and chemistries were normal. Chest radiograph revealed persistent right middle lobe infiltrate. Computed tomography of chest revealed extensive right middle lobe infiltrate of the lateral segmental bronchus and bilateral pulmonary nodules. Diagnosis of exogenous lipoid pneumonia was confirmed by bronchoalveolar lavage showing large extracellular vacuoles with a foreign-body giant cell reaction consistent with lipid from an exogenous source. On further questioning, patient confirmed a chronic use of mineral oil for constipation and was advised to stop it.

Discussion: Mineral oil aspiration from non-prescription, oil-based laxatives is the most common causative agent of exogenous lipoid pneumonia in the elderly. Clinical symptoms are usually non-specific and radiographic findings mimic multiple pulmonary diseases, which usually triggers pursuing further work-up. The non- irritative nature of mineral oil on the pharyngeal mucosa and risk factors for aspiration such as gastroesophageal reflux disease are likely explanations for its presentation on the extremes of age. Diagnosis is usually made after lung biopsy and a retrospective use of lipid-based products. Histopathology findings show lipid-laden vacuoles surrounding by inflammatory infiltrates, progressing into giant cells and fibrosis around the lipid masses. Treatment is mainly focused on the recognition and elimination of the offending agent. The present case illustrates the importance of targeted history for oil-based chronic laxative use in the elderly population with risk factors for aspiration like gastroesophageal reflux disease, swallow dysfunction and mental illness. Converting oil-based laxatives to prescription agents may be an alternative for primary prevention, as experience on the topic continues to grow.

B11

Unintentional weight loss in a wandering nursing home patient.

N. G. Kalathas, K. C. Nau. *Family Medicine-Eastern Division, West Virginia University, Harpers Ferry, WV.*

A case study was conducted of a 136 lb, ambulatory, wandering 83 year old male with Alzheimer's dementia admitted to a community nursing home who required transfer to hospital with an unintentional and unrecognized 15% weight loss. Long term care was required with the family unable to handle his wandering, and with psychotropic medications ineffective. In the spirit of a restraint-free environment, the nursing home accommodated his wandering throughout the halls of the facility. He was not disruptive, and did not elope from the institution. The patient did not appear to be losing dramatic amount of weight, completed most meals, and openly snacked often . A weight of 125 lbs about 10 days after admission was identical to his roommate on the weight chart, and was felt to be an erroneous duplicate entry, but was not repeated. After an unusual day spent mostly in bed, he was found unresponsive and sent to hospital, where azotemia, dehydration, and acute renal failure were diagnosed. Hospital admit weight was 115 lbs and family immediately noted a wasted appearance. He responded to IV hydration and was discharged to another LTC home.

Nursing staff interviews estimated the patient could well have been walking 8 or more hours per day. At an estimated 190 kcal/ 60 minutes of walking at a casual 2 mph pace-daily walking for 3, 6, or 8 hours could have expended 571, 1142, or 1523 kcal a day, respectively. At approximately 3,500 kcal per pound of body fat, negative caloric balance accounts for 7-10 pounds in 2 weeks, with the additional 7-10 pounds of water loss.

Conclusions:The differential diagnosis of unexpected weight loss in nursing home patients is unique, and wandering is a rarely reported etiology. Preventive monitoring can be accomplished by deploying systems-based changes such as. (1) weekly weights the first month for newly admitted "wanderers, (2) standing orders for routine physician notification if 5% or greater weight loss occurs in any one month, (3) families/MPOAs should be informed when 5% or greater weight loss has occurred, so that they might clarify desired extent of investigation and intervention, and/or increase their participation in feeding and snacks, (4) staff should be educated on unexpectedly high caloric expenditure that can occur in the excessively wandering dementia patient, and the potential effects of several sequential poor oral intake days in patients who are loosing weight, and have preexisting renal disease.

B12

Nocturnal Penile Tumescence in Senescence. Is that right?

N. Kuhadiya, L. Zaha, M. Reisner. *Department of Medicine, Mount Sinai (Jersey City) Medical Center, Jersey City, NJ.*

Introduction:

Sleep related painful erections are characterized by deep penile pain that occurs during erections in REM stage of sleep. Since its description by Karacan in 1971 only 33 cases have been reported in the literature, and rarely described in the geriatric age group. We describe a case of sleep related painful erections in a 77 year old male.

Case:

A 77 year old Caucasian male with essential tremors well-controlled on propranolol for many years presented with increased nocturnal erections for two years which were getting worse. He complained of painful penile erections which woke him up after midnight, lasting for about three to five minutes, somewhat relieved by urination. He would go back to sleep only to awaken after an hour due to erections. Initially the frequency of these episodes varied from two to three each night which increased to about one episode hourly and continued until he would finally wake up in the morning. He denied obsession with sexual thoughts, reported healthy sexual relationships and was not on any testosterone supplements or sexual stimulants. He had disappointing consultation with urologists. He had a normal physical exam. His serum testosterone level was within normal limits. Diagnostic studies like Polysomnography and Nocturnal Penile Tumescence & Rigidity monitoring were not performed due to patient's refusal. We diagnosed him with sleep related painful erections.

After a literature review we initiated treatment with low dose clonazepam (o.5mg) at bedtime. After two weeks of treatment his nocturnal erections were reduced to about three per night. The dose of clonazepam was increased to 1.0 mg per day leading to complete resolution of the erections. The patient remains on 1mg with no further symptoms one year after diagnosis.

Discussion:

This case illustrates an increased and painful penile tumescence in a healthy elderly male successfully treated with clonazepam. Van Driel et al reported that the only efficient drugs in the long term appear to be clozapine, baclofen and clonazepam. However,clozapine is associated with severe side effects like myocarditis, agranulocytois and epileptic seizures. Clonazepam and baclofen seems to be the two safe treatment options.

It is important to report such cases to estimate the true prevalence of sleep related painful erections and further clarify diagnostic and treatment options.

B13

Popliteal Artery Aneurysm: risk factors, detection and evaluation.

R. H. Carlson,[1] J. F. Potter.[2] *1. Creighton University, Omaha, NE; 2. Internal Medicine, University of Nebraska Medical Center, Omaha, NE.*

Introduction: Popliteal artery aneurysms (PAA) account for 85% of all lower extremity aneurysms. While PAAs are often asymptomatic, the potential for limb-threatening complications makes diagnosis essential. This case report describes a patient with both a PAA and a Baker's cyst.

Case: An 80-year-old male with DJD presented with worsening L knee pain & occasional swelling. Pain worsened with use & improved with rest. 4 yrs prior the patient was scheduled for L TKA, but postponed after a positive DSE. At that time, a small Baker's cyst was noted in his L knee. During later treatment for rectal cancer, a 3.8 cm AAA was found. His goal for this visit was to get clearance for his L TKA. On exam, a large pulsatile mass was felt in the L popliteal fossa. Duplex US showed a L 3cm PAA, a right 1 cm PAA, and a Baker's cyst on the L. CTA showed the L PAA as 5.1 cm x 5.1 cm x 7.2 cm in length. The PT artery was nearly occluded. An open left fem-distal bypass using a saphenous vein graft was scheduled. The surgery was complicated by the Baker's cyst. An intraoperative orthopedic consult confirmed integrity of the Baker's cyst. After the graft was placed, Doppler US confirmed adequate distal flow. The patient did well and was discharged on POD #8.

Discussion: PAAs are the most common peripheral aneurysms with an incidence of 0.1% to 2.8%. Most occur in males in the 6th-7th decades; up to 50% are bilateral & often associated with AAAs. Studies suggest that as many as 50% of asymptomatic PAAs become symptomatic within 2 yrs and 75% within 5 yrs. This confirms the importance of surveillance in at risk populations. If a popliteal mass is discovered on physical exam, a duplex US should be ordered. Once a PAA is confirmed, next steps depend on the presence or absence of symptoms. Symptoms require that a CT or arteriogram be done to evaluate popliteal artery runoff. If asymptomatic, the size of the PAA will determine treatment. Less than 2 cm should be observed with yearly duplex scans. PAAs greater than 2cm should be treated surgically to decrease risk of an ischemic event.

Conclusion: PAAs should be considered in older men with knee pain, claudication, or AAA. PAAs are often asymptomatic before progression to thromboembolism. Therefore, palpation of the popliteal fossa should be routine even in asymptomatic older patients.

B14

An 84-Year Old Backpacker Off Legs.

J. T. Gossage, S. A. Bruce. *Medicine for the Elderly, Conquest Hospital, St Leonards-on-Sea, United Kingdom.*

An 84 year old Caucasian man on holiday was admitted to hospital in Sri Lanka with fever and malaise. He developed pneumonia requiring treatment in critical care. Initial screening for dengue, chikungunya, malaria and HIV were negative. Creatine kinase (CK) was >12,000 iu/l. After a month he was well enough to be repatriated. On admission to our hospital the most striking features were severely painful ankles, generalised weakness and muscle wasting. He was cognitively intact but immobile and dependent in all activities of daily living having previously been independent. His only medication was thyroxine 50mcg daily.

Repeat blood tests showed haemoglobin 10.4g/l, normal iron, vitamin B12 and folate, no evidence of haemolysis, mildly raised liver enzymes, albumin 25g/l, bone profile, renal and thyroid function normal, autoimmune screen negative, CK still elevated 925 iu/l (normal range 55-170). Blood and urine cultures sterile, malaria films negative. Plain x-rays of ankles normal. IgG serology for chikungunya had become positive, dengue was still negative.

Chikungunya serology is negative for up to 4 days after the onset of symptoms when IgM becomes positive and IgG after 15 days. Incapacitating arthralgia which may persist for months is particularly characteristic and distinguishes chikungunya from dengue though there may be co-infection. Chikungunya is generally self-limiting but severe forms, particularly in older people, have been recognised in recent outbreaks around the Indian Ocean. Pneumonia has been reported and relapsed in our case, with bilateral consolidation. No specific bacterial pathogens were found in sputum or blood, screening for tuberculosis was negative. Menigoencephalitis and Guillain-Barré syndrome have been reported but there have been no previous reports of myopathy. We were unfortunately unable to confirm this histologically or by EMG but CK was 37iu/l by discharge. The severity of the arthralgia, combined with clinical myopathy, was a significant barrier to rehabilitation. Four months after presentation he was discharged to stay with his daughter, mobile with a frame, but still experiencing significant pain. Climate change and global travel are leading to importation of such diseases and their vectors into Europe and USA. Geriatricians should be aware of this because of the particular challenges to rehabilitation and the susceptibility of older people to severe forms of the disease.

Review: Pialoux G et al Lancet Infect Dis 2007;7:319

B15

Healthy Living as You Age: A Randomized Trial to Reduce At-Risk Drinking Among Older Adults.

M. S. Gill,[1] A. A. Moore.[2] *1. Eastern Virginia Medical School, Norfolk, VA; 2. Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA.*

Supported By: National Institutes of Health, the John A. Hartford Foundation, the Lillian R. Gleitsman Foundation, the American Federation for Aging Research

Purpose: To describe at-risk drinking older adults participating in a randomized trial, Healthy Living as You Age study, and to determine the efficacy of a primary-care based intervention, consisting of feedback, physician advice and counseling by a health educator, to reduce at-risk drinking at 3- and 12-months.

Methods: Primary care patients aged 55 and older identified as at-risk drinkers were randomly assigned to a control group (n=321), and received a booklet on general health behaviors, or to an intervention group (n=310), consisting of a personalized feedback report, a booklet on alcohol risks and aging, advice from a physician at baseline and up to three health educator counseling calls over a two month period. Measurements included demographic information, amount of alcohol consumption, number and types of risks associated with alcohol consumption.

Results: The sample was predominantly male (71%), Caucasian (88%), educated (54% with >high school education), with excellent or very good self-rated health (52%). Of 7 possible categories of risk, subjects had an average of 2.94 risks, and most were at-risk because they used medications that could cause harm with alcohol (73%). At baseline, subjects drank 2.16 drinks per day and drank 4 or more drinks 0.91 days per week. At 3 months, 49.4% of intervention subjects were considered at-risk drinkers compared to 61.2% of control (P=0.005) and at 12-months, 54% of intervention subjects were considered at-risk, compared to 60% of control (P=0.20). Compared to control subjects, intervention subjects reported fewer drinks per day at 3 months (1.28 vs. 1.53, P=0.008) and 12-months (1.34 vs. 1.53, P=0.077), and fewer days per week during which 4 or more drinks were consumed at 3-months (0.28 vs. 0.54, P=0.027) and 12-months (0.29 vs. 0.52, P=0.06).

Conclusions: An intervention comprised of feedback, physician advice and health educator counseling reduced the prevalence of at-risk drinking and the amount of alcohol consumed among older drinkers when comparing intervention and control groups at 3-months. These differences are present but are no longer statistically significant at 12-months. Both groups reduced at-risk drinking dramatically over the study period. Additional counseling throughout the study period may have strengthened the intervention.

B16

Moderate Alcohol Intake Is Associated with Lower Dementia Incidence: Results from the Ginkgo Evaluation of Memory Study (GEMS).

D. A. Mangieri,[1] J. Williamson,[1] J. Lovato,[1] A. Fitzpatrick,[2] H. Atkinson,[1] J. Saxton,[3] S. Rapp,[1] M. Carlson,[4] S. DeKosky,[3] R. Nahin,[5] K. Sink.[1] *1. Wake Forest U, Winston-Salem, NC; 2. U Washington, Seattle, WA; 3. U Pittsburgh, Pittsburgh, PA; 4. Johns Hopkins U, Baltimore, MD; 5. NCCAM, Bethesda, MD.*

Supported By: GEMS is funded by the NIA and NCCAM. Dr. Sink is supported by the Kulynych Center for Memory Research and the WFU Pepper Center.

Background: Moderate Alcohol intake has been associated with reduced risk of dementia in middle aged adults. It is not clear whether

this association is also true for older adults or those with Mild Cognitive Impairment (MCI).

Purpose: To determine the relationship between alcohol intake and incident dementia in 3069 community-dwelling older adults enrolled in GEMS.

Methods: Participants were 75+ years old and without dementia at baseline. After extensive cognitive testing, participants were classified as cognitively normal or as having MCI. Alcohol consumption was self-reported at baseline and categorized as none, 1-7 (light), 8-14 (moderate), and >14 (heavy) drinks/week. Unadjusted and adjusted proportional hazards models were used to determine the association between baseline alcohol consumption and incident dementia over a median follow-up of 6 yrs.

Results: Among the 3069 participants (mean age 79.1 yrs, 46% women, 95% White), 2587 were cognitively normal and 482 had MCI at baseline. There were 523 incident cases of dementia. The distribution of alcohol consumption per week was 0=42.6%; 1-7=38.2%; 8-14=9.4%; >14= 9.8%. After adjustment for demographics, smoking, co-morbidities, depression, social activity, and baseline cognition (3MSE score), moderate alcohol intake was associated with a 40% lower risk of dementia in participants with normal cognition at baseline, but not in those with MCI. Heavy drinking was associated with higher risk of progression to dementia in those with MCI. The table presents the adjusted Hazard Ratios for risk of incident dementia.

Conclusions: Among cognitively normal older adults, moderate alcohol intake (1-2 drinks/day) is associated with 40% lower risk of dementia over 6 years. In MCI, alcohol does not appear beneficial and heavy use is associated with greater risk of progression to dementia. Recommendations not to exceed 2 drinks/day are supported by these data.

	Normal (n=2587)		MCI (n=482)	
(drinks/wk)	HR	95% CI	HR	95% CI
Abstainers (0)	1.00	---	1.00	---
Light (1-7)	0.89	0.69-1.15	0.99	0.70-1.39
Moderate (8-14)	0.60	0.37-0.97	0.96	0.53-1.74
Heavy (>14)	0.82	0.52-1.28	1.84	1.03-3.30

B17
WITHDRAWN

B18
Delirium in the Emergency Department is Associated with Six Month Mortality.

J. H. Han,[1] N. Cutler,[2] E. Zimmerman,[2] A. Morandi,[3] L. Solberg,[2] J. F. Schnelle,[2] A. B. Storrow,[1] R. S. Dittus,[2] E. W. Ely.[2] *1. Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN; 2. Department of Internal Medicine, Vanderbilt University Medical Center, Nashville, TN; 3. Department of Internal Medicine and Geriatrics, Poliambulanza Hospital, Brescia, Italy.*

Objectives: Delirium's adverse effect on long-term mortality in older hospitalized patients is well documented, but its effect on older emergency department (ED) patients remains unclear. As a result, we sought to determine if delirium in the ED was associated with 6-month mortality.

Methods: Our prospective cohort study was conducted at a tertiary care, academic ED using convenience sampling, and included English speaking patients who were 65 years and older and present in the ED for less than 12 hours at the time of enrollment. Patients were excluded if they refused consent, were previously enrolled, had severe dementia, were unarousable to verbal stimuli for all delirium assessments, or had incomplete data. The Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) was used to determine delirium status and was administered by trained research assistants. Multivariable logistic regression was used to determine if delirium was associated with 6-month mortality adjusted for age, comorbidity burden, and the presence of systemic inflammatory response syndrome (SIRS). SIRS was used as a surrogate for severity of illness because it accounts for parameters which may be associated with mortality. Unadjusted and adjusted odds ratios (OR) with their 95% confidence intervals (95%CI) were reported.

Results: Of the 303 patients enrolled, 25 (8.3%) were delirious in the ED and 36 (11.9%) died within 6 months. Patients who died within 6 months were significantly older, had higher comorbidity burden, and were more likely to meet SIRS criteria. Six month mortality rate was higher in the delirious group compared to the non-delirious group (36.0% versus 9.7%) with an unadjusted OR (95%CI) of 5.2 (2.1 – 13.0). After adjusting for age, comorbidity burden, and the presence of SIRS, delirium remained significantly associated with increased 6-month mortality (adjusted OR = 3.4, 95%CI: 1.3 – 9.1).

Conclusion: Delirium in older ED patients is associated with increased 6-month mortality and this association persists after adjusting for age, comorbidity burden, and the presence of SIRS.

B19
The Effect of Cardiocerebral Resuscitation in Aging Adults.

M. J. Mohler,[1] C. Wendel,[1] J. Mosier,[2] A. Itty,[2] J. Poulsen,[2] J. Shellenberger,[2] B. Bobrow,[4,5] L. Clark,[3,4] A. Sanders.[2] *1. Geriatrics and Gerontology, University of Arizona, Tucson, AZ; 2. Emergency Department, University of Arizona, Tucson, AZ; 3. Sarver Heart Center, University of Arizona, Tucson, AZ; 4. AZ Dept of Health Services, Bureau of EMS, State of Arizona, Phoenix, AZ; 5. Mayo Clinic Hospital, Scottsdale, AZ.*

Supported By: Arizona Center on Aging, University of Arizona

Arizona Department of Health Services, Bureau of EMS, State of Arizona

Purpose of the project: Most sudden out of hospital cardiac arrests (OHCA) occur in persons ≥65 years of age. In Arizona development of a minimally interrupted cardiac resuscitation protocol for emergency medical service providers (EMS), known as cardiocerebral resuscitation (CCR), demonstrated a 3-fold improvement in survival for OHCA victims with a witnessed collapse and initial rhythm of ventricular fibrillation (VF) compared to those receiving standard advanced life support (ALS). Objectives of this analysis were to examine the survival and neurological status of those aged ≥65 receiving CCR compared to Std-ALS, as well as predictors of survival. Description of methods: Data from 62 EMS agencies across Arizona areas representing approximately 80% of the population were obtained from the Save Hearts in Arizona Registry and Education project (SHARE) between 1/2005 and 9/2008. OHCA due to trauma, drowning, or respiratory causes or pediatric cases were excluded. Outcome measures included survival to hospital discharge and cerebral performance category. Logistic regression evaluated the associations of CCR versus Std-ALS on survival in those ≥65, adjusted for known potential confounders. Summary of results: There were 2048 patients ≥65. CCR was significantly associated with survival compared to Std-ALS (33/558 vs. 59/1490, adjusted OR = 2.0, p=.005). Both CCR and Std-ALS resulted in comparable proportions of survivors ≥65 with good neurologic status (CPS 1 or 2), (96% for CCR, 89% for Std-ALS (p=.31). Independent predictors of survival were CCR, witnessed arrest (OR=6.7), agonal breathing (OR=4.0), VF (OR=5.3), and EMS dispatch-to-arrival time < 5 min (OR=0.36). Conclusions: As it is in younger OHCA victims, CCR is associated with increased survival (compared to Std-ALS) in those ≥65. A majority of OHCA survivors have a good neurologic outcome. Resuscitation in elders without known "do not resuscitate" status is warranted. Concerns regarding post resuscitation neurologic sequelae in the aged are largely unfounded. As our aging population increases, these findings deserve further attention.

B20

Older Patients' Understanding of Emergency Department Discharge Information and its Relationship with Adverse Outcomes.

S. N. Hastings,[1,2] A. Barrett,[3] M. Hocker,[3] E. Z. Oddone,[1] M. Weinberger,[1] K. E. Schmader.[2,4] *1. Center for Health Services Research in Primary Care, Durham VAMC, Durham, NC; 2. GRECC, Durham VAMC, Durham, NC; 3. Emergency Medicine, Duke University, Durham, NC; 4. Geriatrics/Aging Center, Duke University, Durham, NC.*

Supported By: VA HSR&D, John A. Hartford Foundation/AGS Foundation for Health in Aging

Objectives: Discharge instructions are an important part of the care provided to older adults in the ED; however, little is known about how well patients understand this information. Our study sought to describe older patients' understanding of ED discharge information, and to explore the relationship between patients' understanding of discharge information and adverse outcomes.

Methods: Telephone interviews were conducted with patients >= 65 or their proxies within 48 hours of discharge from an academic medical center ED. We assessed their understanding of 4 areas of discharge information: ED diagnosis, expected course of illness (i.e., how long symptoms or illness were expected to last), self-care instructions, and return precautions (i.e., symptoms that should prompt medical care). Medical records were reviewed for adverse events defined as repeat ED visits, hospitalizations or deaths within 90 days of ED discharge. Reverse Kaplan-Meier curves were constructed to illustrate cumulative event probabilities according to patient understanding of each area of discharge information (differences examined with log-rank tests).

Results: 92 patients (mean age 75.1, SD 7.4; 59.8% female) or their proxies completed the survey. Patients reported not understanding discharge information about their diagnosis (20.7%), self-care instructions (16.3%), expected course of illness (63%), and return precautions (55.7%). Within 90 days of ED discharge, 42.3% of patients had returned to the ED, 30.4% had been admitted to the hospital and 4.3% had died. There was little difference in cumulative event probabilities according to whether patients understood self-care instructions or return precautions. Adverse event probabilities were consistently higher among patients who did not understand their ED diagnosis (P=0.33) and those who did not understand expected course of illness (P=0.12), although these did not achieve statistical significance.

Conclusion: A substantial number of older patients, or their proxies, may not understand ED discharge information, and this could have an effect on patient outcomes. Strategies are needed to improve communication of ED discharge information to older patients and their families.

B21 New Investigator Awardee

Variability in Adverse Outcomes According to Emergency Department Discharge Diagnosis.

S. N. Hastings,[1,2] H. E. Whitson,[2] J. Purser,[2,3] R. J. Sloane,[2] K. S. Johnson.[2] *1. Center for Health Services Research in Primary Care/GRECC, Durham VAMC, Durham, NC; 2. Geriatrics/Aging Center, Duke University, Durham, NC; 3. Physical Therapy, Duke University, Durham, NC.*

Supported By: VA HSR&D, John A. Hartford Foundation/AGS Foundation for Health in Aging, Duke Claude D. Pepper Older Americans Independence Center

Objectives: Older adults discharged from the Emergency Department (ED) are at risk for subsequent hospitalization, nursing home admission or death; however, little is known about which patients are at greatest risk for these events. The goal of this study was to compare adverse event rates according to ED discharge diagnosis groups in a nationally representative sample of older Americans.

Design and setting: Secondary analysis of data from the Medicare Current Beneficiary Survey.

Participants: 1851 community-dwelling, Medicare fee-for-service enrollees, ≥ 65 years old who were discharged from the ED between January 2000 and September 2002.

Measurements: Primary independent variables were ED discharge diagnosis groups: (1) injuries,(2) chronic conditions, (3) serious infections, and (4) ill-defined conditions. Time to first adverse event was defined as number of days to hospital admission, nursing home admission or death within 30 days of the index ED visit. Cox proportional-hazards regression models were adjusted for demographics, health status and previous health service use.

Results: 1394 patients (75.3%) were assigned to one of the 4 prespecified ED discharge diagnosis groups. Injuries were most common (24.6%), followed by ill-defined conditions (22.2%), chronic conditions (20.9%), and serious infections (7.7%). The 30-day adverse event rate was lowest among patients with injuries (7.9%) and highest among patients seen in the ED for chronic conditions (20.9%). In adjusted analyses, a discharge diagnosis of injury was associated with lower risk of subsequent adverse events (HR 0.59, CI 0.41, 0.86) compared to all non-injury diagnoses. Patients seen in the ED for chronic conditions were at greater risk of adverse outcomes (HR 1.89, CI 1.38, 2.58) compared to all other diagnosis groups. There were no significant differences in risk among patients with serious infections, ill-defined conditions, or those with an unclassified discharge diagnosis.

Conclusion: Adverse events were common among older patients with an ED discharge diagnosis classified as a chronic condition. If validated, ED discharge diagnosis groups could be useful for identifying high risk patients for interventions to improve outcomes in this vulnerable population.

B22

Reproductive History and Age-Related Macular Degeneration in the Women's Health Initiative Sight Exam Study.

A. Zeki Al Hazzouri, M. N. Haan. *Epidemiology, University of Michigan- School of Public Health, Ann Arbor, MI.*

Supported By: The WHISE study is an ancillary study to the WHI CT and Observational Study. The WHI program is supported by the National Heart, Lung, and Blood Institute, US Department of Health and Human Services; and support for the evaluation of macular degeneration in women recruited into the WHISE Study was provided by Wyeth Ayerst Laboratories.

Purpose: The goal of this analysis was to determine if women's reproductive history including history of hormone use and hysterectomy status were associated with age-related macular degeneration (AMD) and drusen outcomes.

Methods: The Women's Health Initiative Sight Exam (WHISE) was an ancillary study to the Women's Health Initiative (WHI) clinical trial of hormone replacement therapy (HRT) that included 4,288 women aged 65+. Data on reproductive history were obtained by interview at baseline in the parent study, an average of 5 years before the eye examinations. WHISE investigators performed and graded fundus photography, performed visual function assessments, and administered questionnaires. Demographics, medical history, and reproductive history factors were examined by AMD status and drusen outcomes. Any statistically significant differences were assessed by chi-square tests, Fisher's exact tests, or by analysis of variance (ANOVA). Multivariate logistic regression models were fitted for each reproductive factor separately to assess whether they were associated with AMD status and drusen outcomes.

Results: A history of oral contraceptive (OC) use for ≥4 years was associated with lower risk to drusen size ≥250 μm (OR=0.45; 95% CI 0.28–0.71), soft indistinct drusen (OR= 0.56; 95% CI 0.41–0.77), and large soft drusen (OR= 0.67; 95% CI 0.54–0.84). History of estrogen plus progestin HRT use was associated with greater risk to any early AMD (OR=1.32; 95%CI 1.02–1.71) and large soft drusen

(OR=1.44; 95% CI 1.11–1.86) but was not associated with other AMD or drusen outcomes.

Conclusions: These findings suggest that OC use and history of estrogen plus progestin HRT use are associated with AMD and drusen outcomes. Other studies should attempt to confirm our findings. In addition, more basic science experiments are needed to better understand how sex hormones affect drusen development, atrophy of the Retinal Pigment Epithelium, and neo-vascularization in animal models of AMD.

B23

Diffuse Idiopathic Skeletal Hyperostosis (DISH) and Impaired Physical Function: The Rancho Bernardo Study.

D. Kado,[1,2] M. Huang,[2] E. Barrett-Connor.[3] *1. Dept. of Orthopaedic Surgery, UCLA, Los Angeles, CA; 2. Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA; 3. UCSD School of Medicine, San Diego, CA.*

Supported By: NIH RO1 AG24246

Background: Diffuse idiopathic skeletal hyperostosis (DISH) is a skeletal disease characterized by ligamentous ossification of the anterolateral spine. It is commonly observed in elderly men, and yet very little is known about its clinical implications.

Objective: To investigate whether DISH is associated with self-reported and measured physical functional impairment in a large community-based cohort.

Methods: We performed cross-sectional analyses of 486 men and 772 women (mean age = 74.9 years, SD = 8.5) from the Rancho Bernardo study. DISH was diagnosed from lateral thoracic and lumbar spine radiographs using the standard radiologic criteria of: 1) the presence of flowing calcification and ossification along the anterolateral aspect of ≥ 4 contiguous vertebral bodies; 2) a relative preservation of disc height; and 3) absence of apophyseal joint bony ankylosis, sclerosis, or bony fusion. Using multivariable logistic and linear regression analyses, we assessed the association between DISH and 1) self-reported difficulty in bending over to the floor, walking 1 level block, or climbing 1 flight of stairs; 2) performance-based measures of grip strength and chair stand testing (ability to stand up and sit down in a chair 5 times without using the arms).

Results: DISH was diagnosed in 29% of men and 6.5% of women. In age and sex adjusted models, those with DISH had a 1.56-fold increased odds of self-reported difficulty with bending (95% CI:1.02 - 2.48); these results were no longer significant after further adjustment for body mass index. We found no association between DISH and difficulty with walking or climbing stairs. However, those with DISH demonstrated worse grip strength, even after adjustment for age, sex, body mass index, hip bone mineral density, hypertension, and smoking (p = 0.016). Among men, after adjustment for age, body mass index, and hip bone mineral density, those with DISH were 2.3-times more likely to have trouble with the chair stand (95% CI: 1.10 – 4.76).

Conclusions: Confirming previous study findings, DISH commonly affects almost one third of elderly white men. Perhaps more importantly, these results also demonstrate that older persons, and particularly older men with DISH are significantly more likely to experience functional impairment.

B24

Use of Antidepressant Medications and the Subsequent Course of Depressive Symptoms among Older Persons.

J. J. Abou, T. M. Gill, L. C. Barry. *Internal Medicine, Yale University, New Haven, CT.*

Supported By: Janet Abou is supported by NIA training grant (T32 AG1934).

Dr. Thomas Gill is supported by NIA grants (R37AG17560, R01AG022993).

Dr. Lisa Barry is supported by NIA K01 grant(AG031324-01A1).

Background: Antidepressant medications are commonly prescribed for older persons with depressive symptoms who may not have a major depressive disorder. Yet, the effect of antidepressants on depressive symptoms over time in this population is largely unknown.

Aim: To determine whether the use of antidepressant medications is associated with a reduction in the severity of depressive symptoms over time.

Methods: Subjects included 754 community-dwelling persons, aged 70+ years, who were followed at 18-month intervals for 90 months. Depressive symptoms were assessed using the 11-item CES-D scale, with a higher score indicating worse depressive symptoms. A linear mixed effects model, adjusted for demographics, number of chronic conditions, cognitive status, and physical frailty was used to evaluate the effect of antidepressant use on change in depressive symptoms score over time. Among persons with clinically significant depressive symptoms (i.e., CES-D score >=20), we evaluated whether antidepressant use was associated with a transition to a non-depressed state (CES-D score <20) using a GEE model.

Results: At baseline, subjects taking an antidepressant (n=75) had higher mean CES-D scores than those not taking an antidepressant (15.1±9.2 vs. 8.5±8.3; p<0.001) and were more likely to be female (p<0.001). Between the different 18-month intervals, the average unadjusted CES-D change scores ranged from -3.4 to 1.7 and 0.4 to 1.5 among those taking, and not taking, an antidepressant, respectively. Adjusted CES-D scores worsened, on average, for subjects taking an antidepressant as compared with those not taking an antidepressant. These differences were statistically significant between baseline to 18 months (p=0.03), 36 to 54 months (p=0.02) and 72 to 90 months (p=0.01). The longitudinal findings indicated that CES-D scores worsened by 2.2 points, on average, among subjects taking an antidepressant as compared with those not taking an antidepressant, although this difference was not statistically significant (p=0.14). Among subjects with clinically significant depressive symptoms, use of antidepressants was not associated with transitioning to a non-depressed state (OR=0.85, 95% CI 0.5-1.4).

Conclusions: Our findings raise concerns about the effectiveness of antidepressants, as prescribed in clinical practice. Additional research is needed to better understand the real world use and benefit of antidepressants among older persons.

B25

Dehydroepiandrosterone sulfate (DHEAS) in the oldest old and factors associated with 9-year DHEAS decline.

J. L. Sanders,[1] R. M. Boudreau,[1] A. R. Cappola,[2] A. M. Arnold,[3] P. Chaves,[4] J. Robbins,[5] M. Cushman,[6] A. B. Newman.[1] *1. University of Pittsburgh, Pittsburgh, PA; 2. University of Pennsylvania, Philadelphia, PA; 3. University of Washington, Seattle, WA; 4. Johns Hopkins University, Baltimore, MD; 5. University of California Davis, Davis, CA; 6. University of Vermont, Burlington, VT.*

Supported By: National Institute on Aging (R01 AG-023629); National Heart, Lung, and Blood Institute (N01 HC-35129, N01 HC-45133, N01 HC-75150, N01 HC-85079 through N01 HC-85086, N01 HC-15103, N01HC-55222, and U01 HL-080295); with additional contribution from the National Institute of Neurological Disorders and Stroke

Purpose: Serum dehydroepiandrosterone sulfate (DHEAS) is a putative biomarker of aging though it has not been characterized in the oldest old. We describe cross-sectional relationships with DHEAS and factors associated with DHEAS change in a well-characterized older cohort. Methods: DHEAS was measured twice (in 1997-98 and 2006-07) in 991 subjects [mean (SD) age 85.2 (3.6) years in 2006-07] enrolled in the Cardiovascular Health Study (CHS) All Stars study. We 1) assessed the distribution of health characteristics in 2006-07 by DHEAS levels; 2) tested for differences in mean DHEAS level and mean 9-year DHEAS change across age categories with the Wilcoxon test; 3) used linear and logistic regression to identify factors associated with continuous DHEAS change and large DHEAS change (>0.5 or <-0.5 SD from mean change). Results: Mean (SD)

DHEAS for women in 1997-98 and 2006-07 were 0.555 (0.414) μg/ml and 0.482 (0.449) μg/ml, and for men were 0.845 (0.520) μg/ml and 0.658 (0.516) μg/ml. In 2006-07, lower DHEAS was significantly associated with older age, white race, never smoking, lower fasting glucose, coronary heart disease (CHD), and chronic pulmonary disease ($p<0.05$). Though continuous DHEAS change did not differ by age category within gender, the mean DHEAS decrease in men (0.187 μg/ml) was greater than that in women (0.074 μg/ml) ($p<0.0001$). Younger men (<85 years) had a significantly greater DHEAS decrease than younger women but older men and women (>85 years in 1997-98) declined similarly. In linear models adjusted for age, gender, and starting DHEAS, CHD before the study period augmented the drop in DHEAS by 0.052 μg/ml ($p=0.046$). In similarly adjusted logistic models, previous CHD was associated with categorical DHEAS decline (OR=1.77, 95% CI 1.15-2.73). Conclusions: Men <85 experience a greater DHEAS decline than women <85, but older men and older women decline similarly. Previous CHD significantly augments DHEAS decline.

B26

Subclinical peripheral arterial disease and lower leg strength in older adults: the role of nerve function.

J. Hernandez,[1] A. Yazdanyar,[2] K. Sutton-Tyrrell,[2] S. Satterfield,[3] T. B. Harris,[4] E. S. Strotmeyer,[2] A. B. Newman.[2] *1. University of Puerto Rico School of Medicine,, San Juan, PR; 2. Epidemiology, University of Pittsburgh, Pittsburgh, PA; 3. University of Tennessee, Memphis, TN; 4. National Institute on Aging, Bethesda, MD.*

Supported By: NIA contract numbers N01-AG-6-2101, N01-AG-6-2103, and N01-AG-6-2106; 1-R01-AG 028050 (to ESS) and supported in part by the Intramural Research Program of the NIH, NIA

Peripheral Artery Disease (PAD) may be associated with lower-extremity strength through reduced blood flow directly to leg muscles or indirectly via poor nerve function. To determine if ankle-arm index (AAI) was associated with lower-extremity strength and the role of peripheral nerve function in this association, we examined physically able Health, Aging and Body Composition Study participants aged 70-79 years and free of clinical PAD (N=2161, 48% men, 37% black). AAI was categorized as >0.9 to <1.4 (normal referent; N=1808), <0.9 (low; N=319), and >1.4 (high; N=34). Knee extension strength was measured via isokinetic dynamometry. Sensory and motor peripheral nerve function in legs/feet was assessed with monofilament detection, average vibration threshold, and peroneal motor nerve conduction (NC) velocity and amplitude. Fat and lean mass were measured by DXA. Participants with low AAI, vs. those with normal AAI, were older (77 vs. 76 years) and more likely to be black (58% vs. 34%), current smokers (14% vs. 5%), and have diabetes (48% vs. 38%) (all $p<0.05$). Participants with high AAI were more likely to be men (62% vs. 48%), have diabetes (60% vs. 38%), and fewer were black (12% vs. 34%) (all $p<0.05$). Participants with low or high AAI had less monofilament detection (10% or 15% vs. 8%; $p=0.06$), poorer vibration threshold (57 μ or 55 μ vs. 49 μ; $p<0.05$), and lower NC amplitude (2.9 mV or 3.3 mV vs. 3.4 mV; $p<0.05$), but not velocity. In linear regression models for leg strength, AAI was the main predictor and nerve function a secondary predictor of interest. Low AAI was significantly associated with lower leg strength, adjusting for covariates of age, sex, race, fat mass, lean mass, and knee pain. Adding nerve function to the model reduced the association of AAI and strength by only 6%. Lower NC amplitude was also significantly associated with lower leg strength. High AAI was not associated with leg strength. While PAD was related to poor nerve function, this association did not explain much of its association with poorer strength, suggesting that blood flow directly to muscle is the major pathway to loss of strength in subclinical PAD.

B27

Salivary Testosterone is Independently Associated with Gait Speed in a Nationally-Representative Sample: Data from the National Social Life, Health, and Aging Project (NSHAP).

J. R. Berian, J. Hemmerich, W. Dale. *Medicine, Section of Geriatrics, University of Chicago, Chicago, IL.*

Supported By: American Federation for Aging Research - Medical Student Training in Aging Research Program;

Paul Beeson Career Development Award (K-23) - NIA/Hartford

Purpose: Older men have lower testosterone (T) levels than younger men. The independent relationship of T levels to gait speed is unclear. This study aims to establish estimates of serum T levels in healthy older men in the U.S. using salivary T, and to measure the relationship between testosterone and functional performance including gait speed. Methods: NSHAP is a national probability sample of 3,005 adults, including 1,455 males aged 57 to 85, conducted between July 2005 and March 2006 in concert with the Health and Retirement Study (HRS). This study analyzed a cohort of 1,172 men from the NSHAP database with duplicate sampled, lab-verified salivary T levels. Salivary T levels were transformed to estimate serum T levels using a previously validated formula. Functional performance included disability (defined by the number of impaired Activities of Daily Living) and functional loss (defined as self-reported fatigue and slow gait speed (in previously-defined categories: for height ≤ 173 cm, slow gait defined as ≤ 0.653 m/s; for height > 173 cm, slow gait was ≤ 0.762 m/s)). The relationship of T levels with gait speed was assessed, controlling for age, education, income, comorbidity count, C-reactive protein (CRP), and hemoglobin levels. Results: Mean salivary T level was 82.90±37.04 pg/mL and declined as expected with advancing age. Mean serum T was estimated at 525.43±148.52 ng/dL. Lower T levels were not predictive of self-report of fatigue or disability, but both T and comorbidity count were significantly predictive of slow gait after controlling for age, education status and household income ($p<0.01$). Income, comorbidity count and CRP levels were significantly associated with fatigue ($p<0.01$) while age and comorbidity count were predictive of disability ($p<0.05$ and $p<0.01$, respectively). Conclusions: Mean estimated serum T in U.S. men ages 57 to 85 approximates 525 ng/dL, which is higher than previously reported in other samples. Lower estimated serum T levels based on salivary T levels were independently associated with low gait speed in this nationally-representative older male population. Lower T levels did not correlate with other measures of functional performance in healthy older men. This provides additional evidence for the importance of T in maintaining function in older men.

B28

BLOOD PRESSURE AND TWELVE-YEAR CARDIOVASCULAR MORTALITY AMONG OLDER MEXICAN AMERICANS AGED 65 AND OLDER.

M. Al Ghatrif,[1,2] L. A. Ray,[1,2] M. Raji,[1,3] K. S. Markides.[1,2] *1. SCOA, UTMB, Galveston, TX; 2. PMCH, UTMB, Galveston, TX; 3. Internal Medicine -Geriatrics, UTMB, Galveston, TX.*

Supported By: - National Institute on Aging, USA (Grant# AG10939).

- UTMB center for Population Health and Health Disparities (1P50CA105631-02.)

Objective: We examined the association between Blood pressure stages as defined in The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) and cardiovascular mortality over 12-year follow-up among older Mexican Americans aged 65 and older.

Design: Prospective study using data from the Hispanic Established Population for the Epidemiological Study of the Elderly (H-EPESE) (1993-94)

Settings: Five southwestern states: Texas, New Mexico, Colorado, Arizona, and California

Participants: We included 2654 non-institutionalized Mexican American men and women aged 65 and older. Subjects were categorized into two age groups: 65-74 years (n=1714) and ≥ 75 years (n=940).

Measurements: Measured blood pressure (BP) at baseline, socio-demographic factors, smoking, history of heart attack, stroke, diabetes, body mass index (BMI). Mortality data were confirmed by matching records with the National Death Index. Primary predictor was the JNC7 blood pressure stages.Cox proportional hazard model was used to estimate the hazard ratio (HR) of cardiovascular mortality as a function of BP stages in each of the age groups with prehypertension as reference.

Results: There was no significant difference in the distribution of age, sex, self reported diabetes, heart attack and stroke across the JNC7 blood pressure stages. Those in stage-2 had higher BMI and smoking rates when compared to other groups. In subjects aged 67-74, 12-year crude cardiovascular mortality was significantly associated with advanced BP stage while there was no such association among subjects aged ≥75. In subjects aged 65-74, the age and sex adjusted hazard ratio (HR) for stage-2 group was 2.36 (1.43-3.87). After adjusting for other cardiovascular risk factors, the HR of stage-2 was 2.24(1.36-3.69). In subjects aged ≥75, normotensive subjects were at a higher risk of cardiovascular mortality after adjusting for age, sex and cardiovascular risk factors with a HR of 1.66 (1.10-2.52).

Conclusion: Blood pressure impact on cardiovascular mortality is markedly different between old and very old Mexican Americans. Stage-2 blood pressure was associated with higher risk of cardiovascular mortality among subjects aged 65-74, while normal BP levels were associated with higher risk of mortality among those aged 75 and older.

B29

TRENDS IN ANTIHYPERTENSIVE MEDICATIONS USE AMONG TREATED HYPERTENSIVE MEXICAN AMERICANS AGED 75 AND OLDER.

M. Al Ghatrif,[1,2] L. A. Ray,[1,2] M. Raji,[1,3] K. S. Markides.[1,2] *1. Sealy Center on Aging, UTMB, Galveston, TX; 2. PMCH, UTMB, Galveston, TX; 3. Internal Medicine-Geriatrics, UTMB, Galveston, TX.*

Supported By: - National Institute on Aging, USA (Grant# AG10939).

- UTMB center for Population Health and Health Disparities (1P50CA105631-02.)

Objective: The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) guideline was published in 2003. We assessed impact of these guidelines on the use of antihypertensive medications among older Mexican Americans during the period from 1993 to 2005.

Design: we compared two samples of non-institutionalized Mexican American men and women aged 75 and older from the Hispanic Established Population for the Epidemiological Study of the Elderly (H-EPESE), a population-based study.

Participants: 345 subjects from the first sample (1993-94) and 277 subjects from the second sample (2004-05) were included. All subjects were hypertensives on treatment.

Settings: Five southwestern states: Texas, New Mexico, Colorado, Arizona, and California.

Measurements: self-reported hypertension (HTN), blood pressure (BP) readings, antihypertensive medications, self-reported diabetes, socio-demographic factors, health care use and Body Mass Index (BMI). The primary outcome variable was the prevalence of use of major classes of antihypertensive medications (Anti-HTN).

Results: Calcium Channel Blockers (CCB) were the most common anti-HTN medication used in 1993-94, while Angiotensin Converting Enzyme inhibitors (ACE-I) were the most common in 2004-05. There was a trend of increasing use of ACE-I and Beta-blockers over this period, while there was a significant decrease in the use of CCB and Vasodilators (VD). ACE-I use increased significantly among subjects aged ≥80 years, women, diabetics and in those with <7 doctor visits per year (v/y). The use of Diuretics remained unchanged between 1993 and 2005. There was a significant increase in Beta-blockers use among those aged ≤80, non-diabetics and those with ≥7 doctor v/y. CCB use decreased significantly among diabetics and those with <7 doctor v/y. The use of vasodilators has significantly decreased in all subgroups except men and those with ≥7 doctor v/y.

Conclusion: We found an increased compliance with JNC7 hypertension treatment guidelines over this period as evidenced by increased ACE-I use among hypertensive patients with diabetes, increase in Beta-blockers use, and a decrease in vasodilators use. In contrast to the JNC7 recommendation, we found no change in diuretics use and a preferential use of newer Anti-HTN medications.

B30

Lifelong physical activity and bone health in elderly men and women: AGES-Reykjavik Study.

N. J. Rianon,[1] T. Lang,[2] G. Sigurdsson,[3] K. Siggeirsdottir,[4] G. Eiriksdottir,[4] S. Sigurdsson,[4] M. Garcia,[5] B. Yu,[5] S. Pajala,[5] A. Koster,[5] V. Gudnason,[6] T. B. Harris.[5] *1. Geriatrics, Baylor College of Medicine, Houston, TX; 2. Radiology, UCSF, San Francisco, CA; 3. Medicine/Endocrinology & Metabolism, University of Iceland, Reykjavik, Iceland; 4. Icelandic Heart Association, Kopavogur, Iceland; 5. LEDB, IRP, NIA, Bethesda, MD; 6. Cardiovascular Genetics, University of Iceland, Reykjavik, Iceland.*

Supported By: This research was supported through a fellowship from the National Institute on Aging

Purpose:

There is inconsistency on whether early, middle, or older life physical activity (PA) has the greatest influence on bone mass maintenance in old age (≥ 65 years). Previous studies are limited in that most include information on early life PA collected through recall when the subjects are much older. We addressed this methodological weakness by using data collected in midlife from the Reykjavik Study and in old age from the AGES-Reykjavik Study in the same participants to assess the association of PA over the lifetime with quantitative computerized tomography (QCT) bone measures in old age.

Method:

We used data on 2,110 men and 2,682 women from the AGES-Reykjavik Study. PA was assessed by report in midlife (mean age 50 years), in old age (≥ 65 years) and throughout life (recalled during old age). QCT acquired vertebral bone mineral density (VBMD) was used to assess the importance of PA in each period. We reported results from separate multivariate logistic models for men and women, adjusted for demographics, behavioral risk factors, diet, social and medical history, muscle strength and walking speed.

Results:

Men who reported lifelong moderate level PA of ≥ 4 hours per week were more likely to have greater VBMD (Odds Ratio comparing highest to lowest quartile VBMD = 1.7, 95% CI = 1.2 to 2.5); and women who reported same amount of PA only in old age were more likely to have greater VBMD (OR, 95% CI = 1.5, 1.01 to 2.2) compared to those who were physically inactive throughout their life, respectively. Compared to men and women who reported no PA at the midlife exam, those reporting greater midlife PA had a 30% greater odds of being in the highest VBMD quartile.

Conclusion:

In both men and women, greater PA reported at midlife is associated with greater VBMD in old age. In men, retrospective recall supported this association but in women PA only at old age was associated with VBMD. We conclude that PA reported at midlife is im-

portant for old age VBMD in both men and women, however the old age recall of prior PA may not be as accurate in women as in men.

B31 New Investigator Awardee

Geriatric Conditions and Subsequent Mortality in Older Patients with Heart Failure.

S. Chaudhry, Y. Wang, T. Gill, H. Krumholz. *Internal Medicine, Yale University, New Haven, CT.*

Purpose: Tools to stratify the risk of adverse outcomes among patients with heart failure have focused on demographic factors, ejection fraction, comorbid diseases, and laboratory values. Our objective was to develop a model for 6-month mortality after hospitalization for heart failure that included both traditional factors and geriatric conditions, specifically dementia and mobility disability, to determine whether geriatric conditions would emerge as strong and independent risk factors.

Methods: We evaluated data from the National Heart Care Project, a quality of care initiative for hospitalized Medicare beneficiaries. Trained data abstractors reviewed medical records of (randomly) selected patients. Geriatric conditions were assessed using information from physician, nursing, and physical therapy notes, as well the discharge summary. Mobility disability was defined as requiring assistance (from a device or another person) or being unable to walk. Dementia was defined as chronic loss of mental function or slowly progressive mental decline. To identify independent predictors of mortality, we derived 1000 data samples using bootstrapping simulation and performed stepwise selection (entry P=0.01 and retain P=0.001) in multivariable logistic regression models for each data sample. Variables retained in more than 80% of simulated stepwise selection models were included in the final multivariable models.

Results: 62, 330 patients were included in the analysis. The mean age was 80 years; 59% were female, 13% were non-white, and 44% had at least one geriatric condition (10% had dementia and 39% had mobility disability). The 6-month mortality rate was 27%. Twenty-one variables were considered for inclusion in the final multivariable model, which had good performance (ROC=0.752). Dementia and mobility disability were among the top predictors of mortality, with 100% occurrence in the simulated regression models and with among the top 5 largest chi-squares and absolute standardized estimates in the final model.

Conclusions: Geriatric conditions are strongly and independently associated with mortality among older patients with heart failure.

	Wald Chi-Square	Standardized Estimate	Odds Ratio	95% Confidence Interval
BUN (mg/dl)	2047.36	0.263	1.025	1.024-1.026
Age (Year)	733.87	0.160	1.038	1.035-1.041
Systolic blood pressure(mmHg)	605.51	-0.191	0.989	0.988-0.990
Mobility Disability	374.91	0.135	1.649	1.568-1.735
Dementia	345.56	0.093	1.770	1.667-1.880

B32

Resting Heart Rate and All-Cause Mortality in Elderly Japanese-American Men: The Honolulu Heart Program.

S. Cholitkul,[1] C. Bell,[1] S. Cholitkul,[1] R. Chen,[2] P. Blanchette,[1] I. Schatz,[1] B. Rodiguez,[1,2] D. Curb,[1,3] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI.*

Supported By: The John A. Hartford Center of Excellence in Geriatrics, Department of Geriatric Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; National Institute on Aging; National Heart, Lung and Blood Institute.

Introduction: Elevated heart rate is a significant predictor for cardiovascular death in many studies. We studied whether resting heart rate in mid-life and in late-life is a risk for mortality in Japanese-American men, a population that has not been previously studied.

Methods: The Honolulu Heart Program is a longitudinal cohort study of Japanese-American men in Hawaii which started in 1965. Resting heart rate was measured as ventricular rate on EKG in mid-life (ages 45-68 years) in 7,997 men at exam 1 (1965-68). Late-life resting heart rate was measured in 3,729 men ages 71-93 years at exam 4 (1991-93). Subjects were divided into quartiles of mid-life and late-life resting heart rate. All-cause mortality data were available through December 2007, providing 42 years of follow-up for the mid-life analysis, and 16 years of follow-up for the late-life analysis. We used chi square, t-tests and Cox proportional hazards models.

Results: Late-life heart rate was significantly associated with mortality (72.9%, 74.7%, 76.5%, 82.8% died during 16 years of follow-up from lowest to highest quartile respectively, $p<0.0001$). In multivariate Cox proportional hazards regression models adjusting for age, BMI, hypertension, diabetes, pack-years smoking, physical activity index, cholesterol, alcohol consumption, and prevalent CHD, stroke and cancer, all-cause mortality was significantly higher in subjects in the second (RR=1.08, 95% CI=1.01-1.16, p=0.03), third (RR=1.08, 95% CI=1.01-1.16, p=0.02) and fourth quartiles (RR=1.12, 95% CI=1.04-1.20, p=0.002) of mid-life heart rate (reference=lowest quartile). Similarly, multivariate Cox proportional hazards models adjusting for the above factors and prevalent dementia found a significant increase in all-cause mortality in the fourth quartile of late-life heart rate (RR= 1.20, 95% CI=1.06-1.35, p=0.003), using the lowest quartile as reference.

Conclusions: All-cause mortality was highest in subjects in the highest quartiles of heart rate in both mid-life and late-life in elderly Japanese-American men. High heart rate may be a marker of underlying disease, and it is not clear whether slowing of heart rate will modify this association.

B33

The Epidemiology of Pain in the Last 2 Years of Life.

A. K. Smith, I. Stijacic Cenzer, E. Widera, K. Puntillo, S. Knight, K. E. Covinsky. *University of California, San Francisco, San Francisco, CA.*

Supported By: National Institute on Aging

Purpose: Pain exerts a profoundly negative effect on quality of life at the end of life, yet the epidemiology of pain at the end of life has not been described. We describe the prevalence and trajectory of pain in the last two years of life among older decedents.

Methods: We analyzed data from subjects who died while enrolled in the Health and Retirement Study, a nationally representative survey of older adults interviewed every 2 years. We used the interview closest to death, and classified subjects into one of 25 cohorts by months between the interview date and death (range 0-24). Our primary outcome, significant pain, was defined by a report that the subject was often troubled by pain of at least moderate severity. We describe the trajectory of significant pain over the last 24 months of life, including patterns by late-life illness trajectory.

Results: The study sample included survey responses from 5,490 decedents (mean age [SD] 78 [11], 77% white, 16% black, 6% Hispanic, 52% women). The prevalence of significant pain increased from 24% 24 months prior to death to 49% in the last month of life (figure). In the last month of life, 50% of subjects with frailty, 52% with heart failure, and 52% with cancer experienced significant pain.

Conclusions: The experience of moderate or severe pain at the end of life is common, increasing in prevalence from one quarter of elders 2 years prior to death to one half of elders in the last month of life. Pain among patients without cancer is common, underscoring the need for clinicians to be vigilant in the assessment and treatment of pain among all older adults.

B34

Hospice and Palliative Care Services for Patient with Dementia: A Survey of Programs.

A. M. Torke,[1,2] L. Holtz,[2] P. Castelluccio,[2] G. A. Sachs.[1,2] *1. Medicine, Indiana University, Indianapolis, IN; 2. IU Center for Aging Research, Regenstrief Institute, Indianapolis, IN.*

Supported By: Supported by a grant from the Alzheimer's Association.

Purpose: Although dementia is a progressive terminal disease, prior research has found that few hospices provide care to patients with a primary diagnosis of dementia— 21% in a 1995 survey(1). We sought to determine whether non-hospice palliative care programs provide services for patients with dementia and whether there has been an increase in the proportion of hospices that provide such care.

Methods: We conducted a cross-sectional telephone survey of a stratified random sample of 900 programs that were members of the National Hospice and Palliative Care Organization. To obtain adequate representation of palliative care programs, we oversampled programs that provided palliative care. Proportions were weighted to account for oversampling.

Preliminary Results: Of 831 eligible programs, we surveyed the executive director (95%) or other administrator (5%) of 291 programs (response rate 35% to date). Using weighted proportions, 99% of programs provided care funded by the traditional hospice insurance benefit. Of these, 92% had provided care in the past year to at least one patient with a primary diagnosis of dementia. In univariate analysis, hospice programs that cared for patients with dementia were more likely to be large (census 51 or more, 40% v. 3%, p<0.0001) to be affiliated with a nursing home (28% v. 0%, p<0.0001) and to be for profit (32% v. 23%, p=0.005). Of the 31% of programs that provided palliative care outside of hospice, 60% had provided care to at least one patient with dementia. These programs were more likely to have large outpatient programs (10 or more, 62% v. 29%, p<0.0001), but smaller inpatient programs (6 or more, 41% v. 48%, p=0.02), to be affiliated with a hospital (46% v. 35%, p=0.0007) or home health agency (45% v. 34% p=0.0005) and less likely to be for profit (23% v. 51% p<0.0001).

Conclusions: The proportion of hospices that serve patients with dementia has grown substantially in the past decade. Although non-hospice palliative care programs provide another option for dementia care, only 60% have recently provided such care. There may be additional barriers to the provision of palliative care compared to hospice.

1. Hanrahan P, Luchins DJ. Access to hospice programs in end-stage dementia: a national survey of hospice programs. J Am Geriatr Soc 1995;43(1):56-9.

B35 New Investigator Awardee

End of Life Preferences and Planning Among Older Latinos.

A. S. Kelley, N. S. Wenger, C. A. Sarkisian. *Department of Medicine, University of California Los Angeles, Los Angeles, CA.*

Supported By: 1. National Research Service Award Fellowship

2. UCLA Hartford Center of Excellence

Purpose: Latinos aged greater than 60 years are the fastest growing segment of the U.S. population. Understanding older Latinos' preferences and beliefs is essential to providing appropriate end of life (EOL) care that is consistent with their values. We aimed to measure EOL care preferences and planning among older Latinos and to examine the relationship between pertinent culture-based attitudes and extent of EOL planning.

Methods: We interviewed inner city, Spanish-speaking Latinos aged 60 or older. Potential participants were randomly selected from participants in an ongoing trial of an intervention to raise physical activity levels being conducted in 27 Los Angeles senior centers. The interview measured EOL care preferences and extent of EOL planning, as well as culture-based attitudes: family-centered decision making, patient autonomy, and trust in healthcare providers. Bivariate analyses and multivariate regression models examined the relationship between these attitudes and EOL care planning.

Results: 147 individuals (83% of those invited) agreed to participate; mean participant age was 70.3 years. The majority were female (77%), of Mexican nativity (68%), had an 8th grade education or less (69%), and reported an income below $15,000/year (66%); 47% had 3 or more medical conditions and 14% had been hospitalized within the past 6 months. If seriously ill, 84% of participants would prefer medical care focused on comfort, yet 47% had never discussed such preferences with their family or doctor and 77% did not have an advance directive. Most participants favored family-centered decision making (64%) and limited patient autonomy (63%). In bivariate analyses, acculturation, education, and desire for autonomy were associated with having an advanced directive (p values <0.03). In a multivariate model including health and sociodemographic characteristics, education > 8th grade, living alone, and being born in the U.S. were independently associated with having an advance directive (p values <0.04).

Conclusions: Older Latinos report low rates of EOL care planning despite a preference for less aggressive, comfort-focused EOL care. Culture-based preferences for family-centered decision making and limited patient autonomy are at odds with fundamental aspects of EOL treatment practices in the U.S., and may place older Latinos at risk of receiving aggressive and burdensome care that is inconsistent with their preferences.

B36

Discussing Physician-Assisted Dying: A Qualitative Study of Doctors' Experiences in the US & the Netherlands.

J. Voorhees,[1] M. Drickamer,[1] J. Rietjens,[2] A. van der Heide.[2] *1. Internal Medicine, Section of Geriatrics, Yale University School of Medicine, New Haven, CT; 2. Public Health, Erasmus University Medical Center, Rotterdam, Netherlands.*

Supported By: Richard K. Gershon M.D. Student Research Fellowship & NIH-NCRR CTSA-T32 Medical Student Research Fellowship, Office of Student Research, Yale University School of Medicine; Section of Geriatrics, Yale Department of Internal Medicine.

Purpose: Euthanasia and physician-assisted suicide are historically controversial practices with varying degrees of legality and acceptance in medical, professional, and public societies around the world. Despite these factors, patients nearing the end of life do, at times, request PAD from their doctors, and therefore discussions occur. The goal of this qualitative study was to further understand the

complex issue of discussing physician-assisted dying (PAD) within the context of doctor-patient interactions, to explore the effects on the doctor-patient relationship, and to elucidate the emotions of the physicians during such discussions.

Methods: Semi-structured, one-on-one interviews were conducted with 36 physicians in the Netherlands and the US (including Oregon) by a single interviewer. Physicians who interact with patients nearing the end of life were purposively sampled with use of the 'snowball' technique to seek out diverse experiences. Ongoing inductive qualitative analysis, aided by NVIVO7 software, directed the data sampling and saturation. A multidisciplinary team analyzed emerging themes and developed relationship models.

Results: Whether or not a physician chooses to participate in PAD, PAD discussion can be a gateway to other end-of-life issues important to patients. A discussion of patients' fears and priorities is therapeutic, and PAD discussions particularly intensify and strengthen the doctor-patient relationship. Physicians who consider participating in PAD, especially where it is legal, find the journey with their patients intense but rewarding. Where PAD is legal, the criteria in place are utilized by physicians to guide responsible communication. Where legal, PAD discussions are more open and honest, and physicians readily discuss cases with colleagues. In contrast, where PAD is illegal, conversations are less explicit, and physicians deal with requests in relative isolation.

Conclusions: PAD is a relevant topic that, along with other end-of-life issues, can be both challenging and rewarding for physicians to discuss with patients. Discussion and consideration of PAD is an energy-consuming yet enriching part of the doctor-patient relationship. Legalization is particularly helpful for providing structure and support for individual doctors who consider participating.

B37 New Investigator Awardee

Uncertainty of Advance Care Planning Treatment Preferences Among Diverse Older Adults.

R. L. Sudore,[1,2] D. Schillinger,[3] T. R. Fried.[4] *1. Medicine/Geriatrics, UCSF, San Francisco, CA; 2. Veterans Affairs, San Francisco, CA; 3. Medicine, UCSF, San Francisco, CA; 4. Medicine/Geriatrics, Yale, Hartford, CT.*

Supported By: NIA, Veterans Affairs, Pfizer Fellowship in Clear Health Communication

Objective:

Hypothetical scenarios are often used in advance care planning (ACP) to assess preferences for future treatment. Older persons may be unprepared to make treatment decisions and uncertain about their preferences. Using a hypothetical scenario, we assessed certainty about treatment preferences among diverse, older adults.

Methods:

205 English and Spanish-speakers, aged ≥ 50 years, were recruited from a county hospital in San Francisco and were given this scenario: "Imagine your doctor said that you have a serious disease and may die within 6 months. You then get very sick. Your doctor thinks that life-support treatments will not help you live longer and will not cure your disease." Participants were asked to choose: all life support (LS) treatments; try LS with an option of stopping; or no LS, and then were asked how certain they were about this decision (very sure, sure, not so sure, not sure at all). Participants were considered to be completely certain if they reported "very sure." We assessed associations between uncertainty and patient characteristics, religiosity, and literacy.

Results:

Mean age of participants was 61 years and 31% were Latino, 25% White, 24% African American, 9% Asian/Pacific Islander,10% were Multi-ethnic, 52% female, 31% had < high school education, 40% had limited literacy, 29% were Spanish-speaking, and 69% had fair-to-poor self-rated health status. Ninety two participants (45%) reported not being entirely certain of their preference: 21% wanted all LS, 30% to try LS, and 49% no LS. Uncertainty prevalence did not vary by treatment preference (p=0.35). In multivariable analyses, uncertainty was associated with being Asian/Pacific Islander (OR 4.90; 95% CI, 1.42-16.90) and Latino vs. White (OR 2.45; 95% CI 1.04-5.81); having limited vs. adequate literacy (OR 1.91; 95% CI 0.99-3.70), and fair-to-poor vs. good-to-excellent health (OR 2.03; 95% CI 1.00-4.15).

Conclusion:

Approximately half of participants were less than completely certain about a scenario-based ACP treatment decision, even though the scenario included a clear outcome of treatment. Uncertainty was more common among minorities, participants with limited literacy, and poor health status. Culturally sensitive, literacy-appropriate tools are needed to help patients prepare for decision making about their future health care.

B38

Understanding Advance Care Planning as a Health Behavior.

T. Fried,[1] K. Bullock,[2] L. Iannone,[1] J. O'Leary.[1] *1. Yale University School of Medicine, West Haven, CT; 2. University of Connecticut School of Social Work, Farmington, CT.*

Supported By: NIA

BACKGROUND: Interventions to increase utilization of advance care planning (ACP) have had only modest effects. It has been proposed that interventions be tailored to individuals' readiness to participate, a concept based on health behavior models. There has been little study of ACP as a health behavior, examined according to the concepts of stages of change, pros/cons, and susceptibility.

METHODS: Qualitative study consisting of focus groups conducted with community-dwelling persons age ≥ 65 and caregivers with experience as surrogate decision-makers, purposefully chosen according to gender, race/ethnicity, engagement in ACP. Participants were asked about their preparations for the future, and they completed an exercise in which they considered their preferences for care when outcomes were uncertain.

RESULTS: A total of 10 groups with 63 older persons and 5 groups with 30 caregivers were conducted. Participants were in various stages of readiness to participate in different ACP processes. For example, they might have completed a living will but not spoken about their goals with loved ones. There was a wide range of pros and cons to participation. Some were generic, such as not wanting to think about death or wanting to ease the burden on loved ones, while others were specific to a given ACP task, such as feeling unable to talk to a loved one. Thinking about circumstances involving uncertainty was particularly difficult for many participants. ACP was just one of many activities, such as funeral planning, that participants engaged in to prepare for the future, but participants rarely related these activities to one another. Experiences with loved ones served as a potent illustration to participants of their susceptibility, or need to engage in ACP.

CONCLUSIONS: Participants' variable readiness to engage in different aspects of ACP suggests the utility of tailored interventions based on individualized assessments of pros and cons. However, the process of ACP will remain limited until older persons are ready to face decision making for end-of-life care under conditions of uncertainty. The powerful nature of individuals' experiences with loved ones may serve as a foundation for beginning the process of ACP. A novel approach to ACP would be to incorporate it into other planning processes, such as funeral planning, to capitalize on times of receptivity to thinking about difficult issues.

B39

Natural Killer Fingerprints of Aging.

A. L. Way,[1] R. G. Mueller,[5] D. L. Hamel,[1] J. J. Michel,[5] A. B. Newman,[2,3] S. A. Studenski,[3] A. N. Vallejo .[4,5] *1. University of Pittsburgh School of Medicine, Pittsburgh, PA; 2. Epidemiology, University of Pittsburgh Medical Center, Pittsburgh, PA; 3. Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA; 4. Immunology, University of Pittsburgh Medical Center, Pittsburgh, PA; 5. Children's Hospital of Pittsburgh, Pittsburgh, PA.*

Supported By: The research reported on this abstract was supported by grants from the NIH (R01 AG022379, R01 AG023629, T35 AG026778, P20 CA103730).

Natural killer (NK) cells and T cells are classically defined by CD16/CD56 co-expression, and by T cell receptor (TCR)/CD3 complex, respectively. We have reported age-dependent accumulation of beneficial, functionally distinctive CD56+ T cells. Hence, we began to investigate whether there are also discrete subsets of NK cells with aging. We examined 137 elderly (>85 years) who are survivors of a longitudinal epidemiological study of aging. Blood cell phenotypes were examined by flow cytometry. Health status was evaluated by self-report of activities of daily living (ADL), by mini-mental examination, and by medical record of hospitalization. Impairment was defined as any ADL difficulty and/or a cognition exam score of < 80 and/or a hospitalization event. Twenty random subjects were re-examined after 3 years. These phenotypes were compared to 13 neonatal cord blood samples.

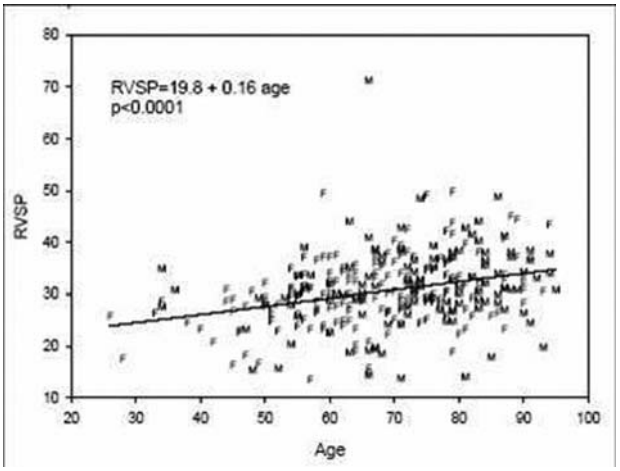
Results demonstrate that older adults expressed significantly fewer numbers of CD56+CD3- NK cells (median: older adults = 1.10%, neonates = 8.37%; $p < 0.01$) but carried CD3+ T cells expressing CD16 (median: older adults = 73.3%, neonates = 3.50%; $p < 0.01$), as compared to neonates. Follow-up of 20 older adults showed that density of CD56 molecules on the residual NK cells decreased over time among impaired individuals ($p < 0.05$). In addition, CD16 density on T cells increased among those who were unimpaired ($p = 0.017$). These data suggest that decline in NK cell numbers and accumulation of CD16+ T cells with aging correlate with health outcomes. Studies are ongoing to further evaluate immunological properties of CD16+ T cells and the residual NK cells, and to complete integration of immune and clinical data to ultimately define immune criteria for healthy aging.

B40

Pulmonary Artery Systolic Pressure Increases with Advancing Age in Healthy Adults.

A. M. Romelus,[1,2] H. Champion,[2] S. Najjar,[3] V. Shetty,[3] S. Zieman.[2] *1. Medicine, University of Florida, Gainesville, FL; 2. Medicine, Johns Hopkins University, Baltimore, MD; 3. Gerontology Research Center, National Institute of Aging, Baltimore, MD.*

BACKGROUND: Age-associated increased central arterial stiffness is a hallmark of aging and results in higher cardiac afterload on the left ventricle. Based on a clinical observation that many older adults are diagnosed with pulmonary hypertension, we tested the hypothesis that pulmonary artery systolic pressure (PASP) increases with advancing age in the absence of disease. METHODS: We studied the relationship between PASP and aging using echocardiography on 543 Baltimore Longitudinal Study of Aging subjects who had reliably measured tricuspid regurgitation. Exclusion criteria included: HIV, systemic sclerosis, ischemic heart disease, acute pulmonary or heart disease, cardiomyopathy, heart failure and mitral, aortic or pulmonic valve disorder. PASP was estimated using right ventricular systolic pressure (RVSP) calculated using the tricuspid pressure gradient + 10 mm Hg for right atrial pressure. We used linear regression models to determine the relationship between RVSP and age for those on and off blood pressure medications and by gender. RESULTS: In 298 subjects (age 26-95), RVSP was positively associated with age in both genders (graph). This relationship persisted in normotensive (n=168) and those on antihypertensives (n=133)($p=0.03$;$p<0.0001$, respectively). CONCLUSIONS: Pulmonary artery pressure increases significantly with age in healthy individuals free of cardiopulmonary disease. Whether this reflects pulmonary artery stiffness, lung changes and/or diastolic dysfunction or if it is pathological needs further study.



RVSP vs. Age in Healthy Adults

B41

QTL Analysis of Aging Recombinant Inbred Mouse Strains to Discover Genes Associated with Individual Differences in Locomotor Function During Aging.

C. R. Dwyer,[1] A. Rossano,[1] E. Fernandez,[2,5] C. Liao,[4,5] S. Pieke-Dahl,[3,5] J. Nelson,[4,5] R. Strong.[3,5] *1. UTHSCSA, San Antonio, TX; 2. GRECC, VA Medical Center, San Antonio, TX; 3. Pharmacology, UTHSCSA, San Antonio, TX; 4. Physiology, UTHSCSA, San Antonio, TX; 5. Sam and Ann Barshop Institute for Longevity and Aging Studies, UTHSCSA, San Antonio, TX.*

Supported By: This work was supported by the Ellison Medical Foundation, the NIA, and the American Federation for Aging Research's Medical Student Training in Aging Research grant.

Loss of locomotor function is a universal manifestation of aging across species and is an important factor in frailty in aging humans. Mouse models have proven useful in studying the factors underlying frailty in geriatric patients. Quantitative trait loci (QTL) analysis is an unbiased approach to identify genes associated with complex traits such as age-related decline in locomotor function. PURPOSE: A previous study from our lab, using QTL analysis of locomotor activity in aging recombinant inbred mouse lines, found a highly significant QTL on chromosome 5 that was related to strain differences in locomotor activity in older mice. The CLOCK gene (Circadian Locomotor Output Cycles Kaput) was identified as a candidate gene of interest in the region identified on chromosome 5. Mutation of this gene has been reported to increase rearing activity and expression of the gene coding for tyrosine hydroxylase, the rate-limiting enzyme in dopamine synthesis. We hypothesized dopamine levels and locomotor activity in aging mice would be related to the QTL on chromosome 5 where CLOCK is located. METHODS: We measured total locomotor activity in 33 recombinant inbred strains of mice using a Columbus Instruments Animal Activity Meter. Dopamine and its metabolites were measured by HPLCec in the brain of the same mice at 26 months of age. RESULTS: QTL analysis did not reveal a significant QTL for dopamine or its metabolites on chromosome 5. The levels of dopamine and its metabolites were not correlated with activity in the same mice. However, QTL analysis of dopamine and metabolites revealed almost significant QTLs associated with chro-

mosomes 9 and X. Thus, these data provide evidence that dopamine and metabolite levels are unrelated to strain differences in locomotor activity in old mice. Moreover, these data show that age-differences in dopamine and metabolites are not related to CLOCK. Future studies will focus on QTLs found on chromosome 9 and X and on other candidate genes found in our previous study. Studies like these may reveal genes underlying individual differences in vulnerability to frailty and may suggest new therapeutic targets for treatment of frailty.

B42

The role of methionine sulfoxide reductase A (MsrA) in the development of obesity and diabetes as a mechanism of oxidative stress-related aging.

F. A. Nwagwu,[1,2] A. B. Salmon,[1,2] A. G. Richardson.[1,2] *1. The University of Texas Health Science Center at San Antonio, San Antonio, TX; 2. The Sam and Ann Barshop Institute for Longevity and Aging Studies, San Antonio, TX.*

Supported By: Medical Student Training in Aging Research Program (MSTAR) Scholar, American Federation for Aging Research (AFAR), National Institute on Aging (NIA)

BACKGROUND: Recently, oxidative stress has been proposed as a proximate mechanism regulating aging and age-related diseases. In addition, oxidative stress has recently been suggested as a key determinant of several metabolic abnormalities, including obesity, diabetes and the metabolic syndrome. Methionine sulfoxide reductase A (MsrA) is an important and unique enzyme in the oxidative stress defense system because it can specifically repair oxidized methionine residues within damaged proteins. Mice lacking MsrA (MsrA-/-) are similar to control mice phenotypically, except that they are relatively more sensitive to oxidative stress.

OBJECTIVE: To determine whether mice deficient in MsrA are susceptible to the development of obesity and diabetic phenotypes when fed a diet high in fat.

Methods: Control and MsrA-/- mice were fed either a diet high in fat (45% kCal from fat) or low in fat (10% kCal from fat) for 12 weeks and assessed for food consumption, gain in body weight, change in body composition, and glucose tolerance.

RESULTS: MsrA was found to have a significant impact on the development of diet-induced obesity and glucose intolerance; mice lacking MsrA showed greater weight gain and fat gain while on a high fat diet relative to control mice on the same diet ($p < 0.05$). Further, MsrA-/- mice developed more severe glucose intolerance and insulin resistance than control mice on this diet.

CONCLUSION: While others have suggested that oxidative stress may be a contributing factor in the development of diabetes, these data showcase a novel finding of the importance of protein oxidation in metabolic diseases and will be valuable to elucidate the pathology behind these diseases in elders and within the blooming aging population. Further investigation into protein oxidation will assist in the development of new tools for the treatment of age-related illnesses, and alleviate the morbidity, mortality, and costs associated with them.

B43

Radiosensitivity of Nitric Oxide Synthase 1 Knockout Mice is Accompanied by Paradoxical Radioresistance of Mesenchymal Stem Cells in vitro.

M. S. Rajagopalan,[1] M. W. Epperly,[1] D. Franicola,[1] T. Dixon,[1] S. Cao,[1] S. A. Studenski,[2] J. S. Greenberger.[1] *1. Dept. of Radiation Oncology, University of Pittsburgh Cancer Institute, Pittsburgh, PA; 2. Division of Geriatric Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA.*

Supported By: National Cancer Institute R01 CA11927

NIH T32 AG21885

Purpose: Mitochondria play a critical role in aging and ionizing radiation-induced apoptosis. Both processes induce superoxide and nitric oxide which combine to form peroxynitrite, leading to a cascade culminating in apoptotic cellular death. Neuronal Nitric Oxide Synthase (NOS1) is one of the three isoforms of nitric oxide synthase (NOS) which localizes to the mitochondrial membrane. If NOS contributes to irradiation-induced apoptosis, then NOS1-/- mouse derived cell lines as well as NOS1-/- mice should be radioresistant.

Methods: Irradiation survival curves were performed on bone marrow stromal cells lines from long term bone marrow cultures from 4 mouse strains: NOS 1-/-, NOS2-/- (inducible NOS), NOS3-/- (endothelial NOS), and control C57BL/6NHsd. Cells were irradiated from 0 to 8 Gy, plated, and colonies of over 50 cells were scored after 10 days of incubation. Data was analyzed with linear quadratic and single-hit, multi-target models. Using an established model of irradiation-induced fibrosis in the C57BL/B6NHsd mouse, NOS1-/-, NOS2-/-, NOS3-/- gene and C57BL/6NHsd mice received thoracic irradiation to 19 Gy and were followed for development of radiation lung damage and survival.

Results: NOS1-/- marrow stromal cells demonstrated significant radiation resistance ($\tilde{n}=20.8\pm5.6$, $Dq=5.2\pm1.3$ Gy) compared to control ($\tilde{n}=8.3\pm2.4$, $Dq=1.8\pm1.5$ Gy) ($p=0.036$, 0.04, respectively). There was no significant difference in radiosensitivity between C57BL/6NHsd, NOS2-/- or NOS3-/- marrow stromal cell lines. In contrast, in two experiments, NOS1-/- thoracic-irradiated mice were more sensitive to 19 Gy irradiation with LD50 (50% of mice dead) of 41 days compared to 156, 148, or 159 for C57BL/6NHsd, NOS2-/- or NOS3-/- mice, respectively ($p<0.0001$). Pathologic evaluation of dead NOS1-/- mice revealed esophageal dilation not detected in other groups.

Discussion: NOS1-/- mice demonstrate significant thoracic radiosensitivity relative to other mouse strains, which was not concordant with paradoxical marrow stromal cell line radioresistance. Study of the radiation pathophysiology of the esophago-gastric neuromuscular junction may reveal the mechanism of the novel rapid thoracic irradiation injury in NOS1-/- mice.

B44

Identification of novel SRF target genes in response to mild overexpression of serum response factor in adult mouse hearts.

X. Zhang,[1] S. Helms,[1] G. Azhar,[1] B. Burton,[1] C. Huang,[1] Y. Zhong,[1] X. Gu,[1] H. Fang,[2] W. Tong,[2] J. Y. Wei.[1] *1. Geriatrics, University of Arkansas for Medical Sciences, GRECC, GRE, CAVHS, Little Rock, AR; 2. National Center for Toxicological Research-FDA, Jefferson, AR.*

Supported By: NIH,UAMS,GRECC,CAVHS

Objective: The transcription factor serum response factor (SRF) regulates cardiac genes during development, maturation and aging. SRF expression increases by about 20% from young adulthood to senescence in rodent hearts. To test the hypothesis that an increased SRF level may alter the expression of SRF target genes and to identify in vivo new SRF target genes, we examined a broad spectrum of cardiac genes in response to mild SRF overexpression.

Methods: We employed a transgenic cardiac-specific mouse model in which the young adult heart resembles that of the typically aged heart.

Results: Using microarray analysis, we identified 207 cardiac genes that were differentially expressed in response to SRF regulation in vivo. Among them, 192 genes had SRF binding motifs (CArG and/or CArG-like elements) in each gene promoter. Of the 56 genes with classic CArG elements, approximately 51 were not previously reported to have CArG elements. We grouped these SRF target genes into 12 functional categories. The mild overexpression of SRF in the mouse heart altered the expression of SRF target genes that are important for cardiac function. For instance, genes associated with cardiac energy metabolism shifted toward that of carbohydrate metabolism and away from fatty acid metabolism. The expression of

genes that are involved in transcription and ion regulation were decreased, but expression of cytoskeletal genes were significantly increased. Our study revealed that SRF is also a regulator of extracellular matrix proteins, including periostin and osteonectin. We also found in public databases containing mouse models of cardiac stress that altered expression of the SRF target genes occurred in these hearts.

Conclusions: SRF target genes are actively regulated under various physiological and pathological conditions, including hemodynamic stress. The elevation of SRF protein in the heart that is observed during typical adult aging in rodents may have a major impact on many SRF target genes, thereby affecting cardiac structure and performance in senescence.

B45

Fourth-year medical student perspectives on geriatrics and geriatric education.

A. S. Bagri,[1,2] R. G. Tiberius.[2] *1. GRECC, Bruce W. Carter Dept of Veterans Affairs Medical Center, Miami, FL; 2. University of Miami Miller School of Medicine, Miami, FL.*

Background. Negative attitudes of medical students toward geriatrics likely contribute to low interest in the field. Some argue that exposure to frail, vulnerable elderly during health care encounters lays the foundation of negative perceptions. Qualitative studies addressing medical students' attitudes are lacking. **Purpose**. To ascertain fourth-year medical students' perspectives of geriatrics and their geriatric educational experiences. **Methods**. Thirty fourth-year medical students at the University of Miami Miller School of Medicine (UMMSM), a former Donald W. Reynolds Foundation grant recipient, participated in focus groups. All completed geriatrics educational activities in all four years of medical school. Responses were audiotaped, and two researchers independently reviewed the transcripts and identified themes and subthemes using the constant comparative method. **Results**. We identified eighteen themes. Although socially rewarding, most students found a number of disadvantages to the practice of geriatrics: it is too challenging; there is insufficient time to spend with patients; care is futile; it is emotionally difficult to witness decline and death; despite fellowship training reimbursement remains low; patients and families have unrealistic expectations that fuel litigation and result in low rates of patient satisfaction; and ethical dilemmas of prolonging life versus improving quality of life are common. Importantly, the majority felt there was an overwhelming amount of time devoted to geriatrics during the basic science years, which some resented. Their clinical experiences in years three and four were much more favorably described. **Conclusions**. In lieu of a distinct geriatrics course in the basic science years, educators could consider integrating geriatric curricula into other courses. Clinical clerkships in geriatrics and palliative care could focus on addressing some of the above concerns. Improvements in student satisfaction and learning may result.

B46

Teaching Communication Skills for Interdisciplinary Geriatrics - Report of a Pilot Study.

B. C. Williams, J. C. Fantone, C. B. White. *Internal Medicine, University of Michigan, Ann Arbor, MI.*

Supported By: No external funds were used for this study.

BACKGROUND: The importance of interdisciplinary team care in geriatrics is well recognized, but few health professions education programs focus on improvement of specific communication skills for interdisciplinary care. We tested the feasibility and acceptability, and estimated the effectiveness of a behaviorally oriented intervention to teach interdisciplinary communication in geriatrics.

METHODS: In each of two half-day sessions, one volunteer student each from medicine, pharmacy, social work, dentistry, and advanced nurse practice: a) individually assessed a standardized patient with mild dementia, functional decline, and multiple medical problems and her caregiver, and b) as a team characterized and prioritized the patient's problems and developed a problem-based care plan. Mid-way through the group discussion, a faculty observer facilitated self-reflection and provided feedback on specific communication behaviors - e.g., querying for meaning, providing positive feedback, and providing rationale for recommendations. Faculty assessed individual students' skills related to the team before and after the reflective intervention and feedback. Learners self-assessed skills and attitudes before and after the feedback; learners rated exercise components and the experience overall.

RESULTS: A total of 9 learners participated. Faculty and learners reported increases in desirable behaviors after the feedback. Learners reported increased confidence or improved attitudes on 38 of 46 items. Mean learner ratings of the exercise were very positive (all components >4.4 on 5-point scale; overall rating 4.9). Most learners valued the individual standardized patient encounter as lending realism to the exercise. In qualitative de-briefing, students described the exercise as transformational, especially valuing new knowledge about and contact with students in other health professions.

CONCLUSIONS: An intensive, behaviorally oriented intervention to improve interdisciplinary communication skills and attitudes is feasible, appears to result in immediate behavior change, and is enthusiastically received by self-selected students. While resource requirements (faculty time, logistics, standardized patients) may limit scalability, it is likely that interventions that focus on behavioral and attitude change will be needed to achieve competency in interdisciplinary communication among health professions students.

B47

Do residents ask about cognition? A practice-based learners' needs assessment.

C. Harada. *Medicine- Gerontol, Geriatrics & Palliative Care, University of Alabama at Birmingham, Birmingham, AL.*

Background: Studies have shown that dementia may be commonly overlooked by primary care providers. This could be due to insufficient training in dementia care in internal medicine (IM) training programs.

Purpose: 1)To determine IM residents' attitudes, confidence, and knowledge about caring for patients with dementia; 2)To describe IM residents' current practice in assessing cognition in their own primary care continuity clinics.

Methods: Residents in the spring of their 3rd and 4th years of IM training at an urban, academic medical center completed a survey assessing their attitudes, confidence, and learning needs when dealing with dementia. They then completed a 16-item knowledge test that assessed familiarity with ACOVE-3 quality indicators for dementia care. This was followed by a chart audit, in which residents reviewed their own progress notes on a series of randomly selected patients over age 75 from primary care clinic, looking for references to cognition.

Results: 27 of 36 residents (75%) completed the survey and knowledge test. Residents felt learning about dementia is an important part of residency training (4.7 on 5-point scale). They reported receiving significant classroom and bedside training in dementia care (mean 10.4 hrs), but confidence levels were low for dementia-specific care (3.5 on 5-point scale) when compared to confidence levels for general medical care (4.5 on 5-point scale). Over 40% of residents felt they needed further training in the following areas: treating cognitive and behavioral symptoms of dementia, assessing decision making capacity, and counseling about dementia medications and prognosis. Mean score on the knowl-

edge test was 66%. In the chart review, 19 of 36 residents (53%) reviewed the notes of 138 patients. Discussion of cognition was initiated by the resident physician for only 17% of patients. None of the patients who were new to clinic (n=51) underwent cognitive screening.

Conclusions: IM residents rarely addressed cognition in older adults in this study. Although residents believed that it is important to learn to care for patients with dementia, they lacked confidence and knowledge about the subject, and this is reflected in their clinical practice. The fact that most residents reported having received significant teaching on the subject of dementia suggests that new teaching methods may be needed to improve the clinical practice of IM residents.

B48

Measurement of intention to pursue a career in geriatrics.

C. Weir,[2,1] D. Brooks,[1] M. A. Supiano.[1,2] *1. University of Utah, Salt Lake City, UT; 2. VA SLC GRECC, Salt Lake City, UT.*

Supported By: D.W. Reynolds Foundation

PURPOSE. Increasing the motivation of trainees to choose geriatrics as a career is a desired outcome of geriatric medical educational interventions. Geriatric attitude scales are used as proxy measures for motivation, yet motivational theories suggest attitudes are only one factor influencing behavior. This study reports the validation of the Attitude Toward a Career in Geriatrics Questionnaire (ATCG) designed to assess motivation to become a geriatrician.

METHODS. Item development was based on the Theory of Planned Behavior and Intrinsic Motivation. Outcome beliefs identified from a literature review included respect for geriatrics as a career, financial rewards, perceived control, interest, and intentions. For baseline evaluation, 299 medical students and 25 PGY1 residents completed the ATCG, the 16-item UCLA Geriatrics Attitude Survey (GAS) and the refined Aging Semantic Differential (ASD) Survey. Construct validation consisted of a confirmatory factor analysis, regression predicting intention and correlations with other attitude measures.

RESULTS. A confirmatory factor analysis with varimax rotation of the ACTG 14 items produced four key factors explaining 72% of the variance among items. Factors were identifiable as: 1) self-efficacy beliefs and interest (23% of variance); 2) normative expectations (20%); 3) beliefs about control (13%); and 4) intentions (16%). All scales had high levels of reliability as measured by Cronbach's alpha (interest=0.88; intention=0.87; norms=0.73; control=0.84; and efficacy=0.85). Regressing *intention* on interest, efficacy, control and norms explained 36% of the variance in intention ($F_{4, 314} = 43.68$; $p < 0.01$). All ATCG scales had low but significant correlations with the GAS and the ASD, ranging from 0.15 to 0.42 with the GAS and from 0.12 to 0.21 with the ASD scales. Overall intentions to seek geriatrics as a career were low (mean of 7.9 on a 3 to 21 scale). Intentions varied significantly across years of training, with those in the PGY1 year expressing the highest level of intention as compared with those in lower levels ($F_{4, 314} = 3.48$; $p = 0.01$, table).

CONCLUSION. Based on theoretical principles, the ATCG is a valid and reliable new instrument to assess motivation for a geriatric career.

Intention means by level of trainee

	MS1 (n=100)	MS2 (n=54)	MS3 (n=69)	MS4 (n=76)	PGY1 (n=25)
Intention	8.1 (1.96)	7.3 (1.97)	8.43 (3.7)	6.9 (4.6)	9.4 (4.0)

scale ranges from 3 to 21; means (SD)

B49

Observed Competency in Medical Students' Abilities to Manage Medications in Geriatric Patients.

R. Leake,[1,4] M. Burzynski,[1,4] E. H. Duthie,[2] D. Simpson,[1,4] D. Brown,[1] L. Meurer,[3,4] D. Bragg,[1] G. Collaborative.[1] *1. Office of Academic Affairs, Medical College of Wisconsin, Milwaukee, WI; 2. Medicine, Medical College of Wisconsin, Milwaukee, WI; 3. Family and Community Medicine, Medical College of Wisconsin, Milwaukee, WI; 4. Injury Research Center, Medical College of Wisconsin, Milwaukee, WI.*

Supported By: Wisconsin Geriatric Education Center and National Institute on Aging: Institutional National Research Service Award T35

Purpose

Medical school graduates must demonstrate achievement of the AAMC/Hartford Consensus Conference's Minimum Geriatric Competencies for Medical Students. 76% of graduating students (2008 AAMC Graduation Questionnaire) report competence (strongly agree + agree) in geriatric medication management, one of eight minimum geriatric competency domains. This observational study reports third year medical student (M3's) competence in geriatric medication management.

Methods

M3's were directly observed by two trained medical students in each of five required clinical rotations during June-July 2008. "Tag-along" observations focused on medication history and management. The M3's observed behaviors were recorded using a checklist derived from an AAMC/Hartford Consensus Conference on Minimum Geriatric Competencies for Medical Students and evidence-based medication management guidelines. Data analysis was performed using SPSS for windows. Study was determined to be exempt following IRB review.

Results

113 clinical encounters were recorded for 58 M3's; 26% of encounters were with geriatric patients. Medications were more frequently addressed in patients aged > 65 than < 65. Medication reviews occurred more often (72%) on Family Medicine ($p = .023$) compared to other rotations. Gender interactions were noted: 14% of female students identified medications with male patients; 0% of male students with male patients, ($p=.003$). 21% of observed geriatric patient interactions included identification of medications that should be avoided or used with caution in older adults. No M3 was observed explaining the impact of age-related changes on medication selection and/or dose.

Conclusions

While medical students report competence in geriatric medication management, direct observation reveals that self-reported competence does not equal behavior in the clinical encounter. Student medication management does differ by patient age, rotation, and gender. This baseline data will serve to guide curricular interventions aimed at preparing students to achieve minimal competencies in geriatric medication management.

B50

Geriatric Neurology Web Module for Third-Year Neurology Clerkship.

H. S. Anderson,[1] M. McDonald.[2] *1. Neurology, University of Kansas Medical Center, Kansas City, KS; 2. Family Medicine/Geriatrics, University of Kansas Medical Center, Kansas City, KS.*

Supported By: This study was supported by the Kansas Reynold's Grant Foundation.

OBJECTIVE: To create a web-module designed to instruct third-year medical students in ten topics critical to geriatric neurology. BACKGROUND: To deliver geriatric neurology content in a cohesive, consistent manner, a web-module was developed for use in the

third-year neurology clerkship. No similar product has been created to specifically address geriatric neurology in medical education. DESIGN/METHODS: A web-module was created for third-year medical students on the neurology clerkship to teach them about ten geriatric neurology topics: Parkinson's disease, stroke, dementia, delirium, peripheral neuropathy, neck/back pain, sleep disorders, temporal arteritis, cranial nerve disorders, and localization of a lesion. Prior to initiation of the web-module, 20 medical students in the neurology clerkship were taught using a standard didactic lecture series. These students were administered a pre- and post-test questionnaire of their knowledge of the geriatric neurology topics. After implementation of the web-module, the geriatric neurology topics were no longer included in the didactic lecture series and instead this information was provided only through the web-module. The first 15 students on the neurology clerkship after implementation of the web-module completed the same pre- and post-test questionnaire to compare performance before and after implementation of the teaching tool. Testing had no effect on the final clerkship grade. RESULTS: In both the standard didactic curriculum and the web-module curriculum, there was a statistically significant improvement in pre- and post-test scores ($p<0.001$), however differences between post-test scores of both curricula were not statistically significant. Pre-test scores, basic science GPA, and Step 1 scores were also not different between the curricula. CONCLUSIONS/RELEVANCE: Knowledge of geriatric neurology improved through use of both geriatric neurology didactic lectures and web-module presentation of these topics, and the outcome (post-test score) between the two curricula was not significantly different. Therefore, the geriatric neurology web-module appears to be an effective means of educating third-year medical students in geriatric neurology topics.

B51

Chronic Illness Care Education: Reflections on a Longitudinal Interprofessional Mentorship Experience.

L. Collins, C. Arenson, C. Jerpbak, P. Kane, R. Dressel, R. Antony, J. Necky, A. Oduneye. *Thomas Jefferson University, Philadelphia, PA.*

Supported By: AAMC-Josiah Macy CICE Grant, 2006-2008, Rattner, PI

Purpose:

Chronic illness prevention and management represents a leading healthcare concern. Well-functioning teams of highly trained professionals are needed to provide rational, patient-centered, evidence-based care of chronic disease. While there has been much evidence to show that interprofessional patient-centered care improves health outcomes, evidence to support interprofessional educational interventions is sparse. The purpose of this study was to perform qualitative analysis of student reflection essays to assess the impact of a longitudinal mentor with chronic illness on the training of future health care professionals.

Methods:

In the academic year 2007-2008, our University introduced a longitudinal, interprofessional mentorship curriculum to address chronic illness care education for first year medical, physical therapy, occupational therapy, and nursing students. Interprofessional teams of 4 to 5 students met with a community-based health mentor on four occasions during the academic year. At the end of this experience, students wrote a reflection essay addressing the impact their health mentor had on their education. Student essay responses were qualitatively analyzed by independent coders from four different disciplines (medicine, nursing, occupational therapy, and public health) and entered into NVivo 8 data analysis software program.

Results:

Qualitative analysis of student essays revealed increased understanding of chronic illness, aging, patient-centered care, and interprofessionalism. The following seven major themes were identified in students essays: 1) Ability to see patient-mentor as a person/individual, 2) Increased positive attitudes toward chronic illness care, 3) Increased positive attitudes toward elderly and aging, 4) Broader understanding of the role of the health care provider, 5) Increased understanding of the importance of health care provider-patient communication, 6) Importance of patient-centered care, and 7) Deeper understanding of the healthcare system.

Conclusions:

Community health mentors with chronic conditions can have a positive impact on health professions' student attitudes and should be utilized in chronic illness care education.

Findings from this study suggest that a longitudinal, interprofessional mentorship program may be a promising tool for the development of higher-quality interprofessional healthcare teams.

B52

Evaluating Verbal and Non-Verbal Communication Skills in an Ethnogeriatric Objective Structured Clinical Examination (OSCE).

L. Collins, A. Schrimmer, J. Diamond, J. Burke. *Thomas Jefferson University, Philadelphia, PA.*

Supported By: National Institute on Mental Health #R24 – MH074779, 2003-2007, Gitlin, PI

Purpose

Communication during medical interviews plays a large role in patient adherence, satisfaction with care, and health outcomes. Both verbal and non-verbal communication skills are central to the development of rapport between patients and health care professionals. However, several studies suggest that physicians are more verbally dominant and less patient-centered in their exchanges with African-American patients. Older African-Americans are at particular risk for communication breakdowns. Yet, interventions designed to bridge the communication gaps between providers and older African-Americans are scarce. The purpose of this study was to assess the role of nonverbal and verbal communication skills on interview evaluations by standardized patients during an ethnogeriatric Objective Structured Clinical Examination (OSCE).

Methods

Interviews from 21 medical students, residents, and fellows in an ethnogeriatric Objective Structured Clinical Examination were analyzed. Each interview was videotaped and evaluated on a 14 item verbal communication checklist and an 8 item non-verbal communication checklist. The verbal checklist was completed by the Standardized Patient (SP) at the time of the encounter and by two independent raters. Non-verbal communication (NVC) behaviors, including body lean, body position, postural change, facial expression, eye contact, affirmative gestures, unpurposive movements, and hand gestures, were assessed and recorded using interactional analyses.

Results

The relationship between verbal and nonverbal communication skills on interview evaluations by standardized patients were examined using bivariate regression analyses. The effect of nonverbal communication skills, including postural change, facial expression, affirmative gestures, unpurposive movements, and hand gestures, on perception of interview quality during an Ethnogeriatric OSCE are significant.

Discussion

The ethnogeriatric OSCE has been proposed as a practical tool to prepare students for working with diverse populations and to assess their performance in cross-cultural interviewing. Incorporating formative and summative evaluation of both verbal and nonverbal communication skills may be a critical component of curricular innovations in ethnogeriatrics such as the Objective Structured Clinical Examination.

B53

A Script Concordance Test (SCT) to Measure Clinical Reasoning for Managing Geriatric Urinary Incontinence (UI).

R. Tunuguntla,[1] J. G. Ouslander,[3] F. Phancao,[2] B. Charlin,[4] R. Gagnon,[4] B. A. Roos,[1,2] J. G. Ruiz.[1,2] *1. GRECC, Bruce W. Carter Dept of Veterans Affairs Medical Center and University of Miami Miller School of Medicine, Miami, FL; 2. Stein Gerontological Institute, Miami, FL; 3. Boca Raton Community Hospital and University of Miami Miller School of Medicine, Boca Raton, FL; 4. University of Montreal, Montreal, QC, Canada.*

Background: The SCT (script concordance test) assesses clinical reasoning, a major domain of clinical competence, in contexts of uncertainty, which are very common in clinical geriatrics practice including urinary incontinence (UI). Although a relatively new method, the SCT has demonstrated good reliability and validity. **Aim**: To validate a SCT to measure the clinical reasoning skills of medical trainees related to managing geriatric UI. **Methods**: An expert in geriatric UI and 2 board-certified geriatricians developed 155 SCT questions related to geriatric UI. After the questions were reviewed by a urologist and a geriatrician with expertise in UI, the researchers selected 100 questions covering the major clinical topics in UI. The SCT requires 3 components: (1) a clinical vignette; (2) a 5-point Likert scale capturing examinees' responses; (3) a scoring method that accounts for variation of answers among a group of experts. A reference panel of 15 board-certified geriatricians took this test along with 8 geriatrics fellows in the last month of training, 2 former fellows (within a year of graduation), and 2 interns rotating in geriatrics. All items with negative total correlation were discarded; the remaining questions were used to calculate the global score. Differences within and between groups' means were examined by 1-way analysis of variance (ANOVA). The next phase will be to administer this SCT to a new group of primary care physicians, fellows, residents, and medical students. **Results**: For the initial group tested, Cronbach's alpha for the final 70 questions was 0.82. The mean score for the reference panel was 79 ± 7 and for participants was 68 ± 9. The difference in mean score for the reference panel and participants was statistically significant, P = 0.002. **Conclusion**: The initial geriatric UI SCT demonstrated good reliability and construct validity between a reference panel and other participants and should be a useful tool to assess clinical geriatric UI practice.

B54

Examining the 1:1 Continuous Observation Program at an Academic Teaching Hospital.

T. Y. Lee,[1] J. Salzberg,[2] R. Adelman.[1] *1. Internal Medicine/Geriatrics, Weill Cornell Medical College, New York, NY; 2. New York University College of Nursing, New York, NY.*

Supported By: US Dept of Health and Human Resources/HRSA, Geriatric Academic Career Award

Abstract Body : Background: Hospitalized confused elderly patients are often assigned a 1:1 "companion" to provide continuous observation to ensure patient safety and minimize unwanted events. Despite the expense of this program, observations from hospital staff about its effectiveness have been mixed. Objective: Describe the characteristics of patients who are assigned a 1:1 companion; survey these patients' companions and hospital staff about their knowledge about the 1:1 program. Methods: All non-ICU 1:1 inpatients at New York Presbyterian Hospital - Weill Cornell Medical College during a 1 week period were identified. Patients' charts were reviewed for demographics, reason for 1:1 order, length of stay, etc. Patients' 1:1 companions were contacted by phone to obtain information about their past training/experience, knowledge and report of expected duties, etc. Also, the hospital staff involved in these patients' care was contacted by email to complete a survey about their knowledge and attitudes about the 1:1 program. Results: Data were collected from 28 patients: mean age was 69 (range 23-95), 57% were male, 78% were agitated/confused, 14% were suicidal, 46% had a history of cognitive impairment, 19% required physical restraint use, mean length of stay was 21 days. Out of 53 companions, 23 (43%) participated: 95% were female, 83% were black, 86% were CNAs, 68% felt most uncomfortable being assigned to a physically aggressive patient, 52% felt appreciated by the nursing staff, only 13% felt appreciated by doctors. Out of 94 hospital staff who provided care to the 1:1 patients, 27 (28%) completed the survey: 44% were MDs, 18% were CSWs, 11% were RNs; 51% were aware that the companion's role is to assist patients with ADLs; 44% reported companions were utilized effectively. Conclusion: Many hospitalized confused patients requiring continuous observation are elderly. 1:1 companions assigned to these patients do not feel appreciated by the medical staff and feel uncomfortable attempting to manage aggressive patients. Interestingly, hospital staff are not aware of some of the responsibilities of the companion and report they are not utilized effectively. Interventions designed to improve the 1:1 continuous observation program at NYPH will likely need to focus on educational strategies aimed at both companions and hospital staff.

B55 New Investigator Awardee

Incidence and Risk Factors for Fecal Incontinence in Older Adults.

A. D. Markland,[1,2] P. S. Goode,[1,2] K. L. Burgio,[1,2] D. T. Redden,[2,1] P. Baker,[2,1] R. M. Allman.[1,2] *1. Birmingham/Atlanta VA GRECC, Birmingham, AL; 2. Gerontology, Geriatrics, & Palliative Care, University of Alabama at Birmingham, Birmingham, AL.*

Supported By: AG15062 (RMA); Veterans Administration RR&D Career Development Award (ADM); Hartford/Southeast Center of Excellence in Geriatric Medicine (ADM)

Objectives: Prevalence of fecal incontinence (FI) ranges from 2-24% in community-dwelling older adults; however, data on FI incidence is sparse. Our objectives were to examine the incidence of FI in community-dwelling older adults and identify risk factors associated with its development.

Methods: A population-based, prospective longitudinal study was designed based on a random sample of Medicare beneficiaries in Alabama and stratified to include: 50% African Americans (AA), 50% men, and 50% rural participants. In home assessments performed at baseline and 4 years later measured self-reported bowel symptoms (diarrhea and constipation), depression (Geriatric Depression Scale), self-rated health, functional status (short physical performance battery). Medical diagnoses were verified by medical record review and used to calculate Charlson co-morbidity scores. Incident FI was defined as the loss of control of bowels that occurred in the last year.

Results: After 4 years, 624/1000 participants with a mean age of 78 ± 6 years responded (217 deaths and 159 missing/withdrew). Participants who were dead/missing were older compared to those alive at 4 years (77 vs. 74 years, p<.001), but had no differences in race, baseline FI, or co-morbidity scores. FI prevalence 12% (120/1000) at baseline and 20% (122/624) at 4 years. Of participants without FI at baseline (n = 557), 17% (93/557) developed FI (incidence). Of participants with FI at baseline (n=67), 57% (38/67) had no FI at 4 years (remission). In multivariable logistic regression analysis controlling for age, race, and rural residence, significant independent baseline predictors (odds ratio, 95% confidence interval) for incident FI included depression (OR 2.6, 95% CI 1.2, 5.8) and urinary incontinence (OR 2.0, 95% CI 1.2, 3.2). No differences were seen according to gender, diarrhea, co-morbidity scores, self-rated health, or physical performance for incident FI.

Conclusions: FI is common among older adults with increased prevalence over 4 years. Depression and urinary incontinence were risk factors for developing FI. FI and urinary incontinence may share common pathophysiologic mechanisms and both need regular assessment in older adults.

B56

Effects of Testosterone on Bone and Muscle in Frail, Older Men.

A. M. Kenny,[1] A. Kleppinger,[1] K. Annis,[1] M. Rathier,[2,1] B. Browner,[4] J. O. Judge,[5] D. McGee.[3] *1. Center on Aging, University of Connecticut Health Center, Farmington, CT; 2. VA Connecticut Healthcare System, Newington, CT; 3. Department of Statistics, Florida State University, Tallahassee, FL; 4. Muscloskeletal Institute, University of Connecticut Health Center, Farmington, CT; 5. Evercare Connecticut, Hartford, CT.*

Supported By: NIH R01 AG1, General Clinical Research Center (MO1-RR06192) and the Claude Pepper OAIC (5P60-AG13631). Solvay Pharmaceuticals provided drug for the study free of charge

Context

Testosterone supplementation in older men has been used exclusively in a healthy population.

Objective

To investigate the effects of testosterone supplementation on bone, body composition, muscle, physical function, and safety in frail older men selected for osteoporosis.

Design, setting and participants

Double-blind, randomized, placebo-controlled trial of 131 frail men between the ages of 57 to 95 years (mean 77.1 + 7.6 years) with the low testosterone (T) level, history of non-traumatic fracture or bone mineral density (BMD) T-score of < -2.0, and some aspect of frailty.

Intervention

Participants received 5 mg/day testosterone (AndroGel™) or placebo for 12-24 months; all received calcium (1000 mg/day) and cholecalciferol (1000 IU/day).

Main outcome measures

BMD of hip, lumbar spine, and mid-radius, body composition, sex and calcium regulating hormones, bone turnover markers, strength, physical performance, and safety parameters.

Results

Eighty-nine men (68%) completed 12 months and 58 men (44%) completed 24 months. Study adherence with gel usage was 54%. T and bioavailable T levels at 12 months were 20.23 nmol/L and 5.45 nmol/L in the treatment group. BMD changes were increases at femoral neck (p=.12), lumbar spine (p=.005) and decrease at the mid-radius (p=.0008). There was a significant increase in lean mass and decrease in fat mass, no significant differences in strength or physical performance. Finally, there were no significant differences in safety parameters including cholesterol, prostate or hematocrit.

Conclusion

Older, frail men were minimally compliant with transdermal testosterone or placebo therapy resulting in modest increases in testosterone levels, favorable changes in body composition, modest changes in axial BMD, but no substantial changes muscle strength or physical performance.

B57

The Association of Nocturia with Incident Falls in an Elderly Community-Dwelling Cohort.

C. Vaughan,[1,2] C. Brown,[3,4] K. Burgio,[3,4] P. Goode,[3,4] R. Allman,[3,4] T. Johnson.[1,2] *1. Birmingham/Atlanta GRECC, Atlanta, GA; 2. Emory University, Atlanta, GA; 3. Birmingham/Atlanta GRECC, Birmingham, AL; 4. University of Alabama at Birmingham, Birmingham, AL.*

Supported By: NIA AG15062, John A. Hartford Foundation/Southeast Center of Excellence in Geriatric Research, Birmingham/Atlanta VA Geriatric Research, Education, and Clinical Center (GRECC)

Introduction: Nocturia, waking at night to void, increases in prevalence with increasing age. In a cross-sectional study of older, community-dwelling adults, nocturia was associated with a nearly two-fold increased risk of falling. No longitudinal, population-based studies examining the relationship of nocturia to falls have been reported. **Methods**: The University of Alabama at Birmingham Study of Aging is a prospective cohort study of 1000 community-dwelling older adults designed to examine risk factors for impaired mobility. Subjects were recruited from a stratified, random sample of Medicare beneficiaries to include equal numbers of black women, black men, white women and white men. Nocturia was assessed at baseline and falls were assessed at baseline and every 6 months. Data were obtained with the questions: 'How many times do you usually get up at night to urinate?' and 'In the past year/6 months have you fallen?' The analysis in this study was limited to those reporting no fall in the 12 months prior to baseline. **Results**: 692 individuals (mean age 74.5±6.2, 48% female, 52% black) did not fall in the 12 months prior to baseline. Of these, 214 reported at least one fall during 3 years of follow-up. Fallers and non-fallers did not differ in the diagnoses of hypertension, stroke, or orthostatic hypotension. Fallers were more likely diabetic, but diabetes was not a risk factor for falls in final model development. In unadjusted analysis, ≥ 3 nightly episodes of nocturia was associated with incident falls (RR=1.27,95% CI(1.01-1.60)). After logistic regression controlling for age, gender, race, and gait speed, ≥ 3 nightly episodes of nocturia was associated with an increased risk of falling (RR=1.26,(1.01-1.59)). **Discussion**: In a racially diverse, community-based sample of older adults who had not fallen in the past year, nocturia ≥ 3 times a night was associated in multivariable analysis with a 25% increased risk of an incident fall within 3 years. Controlling for gait speed-a marker of impaired mobility previously associated with accidental falls-had little impact on the effect size. While this study has several advantages over previous reports (longitudinal follow-up, performance-based measures of function, population-based sampling), causality cannot be ascertained.

B58

Sleep Disturbances and Frailty in Community-Living Older Persons.

C. Fragoso,[1,2] E. A. Gahbauer,[1] P. H. Van Ness,[1] T. M. Gill.[1] *1. Internal Medicine, Yale University, New Haven, CT; 2. Internal Medicine, VA Connecticut, West Haven, CT.*

Background: Frailty is a geriatric syndrome that is highly prevalent and associated with adverse outcomes. Therapeutic strategies are limited, however, in part because the pathophysiology of frailty is not firmly established. Because they predict similar outcomes, we postulated that sleep disturbances might be associated with frailty.

Methods: We evaluated 374 community-living persons, aged ≥ 78 years. Frailty was based on the Fried phenotype, while sleep disturbances were defined as daytime drowsiness, based on an Epworth Sleepiness Scale (ESS) score ≥ 10, and as subthreshold and clinical insomnia, based on Insomnia Severity Index (ISI) scores of 8-to-14 and > 14, respectively.

Results: The mean age was 84.3 years; 87 (23.8%) participants were drowsy, 122 (32.8%) had subthreshold insomnia, 38 (10.2%) had clinical insomnia, and 154 (41.2%) were frail. There was a significant association between drowsiness and frailty, with unadjusted and adjusted odds ratios (OR) of 3.79 (95% confidence interval: 2.29, 6.29) and 3.67 (2.03, 6.61), respectively. In contrast, clinical insomnia was significantly associated with frailty in the unadjusted analysis (OR, 2.77 [1.36, 5.67]), but not the adjusted analysis (OR, 1.93 [0.81, 4.61]); and subthreshold insomnia was not associated with frailty in either the unadjusted or adjusted analysis.

Conclusion: Among older persons, sleep disturbances that present with daytime drowsiness, but not insomnia, are independently associated with frailty. Because drowsiness is potentially remediable, future studies should determine whether there is a temporal relationship between drowsiness and frailty, with the ultimate goal of informing interventions to reverse or prevent the progression of frailty.

B59

Psychological burden related to urge urinary incontinence predicts and its change correlates with therapeutic response to biofeedback in older women.

C. I. Cheng,[1] S. D. Tadic,[2] S. Perera,[2] D. Griffiths,[2] W. Schaefer,[2] M. A. Riley,[2] L. Organist,[2] N. M. Resnick.[2] *1. University of Pittsburgh School of Medicine, Pittsburgh, PA; 2. Department of Medicine, Division of Geriatrics, University of Pittsburgh, Pittsburgh, PA.*

Supported By: NIH: T35 AG026778, RO1AG020629, K23AG031916-0, K12 RR024154-02; John A. Hartford Center of Excellence in Geriatric Medicine

INTRODUCTION & OBJECTIVES: Urge urinary incontinence (UI) drug regimens are of only modest efficacy and do not adequately address the associated psychological aspects. By contrast, biofeedback (BFB) is as effective as drugs, is free of side effects, and might also address the psychological burden. We studied the relationship between psychological burden and UI response to BFB to determine whether the burden predicted response (Aim 1) and whether UI improvement correlated with an improvement in psychological burden (Aim 2).

METHODS: We conducted a secondary analysis of a prospective study of 175 women >60 yrs with urge UI treated with BFB. Outcome measures were obtained before and after therapy. UI measures included weekly UI frequency and daily leakage amount as assessed by 3-day bladder diary and pad test. Psychological burden was assessed with the Urge Impact Scale (URIS-24) and its psychological domains of burden, perception of control, and self-concept. We also assessed the presence of a history or symptoms of depression before therapy (SF-36 Mental Component Subscale-MCS and Center for Epidemiologic Studies Short Depression Scale-CES-D10); self-efficacy (Broome scale); anxiety; and self-esteem. We used a general linear regression to model the potential relationship of each domain with therapeutic response.

RESULTS: Aim 1: Psychological burden impaired therapeutic response. Women with high baseline scores for depressive symptoms improved less than others (by 7.3 incontinence episodes/wk, p=0.01) as did those with worse perception of control (p=0.004). Aim 2: Improved UI frequency was associated with improvement of self-efficacy (p=0.0006), perception of control (p=0.006), self-concept (p=0.047), self-esteem (p=0.02) and anxiety (p=0.0001). Similar results were obtained for improvement in urine leakage.

CONCLUSIONS: Psychological burden significantly impairs the response of urge UI to BFB therapy in older women. Careful assessment and treatment of this burden may significantly improve the UI response.

B60

Comorbid Chronic Diseases and Geriatric Conditions: A New Approach.

C. Cigolle,[1,2] J. Liang,[3] W. Ye,[4] C. S. Blaum.[5,2] *1. Family Medicine, University of Michigan, Ann Arbor, MI; 2. Geriatric Research, Clinical and Education Center, VA Ann Arbor Healthcare System, Ann Arbor, MI; 3. Health Management and Policy, School of Public Health, University of Michigan, Ann Arbor, MI; 4. Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI; 5. Internal Medicine, University of Michigan, Ann Arbor, MI.*

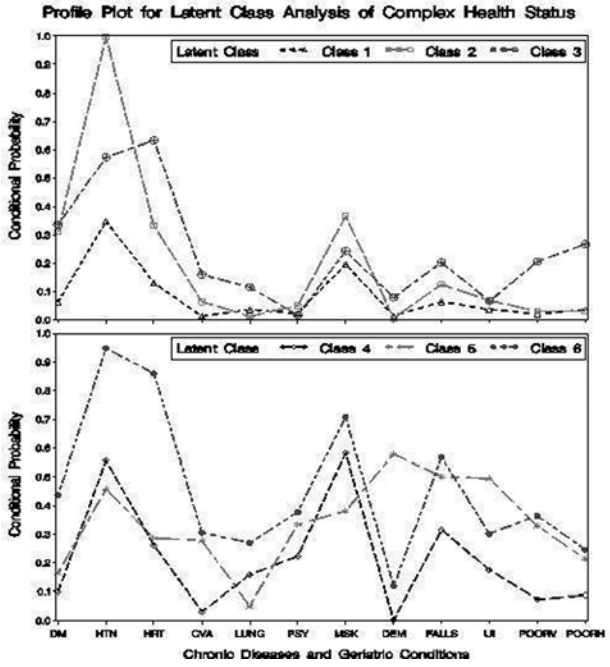
Supported By: NIH-NCRR KL2 Mentored Clinical Scholars Award

The disease model is limited as an approach to older adults' comorbidity. Their health status may be better understood by considering configurations (or profiles) of chronic diseases in conjunction with geriatric conditions. We hypothesized that distinct configurations of diseases and conditions exist (e.g., diabetes cluster).

We analyzed the 2004 wave of the Health and Retirement Study, a nationally-representative health interview survey. Our study sample included adults >=65 years old (n=11,113, representing 37.1 million). Variables included 7 chronic diseases (diabetes DM, hypertension HTN, heart HRT, stroke CVA, lung LUNG, psychiatric PSY, musculoskeletal MSK) and 5 geriatric conditions (dementia DEM, falls FALLS, incontinence UI, poor vision POORV, poor hearing POORH). We used latent class analysis to examine profiles/clusters of health status.

Six profiles were identified (Figure): 1) Healthy, 47% of older adults nationally. 2) Intermediate (diabetes/hypertension), 19%. 3) Intermediate (diabetes/hypertension/heart), 9%. 4) Intermediate (without diabetes), 15%. 5) Dementia with geriatric conditions, 6%. 6) Multimorbid without dementia, 4%.

Latent classes or profiles of diseases and geriatric conditions may lead to new insights concerning comorbidity. Diabetes, heart disease, and cognitive status play key roles in defining clusters of health status in older adults.



B61

THE INFLUENCE OF AMBULATION DURING HOSPITALIZATION ON THE DEVELOPMENT OF DELIRIUM IN OLDER PATIENTS ADMITTED FOR ACUTE DISEASE.

E. M. Sanchez, M. Alonso, C. Gonzalez, J. Ortiz, J. Serra, F. Flores, R. Barrera, B. Montero, M. Vidan. *Geriatrics, H.G.U.Gregorio Marañon, Madrid, Madrid, Spain.*

OBJETIVE: To analyze if ambulation during hospitalization in older patients with delirium risk, is associated with lower incidence of delirium.

METHODS:Prospective, cohort study including all patients aged > 70 years with at least one risk factor to develop delirium, hospitalized in Internal Medicine or Geriatric wards of a university hospital from April 2006 to December 2007. Ambulation was defined if patient walked at least once daily from second admission day to discharge. Delirium was prospectively assessed daily using the Confussion Assessment Method criteria.

We also collected sociodemographic, clinical (comorbidity, Apache severity index) and functional variables (independence in six activities of daily living (ADL) and mobility)

RESULTS:751 patients were included.Mean age was 83 years. 53% women; Infectious disease was the most frequent cause of admission (40%). Charlson Index averaged 2.6±2.4, and Apache II Index was11± 4.The 18% had dementia diagnosis. Only 27% of the patients were independent for all the ADL and 50% for mobility. The 63% of patients that were able to walk before admission, walked daily during hospitalization. Delirium incidence was lower among patients with daily ambulation than among those who did not walked (10% vs 24.7%, p<0.01). Other factors that showed association with delirium development were age, dementia, worse previous functional status, visual impairment and length of stay. Multivariate analyses including age, dementia, number of ADL performed, visual impairment and length of stay revealed that ambulation during hospitalization was associated with 50% of lower risk of developing delirium (OR0.5, 95%CI,0.32-0.78)

CONCLUSIONS:In older patients at risk of developing delirium admitted to hospital for acute diseases, daily ambulation during admission is independently associated with a lower incidence of delirium. Encouraging older patients to walk daily during hospitalization could be an easy an inexpensive intervention for delirium prevention.

B62

Once-yearly Zoledronic Acid is Effective in Old Age.

S. Boonen,[1] D. Black,[2] C. Colon-Emeric,[3] R. Eastell,[4] J. Magaziner,[5] P. Mesenbrink,[6] E. F. Eriksen,[7] K. W. Lyles.[3] *1. University of Leuven, Leuven, Belgium; 2. UCSF, San Francisco, CA; 3. Duke University and VA Medical Centers, Durham, NC; 4. University of Sheffield, Sheffield, United Kingdom; 5. University of Maryland, Baltimore, MD; 6. Novartis Pharmaceuticals, East Hanover, NJ; 7. Novartis Pharma AG, Basel, Switzerland.*

Supported By: Novartis Pharma AG

Purpose: Although about 40% of fragility fractures arise in women ≥75 years, a vast majority of elderly patients receive no anti-osteoporotic treatment (perceived to be too late to alter the disease course) and patients are generally non-compliant with antiresorptive therapies (~20–30% of patients may abandon treatment within 6–12 months). The aim of this analysis was to determine whether intravenous zoledronic acid (ZOL), which reduces risk of vertebral and non-vertebral fractures in postmenopausal women with osteoporosis, is effective in the elderly.

Study methods: We pooled data from women ≥75 years enrolled in two trials with ZOL: the HORIZON Pivotal Fracture Trial and the HORIZON Recurrent Fracture Trial (H-RFT). Approximately 3800 women ≥75 years with documented osteoporosis or a recent hip fracture were randomly assigned to receive an infusion of ZOL 5mg (n=1961) or placebo (n=1926) at baseline, 12 and 24 months. Because morphometric vertebral fractures were not assessed in H-RFT, the focus of this analysis is on clinical (including clinical vertebral) fractures.

Results: Statistically significant 1- and 3-year risk reductions for clinical fractures were observed (P=0.026 and P<0.0001, respectively). Incidence of new clinical fractures over 1 year was 4.12% with ZOL *vs* 5.74% with placebo [hazard ratio (HR) *vs* placebo (95%CI) = 0.72 (0.54, 0.96)]. Over 3 years, the incidence was 10.79% with ZOL *vs* 16.64% with placebo [HR (95%CI) = 0.65 (0.54, 0.78)]. Further subgroup analyses revealed 3-year risk reductions of clinical vertebral [HR (95% CI) = 0.34 (0.21, 0.55), P<0.0001)] and non-vertebral fractures [HR (95%CI) = 0.73 (0.60, 0.90), P=0.0025)] for ZOL patients.

Conclusion: In elderly osteoporotic women, once-yearly ZOL 5mg was associated with significant prevention of clinical fractures (including vertebral and non-vertebral). An annual infusion of ZOL 5mg may optimise anti-fracture efficacy in geriatric patients as it addresses the non-adherence common with this class of drug which is responsible for compromised fracture reduction efficacy and increased medical costs.

B63

Bone Mineral Density (BMD)After Hip Fracture: Variations in Response to Once-Yearly i.v. Zoledronic acid (ZOL) 5 mg.

J. Magaziner,[1] D. Orwig,[1] K. W. Lyles,[2] L. Nordsletten,[3] S. Boonen,[4] J. Adachi,[5] C. Colon-Emeric,[2] C. Bucci-Rechtweg,[6] P. Mesenbrink,[6] C. Pieper.[2] *1. University of Maryland,, Baltimore, MD; 2. Duke University and VA Medical Centers, Durham, NC; 3. Ullevaal University Hospital, Oslo, Norway; 4. University of Leuven, Leuven, Belgium; 5. McMaster University, Hamilton, ON, Canada; 6. Novartis Pharmaceuticals, East Hanover, NJ.*

Supported By: Novartis Pharma AG

Purpose: Lyles *et al* reported a 35% risk-reduction of all clinical fractures along with significant increases in total hip (TH) and femoral neck (FN) BMD with ZOL *vs.* placebo. This retrospective analysis was to identify the subgroup of patients who had greater/lesser BMD benefit following a hip fracture.

Methods: 2127 recent hip fracture patients were randomized to receive a once-yearly i.v. ZOL 5 mg or placebo. ANOVA models (with treatment, geographic region, subgroup, and treatment-by-subgroup interaction) for the percentage change in TH and FN BMD relative to baseline were used to evaluate the effects of ZOL within and across the subgroups. Treatment-by-subgroup interaction was considered significant if p<0.10. Subgroups included baseline levels of gender, age, body mass index, baseline FN BMD, location of hip fracture, fracture history, and mental status by The Short Portable Mental Status Questionnaire.

Results: Overall, ZOL 5 mg consistently improved TH and FN BMD at Months 12 and 24 *vs.* placebo across all subgroups. The table shows the subgroups that achieved greater statistically significant improvement in TH or FN BMD with ZOL *vs.* placebo.

Conclusions: ZOL consistently showed a reduction in fracture risk and mortality as well as an increased TH or FN BMD at Months 12 and 24 relative to baseline across all subgroups. In addition, patients at highest risk for bone loss after hip fracture repair (aged ≥ 85 yrs, BMD T-score < 2.5, history of vertebral and non-vertebral fracture in addition to the baseline hip fracture) experienced greater increases in BMD than observed for the rest of the ZOL-treated population *vs.* placebo.

Reference

Lyles KW *et al.* NEJM 2007; 357:1799-1809.

Subgroups with relatively increased total hip (TH) or femoral neck (FN) BMD

Subgroups	Variables	LS Mean difference % (p-value) Month 12	Month 24
Aged ≥ 85 yrs	% change in TH BMD	6.5 (0.0045)	-
T-score <-2.5	% change in TH BMD	4.5 (<0.0001)	-
Fracture history (vertebral and non-vertebral)	% change in TH BMD % change in FN BMD	8.7 (0.0031) 7.9 (0.0190)	13.4 (0.0692) 12.8 (0.0682)

B64

Does Timed Up & Go add to gait speed in predicting health, function, and falls in older adults?

L. J. Viccaro,[1] S. A. Studenski.[2] *1. University of Pittsburgh School of Medicine, Pittsburgh, PA; 2. Medicine (Geriatrics), University of Pittsburgh, Pittsburgh, PA.*

Supported By: National Institutes of Health T32 Training Grant (AG 021885), Merck Research Laboratories, Pittsburgh Claude D. Pepper Center (P30 AG 024827).

PURPOSE: While gait speed (GS) predicts many important outcomes in older adults, Timed Up & Go (TUG) is recommended for clinical assessment of mobility and fall risk. It is not clear if TUG

predicts outcomes better than GS. We assessed whether TUG is superior to GS to predict hospitalization, declines in health and function, and falls.

METHODS: This prospective cohort substudy followed 457 adults aged 65+ quarterly for 1 year. Baseline GS and TUG were used to predict decline in health status by EuroQol and SF-36 global health; functional status by NHIS ADL score and SF-36 physical function index (PFI); hospitalization; and single and recurrent falls. To determine if TUG adds to GS in predicting outcomes, logistic regression models were run for GS and TUG, alone and then together, comparing areas under the ROC curves. Analyses were adjusted for age, gender, and baseline status of each outcome.

RESULTS: Participants (44% female, 80% white, mean age 74) had outcome rates ranging from 12% for global health decline to 39% for falls. GS and TUG each alone predicted all outcomes (ROCs 59% to 75% for GS; 59% to 74% for TUG). TUG did not add to GS alone when predicting single or recurrent falls, hospitalization, or decline in health or function.

CONCLUSIONS: GS alone predicts most geriatric outcomes, including falls, as well as TUG. Since TUG takes longer to assess, it may only be clinically useful if its qualitative elements have other types of utility.

B65

DOES GAIT VARIABILITY CONTRIBUTE TO THE IDENTIFICATION OF FRAILTY?

M. M. Montero-Odasso,[1,3] M. Hall,[2] K. T. Hansen,[2] M. Kloseck,[2] M. Speechley.[3] *1. Departement of Medicine, Division of Geriatric Medicine, The University of Western Ontario, London, ON, Canada; 2. Specialized Geriatric Services, St. Joseph's Health Care, London, ON, Canada; 3. Department of Epidemiology and Biostatistics,, The University of Western Ontario, London, ON, Canada.*

Supported By: This study was funded by a research grant from the Canadian Institutes of Health and Reserach (CIHR)

BACKGROUND

Gait variability (GVa), specifically stride time variability, has been shown to predict falls and functional decline in older adults. Recently, GVa has also been associated with the developing of mobility decline and disability; however, the association with frailty has yet to be determined. Our objective was to explore whether GVa is associated with frailty and whether it may contribute to the frailty identification beyond the contribution of gait velocity (GV).

METHODS

Participants were community dwelling older adults able to ambulate one city block without assistance. Frailty was determined using the five components of the frailty phenotype validated by Fried et al. Demographic, cognitive, and medical information was obtained using questionnaires and confirmed in an interview. Grip strength was evaluated using a Jaymar dynamometer. Gait velocity (GV), and stride time were measured under a simple walking task in 3 trials using an electronic walkway (GAITRite®System). Coefficients of variation of stride time (CoV=SD/mean*100) were calculated to assess GVa.

RESULTS

Fifty participants (10♂/40♀, mean age=83±4.5 y/o) were evaluated. Frailty phenotype (minimum 3 of 5 frailty components) was identified in 26%of the participants; 82% had at least one component. GVa was positively correlated with the frailty phenotype ($r = 0.53$, $p<0.01$) and variability increased in a dose-response manner according the number of frailty components (from 5.14% in those with no frailty components to 11.3% in those with 3 or more, $p <0.01$). Overall, a regression model that included both GV and GVa was significant, $F(2,47)=20.57$, $p<0.001$. The amount of variance explained by this model was greater (r-square= 0.47) than the variance explained by gait velocity alone (r-square=0.44), although not significant.

DISCUSSION

This study demonstrated that high gait variability is associated with Frailty. Gait variability increases as the number of components of frailty present increases. Further investigation may point out if gait variability may be able to serve as an additional characteristic of the frailty phenotype.

B66

Percentage Change in BNP as a Predictor of Outcomes in Elderly Patients Admitted for Decompensated Heart Failure.

A. Ramanakumar,[1] R. A. Watson,[1] D. G. Smith,[1] M. Hummel,[1] M. Naglak,[1] M. Hofmann.[1,2] *1. Medicine, Abington Memorial Hospital, Abington, PA; 2. The Muller Center for Senior Health, Abington Memorial Hospital, Abington, PA.*

Supported By: Not funded.

Background: Elderly patients admitted for decompensated HF are frequently re-admitted, and there is currently a lack of simple tests to identify this high-risk group. BNP levels have been shown to correlate closely with left ventricular filling pressures and pulmonary capillary wedge pressure. Thus, we hypothesized that in-hospital percentage change in BNP might be useful in predicting clinical outcomes.

Objective: The aim of this study was to determine if percentage change in B-type natriuretic peptide (BNP) level is a predictor of 6-mo. post-discharge outcomes in elderly patients admitted with decompensated heart failure (HF).

Methods: This was a retrospective observational study of 64 patients whose admission and discharge BNP level was obtained during their hospitalization for decompensated HF at a 600-bed community teaching hospital. We then determined the association between percentage change in BNP and subsequent adverse outcomes (6-mo. mortality and readmission for HF). Percentage change in BNP = (admission BNP-discharge BNP)*100/admission BNP.

Results: Mean age (N = 64) was 80±12 yrs; 50% were male. There were a total of 14 events during the 6-mo. follow-up period (readmission: n=11, death: n=3). The mean percentage change in BNP was 53±25% among patients who were event-free during the 6-mo. follow up whereas the percentage change was 19±25% in patients with death or HF readmission ($p<0.0005$). Receiver operating characteristic (ROC) curve analysis identified a percentage change in BNP value of 40% as the best cut-off for identification of patients at risk of readmission or death with a sensitivity of 86%, specificity of 76% and a negative predictive value of 95%. Area under the ROC curve was 0.84, $p<0.0005$. Among the 7 patients with an in-hospital increase in BNP values, 5 had events, compared with 9 of the 57 patients whose levels decreased ($p=0.004$).

Conclusions: In elderly patients admitted with decompensated HF, percentage change in BNP is a strong predictor of mortality and heart failure rehospitalization. The results suggest that in-hospital percentage change in BNP might serve as a simple measure to assess therapeutic efficacy, and intensification of therapy may be warranted in those patients who fail to achieve a 40% reduction.

B67

Frailty and anthropometry in older people.

R. E. Hubbard,[1] I. A. Lang,[2] K. Rockwood.[1] *1. Geriatric Medicine Research Unit, Dalhousie University and QE II Health Sciences Centre, Halifax, NS, Canada; 2. Department of Public Health, Peninsula Medical School, Exeter, United Kingdom.*

PURPOSE

Frailty has been conceptualized as a wasting disorder with weight loss as a key component. However, obesity is associated with disability and with physiological markers also recently linked with frailty, e.g. increased inflammation and low antioxidant capacity. We aimed to explore the relationship between frailty and body mass index (BMI) in older people.

METHODS

In the English Longitudinal Study of Ageing, data were collected on community-dwelling older adults. Frailty was defined both by an index of accumulated deficits (58 deficits: each index score ranging from 0 when no deficits were present to 1.0 if all 58 were present) and by the Fried phenotype (frailty as 3 or more out of 5 criteria: low grip strength, low physical activity, weight loss of >= 5% since previous measure, slow gait speed and low energy levels). BMI was divided into 5 categories and waist circumference >88cm (for women) and >102 cm (for men) defined as high. 2955 participants aged ≥65 had complete data. Analyses were adjusted for sex, age, level of education, smoking status, and alcohol consumption.

RESULTS

The association between BMI and frailty showed a U-shaped curve. This relationship was consistent across both frailty measures. The lowest Frailty Index (FI) scores and lowest prevalence of Fried frailty were in those with BMI 25 to 30. At each BMI category, and using either measure of frailty, those with a high waist circumference were significantly more frail.

CONCLUSIONS

Both the phenotypic definition of frailty and the Frailty Index show increased levels of frailty amongst those with low and very high BMIs. This U-shaped association between BMI and frailty, and the additional impact of truncal obesity, have important implications for our understanding of health status in older people.

	Frailty Index score		Proportion with Fried frailty	
BMI	Normal waist	High waist	Normal waist	High waist
<20	0.16 (0.15, 0.17)	-	0.20 (0.18, 0.22)	0.36
20 to 25	0.12 (0.12, 0.13)	0.16 (0.15, 0.17)	0.13 (0.12, 0.14)	0.16 (0.13, 0.18)
25 to 30	0.12 (0.12, 0.12)	0.15 (0.15, 0.15)	0.07 (0.06, 0.07)	0.09 (0.08, 0.09)
30 to 35	0.15 (0.14, 0.16)	0.16 (0.16, 0.16)	0.07 (0.05, 0.08)	0.08 (0.08, 0.09)
35 +	-	0.20 (0.20, 0.21)	0.15 (0.05, 0.24)	0.17 (0.16, 0.19)

B68

Antibody Response to Influenza Immunization in Frailty.

T. Qu,[1] J. Bogdanovic,[2] B. Resnick,[3] Q. Xue,[1] X. Xu,[4] J. D. Walston,[1] L. P. Fried,[5] S. X. Leng.[1] *1. Division of Geriatric Medicine & Gerontology, Johns Hopkins University, Baltimore, MD; 2. Division of Allergy & Clinical Immunology, Johns Hopkins University, Baltimore, MD; 3. Gerontology, University of Maryland School of Nursing, Baltimore, MD; 4. Influenza Division, CDC, Atlanta, GA; 5. Mailman School of Public Health, Columbia University, New York, NY.*

Supported By: National Institute on Aging and American Federation of Aging Research

Frailty is an important geriatric syndrome characterized by decreased physiologic reserve and increased vulnerability to stressors. Frail older adults have shown significant immune dysregulations including elevated IL-6 levels, increased frequencies of CCR5+ T cells, and upregulated monocytic expression of several inflammatory and stress-responsive genes, above and beyond age-related senescent immune remodeling. Given the importance of influenza vaccination as a preventive measure of influenza infection and its complications for older adults and as an acceptable in vivo stimulant to the immune system, the purpose of this study is to evaluate antibody response to influenza immunization in frailty. To accomplish this, we administered the standard trivalent inactivated vaccine (TIV) to 17 frail and 22 non-frail community-dwelling older adults over 70 yrs of age (mean age 84.5 yrs, range 72-95) during the 2007-2008 season, funded by the Beeson Award (www.beeson.org). The presence or absence of the syndrome of frailty was determined according to our 5-item validated and widely used frailty criteria. Serum samples were collected from the participants before and 4 weeks after vaccine administration for pre- and post-vaccination antibody evaluation, respectively. Antibody titers to each of the 3 vaccine virus strains were measured using standard hemoglutination inhibition (HI) assay. The results showed that 3 (13%) non-frail participants had a 4-fold antibody response (seroconversion) to H1N1, 4 (18%) were seroconverted to H3N2, and 1 (5%) to B strain. However, among frail participants, only 1 (5%) was seroconverted to H3N2 and none to H1N1 or B strains. In addition, frail participants had significantly lower post-vaccination antibody titers to H1N1 strain than non-frail participants (geometric means: 387 +/- 2.0 vs 222 +/- 2.3, respectively, p= .03). These findings suggest that frailty is associated with poor antibody response to the currently recommended TIV. They provide a basis for future development of more effective influenza immunization strategies for this vulnerable segment of older adult population.

B69

What Subject, Cognitive or Behavioral components influence falls and fall prevention?: A Structural Equation Model.

V. Panzer,[1] J. A. Burleson,[2] L. Wolfson.[1] *1. Neurology, Univ of CT Health Center, Farmington, CT; 2. Community Medicine & Health Care, Univ of CT Health Center, Farmington, CT.*

Purpose: Participation in a Multimedia Fall Prevention (MFP) program significantly reduces falls. MFP increases recognition of fall threats and fall prevention behaviors, both thought to contribute to reducing falls. However, little is known about how cognitive, behavioral and Subject characteristics influence intervention success or the likelihood of a fall. We evaluated the deterministic relationships between fall threat recognition (FTR), prevention behaviors (PB) and falls using Structural Equation Modeling.

Methods: Outcome measures from a clinical trial including 273 Seniors with a history of falls (32% male, 60-96 years, mean age=79, SD=7) were entered into a structural equation model after examination of descriptive statistics and bivariate correlations. A 4 component model was created where uncorrelated Subject variables: Gender, Age, Impairment and Experimental Condition (Multimedia or Usual Fall Prevention) were most distal to falls. Subject variables were presumed to predict 3 progressively more distal outcome measures: 1-FTR, 2-PB; and 3-two parallel but uncorrelated final outcomes a) Time to 2nd Fall, b) Average Falls per week. Non-significant effects were removed from the model. Partial correlation values(r) are presented for significant effects.

Results: In Step 1, Gender(r=.13), MFP(r=.10) and Age(r=-.01) all influence Fall Threat Recognition. Prevention Behaviors are influenced in Step 2 by MFP(r=.20) and FTR(r=.02). Finally, for falls outcomes: a) Time to 2nd Fall is influenced distally by Impairment(r=.83) and proximally by PB(r=.55); while b) Falls per Week is affected by both Impairment(r=.57) and FTR(r=.02). Significant distal outcomes demonstrate that these relationships remain, even when proximal effects are considered.

Conclusion: The MFP program significantly affects cognitive (Fall Threat Recognition) and behavioral (Prevention Behaviors) processes. Gender and Age influence cognitive processes, which in turn influence behavior. The final direct relationships between Fall Threat Recognition or Prevention Behaviors and falls are difficult to interpret with the previous influence of Gender, Age and MFP removed. The relationship between knowing what can cause a fall, prevention efforts and actual falls is not linear. Intervention studies must account for the effects of time and intervening variables.

B70

Plasma Neopterin Levels Are Associated with the Geriatric Syndrome of Frailty Xinping Tian1, MD PhD, Sean Leng2, MD PhD, Huanle Yang2, MS, Alka Jain2, PhD, Jeremy Walston2, MD, and Neal Fedarko2, PhD 1:Department of Medicine, Peking Union Medical College Hospital, Beijing, China 2:Department of Geriatric Medicine and Gerontology, Johns Hopkins Bayview Medical Center, Baltimore, MD.

X. Tian,[1] S. X. Leng,[2] H. Yang,[2] A. Jain,[2] J. Walston,[2] N. Fedarko.[2] *1. Department of Medicine, Peking Union Medical College Hospital, Beijing, China; 2. Department of Geriatric Medicine and Gerontology, Johns Hopkins Bayview Medical Center, Baltimore, MD.*

Objective: Neopterin is produced primarily by activated monocytes/macrophages when stimulated by interferon-gamma; thus it is regarded as a marker for immune system activation, particularly the innate immune system. Frailty is an important geriatric syndrome characterized by a chronic inflammatory process in which several inflammatory biomarkers are elevated. However, the extent of this inflammatory process has not been completely elucidated. The purpose of this study was to evaluate the association between plasma neopterin levels and the geriatric syndrome of frailty.

Methods: The study population is composed of 130 community-dwelling older adults recruited from Baltimore, MD. Frailty status was determined by the validated and widely used 5-item Fried's criteria. Plasma neopterin levels were measured by commercial ELISA kits.

Results: The average age of the study participants was 84.3±4.8 yrs (range 72-97) with the average BMI of 25.6±5.3 kg/m2 (range 14.9-46.4). Forty-seven were frail and 83 were non-frail. The median plasma neopterin level was 9.7 nM (range: 5.3-36.1 nM). There were no significant differences in both BMI and age between frail and non-frail groups. ANOVA test showed that frail participants had significantly higher plasma neopterin levels than non-frail participants (10.7 vs 9.1, p< .05). Logistic regression analysis of log transformed neopterin values revealed that neopterin was correlated with frailty (correlation coefficient=2.9, p= .04).

Conclusion: Elevated plasma neopterin levels and their correlation with frailty suggest activation of monocytes/macrophages in the syndrome of frailty. These findings may shed light on the immunopathogenesis of frailty in old population.

Key words: Neopterin frailty

B71

Racial Disparities in Use of Home Health Services in a National Sample of Medicare Patients with Diabetes.

A. Yeboah-Korang, R. Fortinsky, A. Kleppinger. *School of Medicine, University of Connecticut Health Center, Farmington, CT.*

Supported By: University of Connecticut School of Medicine

2008 Summer Student Research Program

Purpose: Health disparities have been found among racial groups in a wide array of health services, but little is known about disparities in Medicare home health care (HHC). Diabetes is the second most common Medicare HHC diagnosis. Due to the importance of HHC to diabetes patients, and consistent with efforts to better understand and minimize racial disparities in health service use, we examined whether and how racial disparities exist in HHC use in a nationally representative sample of Medicare patients with diabetes.

Methods: We conducted a retrospective cohort study using national Medicare HHC claims data linked to Outcome and Assessment Information Set (OASIS) data in a 20% stratified random sample of Medicare beneficiaries who completed an episode of HHC in 2002. Study inclusion criteria were self reported racial identity of Caucasian, African American, Hispanic or Asian; and a primary HHC diagnosis of type II diabetes. In addition to race, independent variables in multiple regression models included gender, age, severity of diabetes symptoms, and several measures of mental health and functional disability. All of these variables were constructed from OASIS data. HHC use measures (outcomes) based on HHC claims data were: total number and intensity (visits per week) of skilled nursing visits, physical therapy visits, home health aide visits, and visits by all clinical disciplines over a complete episode of HHC.

Results: A total of 9838 patients were included; 64% were women (mean age=74.7±10.4), 62% were Caucasian, 22% African American, 12% Hispanic and 3% Asian. After controlling for other independent variables, compared to Caucasian patients: African American patients received more total home health aide visits but fewer visits per week from nursing, physical therapy, and all clinical staff disciplines combined; Hispanic patients received more total skilled nursing visits and more total visits from all disciplines (all differences p<0.001); and Asian patients received equivalent amounts and intensity of all types of home health visits.

Conclusions: Unlike findings related to many other health services, racial disparities in the use of HHC among Medicare patients with diabetes are quite minimal, although African American patients receive less skilled care after adjusting for the length of episode.

Keywords: health disparities, Medicare home care, diabetes

B72

Prevalence and correlates of urinary incontinence in community dwelling older Latinos.

A. L. Smith,[1] P. Wang,[3] L. V. Rodriguez,[1] C. A. Sarkisian.[2] *1. Urology, UCLA, Los Angeles, CA; 2. Medicine, UCLA, Los Angeles, CA; 3. Epidemiology, UCLA, Los Angeles, CA.*

Supported By: National Institute on Aging

Purpose: Latinos represent the fastest growing group of Americans over age 60. Our aim was to measure the prevalence of urinary incontinence (UI) in older Latinos, and to identify sociodemographic, physical and psychosocial correlates. Methods: We analyzed data from 572 Latinos living in the Los Angeles area participating in Caminemos, a randomized trial of a behavioral intervention to raise walking levels. Participants were recruited from 27 community-based senior centers between August 2005 & August 2007; inclusion criteria were age greater than 60, exercise frequency less than 20 minutes 3 times/week and pedometer reading less than 3500 steps/week. Of 1217 potential participants, 572 (47%) met eligibility criteria and completed a baseline survey as well as a series of physical performance measures (chair-stands, gait speed, balance) from the National Institute on Aging performance battery. UI was measured using the International Consultation on Incontinence item: "How often do you leak urine?" Participants who responded anything other than "never" were classified as having UI. Potential correlates of UI were measured using previously-tested instruments: age, gender, level of education, cognitive function (3MS), activities of daily living, medical comorbidities (Charlson Index), physical and mental health-related quality of life (QOL) (SF-12 PCS and MCS) and depressive symptoms (5-Item Geriatric Depression Scale).

Results:Mean patient age was 73 years (range 60-93). 77% of the participants were women. The overall prevalence of UI was 27%; 30% of women and 18% of men reported leakage (p<0.01). In bivariate analysis all characteristics examined other than age were associated with UI (Table 1). In multivariate analysis, lower cognitive function, greater medical comorbidity, and worse physical health-related QOL were independently associated with UI. Conclusions: UI is highly prevalent among older Latinos. Cognitive impairment, poor physical health related QOL and greater medical comorbidity are each independently associated with UI. Further work is needed to determine the extent to which the UI in this group is modifiable; interventions to decrease UI may represent an important opportunity to improve QOL among older Latinos.

TABLE 1: Urinary Incontinence in Older Latinos †Standardized mean of 0, SD of 1 *Logistic regression included all variables in table independently		Gender (Male vs. Female)	Education (Some High School vs. No HS Completed)	Summary Physical Performance Score†	Cognitive Function (3MS)†	Activity of Daily Living Impairments (Any vs. None)	Number of Medical Comorbidities	Physical QOL Component Summary (SF-12 PCS)†	Mental QOL Component Summary (SF-12 MCS)†	5-item Geriatric Depression Scale (>3 vs. <3)
Bivariate Odds Ratio (OR) (95% CI)	Age 1.02 (0.99-1.05)	**0.54 (0.33-0.87)**	**0.58 (0.33-0.99)**	**0.84 (0.77-0.93)**	**0.97 (0.95-0.98)**	**2.59 (1.76-3.79)**	**1.45 (1.30-1.63)**	**0.95 (0.93-0.97)**	**0.97 (0.95-0.99)**	**2.65 (1.63-4.33)**
*Multivariate OR (95% CI)	1.02 (0.98-1.05)	0.64 (0.37-1.12)	1.49 (0.72-3.05)	0.99 (0.88-1.11)	**0.97 (0.95-0.99)**	1.25 (0.74-2.10)	**1.31 (1.14-1.52)**	**0.97 (0.95-1.00)**	1.00 (0.98-1.02)	1.50 (0.80-2.82)

B73

Screening for Memory Impairment in Hispanic Elders in Primary Care.

D. P. Harris,[1,2] F. Ortiz,[2,4] M. L. Maines,[1,2] F. M. Adler,[5] K. Yu,[5] J. Fitten,[1,4] S. M. Wolf,[1,5] J. Chodosh,[1,3] G. Cahoon,[1,4] D. Barba,[5] B. G. Vickrey.[1,3] *1. Neurology, UCLA David Geffen School of Medicine, Los Angeles, CA; 2. Mary S. Easton Center for Alzheimer's Disease Research, Los Angeles, CA; 3. VA Greater Los Angeles Healthcare Center Los Angeles, Los Angeles, CA; 4. VA Greater Los Angeles Healthcare Center Sepulveda Campus, North Hills, CA; 5. Olive View-UCLA Medical Center, Sylmar, CA.*

Supported By: State of California Department of Health Services

Objectives: (1) Determine prevalence of undiagnosed memory impairment in elderly Hispanic patients seen in a predominantly primary care clinic staffed by rotating internal medicine residents at a county hospital (Olive View-UCLA Medical Center); (2) Identify factors associated with patients' preferences for further clinical evaluation.

Methods: Bilingual research assistants approached consecutive Hispanic patients aged ≥60 years after their visits at one clinic, from May 2007-November 2008. 289 participants (45% of eligibles approached) consented and were interviewed in-person or later by phone for sociodemographic, acculturation, general health data, and memory concerns. Participants were then screened for memory impairment using delayed word recall. Participants screening positive for impairment were offered referral for clinical evaluation and feedback of screening to his/her primary care physician or a clinic attending.

Outcomes: 60 participants (21%) screened positive ("impaired"); 221 were "not impaired". A higher proportion of impaired than not impaired participants had insulin-requiring diabetes (25% vs. 15%, p=0.06) and wanted to talk with their physician 'a great deal' or 'somewhat' about memory concerns (71% vs. 28%, p=0.005). 46 (77%) of impaired participants accepted referral for clinical evaluation. 100% who declined referral versus 60% who accepted referral had ≤8th grade education (p=0.005). Those further below the impairment cutoff were more likely to accept referral (p=0.04).

Conclusions: Screening elderly Hispanics in this setting identifies a substantial proportion with possible memory impairment, many of whom appear willing to undergo further evaluation. However, low education may lead to further refusals for further evaluation. Future analyses will examine the role of system-level factors, such as limited venue for referral and lack of continuity in health care provider, as barriers to follow-up for those who screen positive.

B74

Race and Gender Differences in Intervention following Acute Myocardial Infarction in the Oldest Old.

K. A. Dodd,[1,2] J. Pechacek,[3] J. F. Burgess,[4] A. S. Ash.[2] *1. Geriatrics, East Boston Elder Service Plan, Boston, MA; 2. Geriatrics, Boston University Medical Center, Boston, MA; 3. Section of General Internal Medicine, Evans Dept of Medicine, Boston University Medical Center, Boston, MA; 4. Dept of Health Policy and Management, Boston University School of Public Health, Boston, MA.*

PURPOSE: To see if race and gender disparities in receiving an intervention (PCI without stent placement, PCI with stent placement, or CABG) after acute myocardial infarction (AMI) persist in the oldest old (those aged 90 and above).

METHODS: Retrospective cohort study of Centers for Medicare & Medicaid Services administrative data on a national sample of 15,172 Medicare beneficiaries age 66 or greater admitted to the hospital between January 1 and November 30, 2001 with a primary or secondary diagnosis of AMI; 1,844 of these were among patients aged 90+. We used logistic regression models to adjust for illness burden, comorbidities, Medicaid buy-in status, and urbanicity.

RESULTS: In younger elderly patients (age < 90), the only significant difference by race and gender was a deficit for blacks, both men and women, as compared to white men, aged 75-79 (ORs = 0.55 and 0.50, respectively, both $p < 0.05$). However, among those ≥ 90, women received far fewer interventions after AMI: the OR (as compared to white males) was 0.06 for white females; 0.04 for black females; and 0.03 for "other" females (all $p < 0.001$). Sensitivity analysis, using a broader cohort of persons hospitalized for acute coronary syndrome (ACS), supported these findings. While the ACS diagnosis increases heterogeneity, there is again little difference by race and gender at ages < 90, yet huge gender differences for those aged 90+. Odds ratios for women receiving interventions (in contrast to white men) among ACS admissions for those aged 90+ are: 0.11 for white women, 0.17 for black women and 0.14 for women of other races (all $p < 0.02$).

CONCLUSION: While in elderly patients <90 there were few risk-adjusted differences by race or gender in receiving intervention after AMI, among the oldest old, and in each racial category, we found strikingly large deficits for women.

B75

Racial Differences in Self-Reported Exposure to Hospice Information.

K. S. Johnson, M. Kuchibhatla, J. A. Tulsky. *Duke University, Durham, NC.*

Supported By: 5 P20-CA091433-03 - Partnerships to Eliminate Disparities

NIH/NCRR 1K12RR17630 - Duke Mentored Clinical Research Scholars Program

NIA AG11268 - Claude D. Pepper Older Americans Independence Center

1K08AG028975-01A1 – Beeson Career Development Award in Aging

Background: Over the last decade, there has been considerable growth in the use of hospice due in part to educational campaigns informing the public about the availability of hospice for end-of-life care. However, the extent to which this information has reached African Americans, a group historically underrepresented in hospice, has not been well-described.

Objectives: Examine racial differences in self-reported exposure to hospice information and determine how this exposure impacts beliefs about hospice care.

Methods: Survey of 205 community-dwelling elders (>/= age 65). We used chi-square tests to examine differences in responses by self-reported exposure to hospice information (never heard of hospice, heard a little, or heard a lot) and multivariable regression to examine predictors of exposure to hospice information and the desire for hospice in the future (strongly agree to strongly disagree).

Results: Compared to Whites (N=95), African Americans (N=110) were more likely to have never heard of hospice (21.3% vs. 4.2%, P<.0001); 46.3% of African Americans and 71.6% of Whites had heard a lot about hospice. The most common source of information was someone who had used hospice (71%). In multivariable analysis controlling for demographics and health status, African American race was associated with less exposure to hospice information (P =0.04), and greater exposure to hospice information was asso-

ciated with more favorable responses about the desire for hospice at the end of life (P=0.11).

As exposure to hospice information increased, African Americans were less likely to believe that they would not need hospice because family would take care of them (P=0.03) or hospice causes people to die before their time (P=0.03). There were no differences by exposure to hospice information in the proportion of those who believed that they could not afford hospice (42.5%) and hospice is a place where people go to die (68.9%).

Conclusions: African Americans reported less exposure to information about hospice than Whites. Greater exposure to hospice information was associated with more favorable beliefs about some aspects of hospice, such as the desire for hospice in the future, but not responses to more fact-based items, such as affordability of hospice and hospice as a "place". Because knowledge is power, formal educational programs are needed to dispel myths about hospice and to provide minorities with the tools to make informed choices about end-of-life care.

B76

Concerning Trends in the Proportion of Hospitals Offering Services for Older Adults.

A. I. Arbaje,[1] B. Leff.[1,2] *1. Medicine, Johns Hopkins University, Baltimore, MD; 2. Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.*

Supported By: John A. Hartford Foundation

Robert Wood Johnson Foundation

Johns Hopkins School of Medicine Division of Geriatric Medicine and Gerontology

Problem: The ability of acute care hospitals to respond to the increasing demand for services in the face of the dramatically increasing older adult population in the United States (US) is uncertain.

Objective: Describe trends in the proportion of hospitals offering services relevant to the care of older adults in US hospitals.

Study design: Retrospective cohort study using 1999 and 2006 rounds of the American Hospital Association Annual Survey of Hospitals, a national database of self-reported hospital characteristics (n= 4,935 and 4,858 hospitals, respectively).

Measures: Proportion of hospitals offering the following services: geriatric medicine, rehabilitation or skilled nursing facility (SNF) beds, adult day care, case management services, home health services, geriatric psychiatry, retirement housing, meals on wheels, and social work.

Analysis: Two-sample comparison of proportions using chi-square testing.

Results: The number of hospitals offering geriatric medicine services remained virtually unchanged over the 7-year time period (39.1% in 1999 vs. 38.4% in 2006, P=0.49), as did the number of rehabilitation beds in hospitals, with over 75% of hospitals nationwide having no rehabilitation beds in either time period. The number of hospitals offering SNF beds decreased from 35.4% to 24.2% (P=0.000). The proportion of hospitals offering other services also decreased significantly: adult day care (9.9% to 6.4%, P=0.000); home health care (45.4% to 33.4%, P=0.000); meals on wheels (14.1% to 10.9%, P=0.000); and geriatric psychiatry (32.2% to 29.9%, P=0.01). The proportion offering case management significantly increased from 64.6% in 1999 to 81.3% in 2006 (P=0.000). There was no significant change in the proportion of hospitals offering retirement housing or social work services.

Conclusions: Despite the growing population of older adults in the US, fewer hospitals in 2006 offered services relevant to the care of older adults compared to 1999. Developing an understanding of the reasons underlying these trends will be needed to prepare the US health care system to adequately care for older adults.

B77

Patient-Level Determinants of Dying in the Hospital among HRS Decedents.

A. S. Kelley, S. L. Ettner, N. S. Wenger, C. A. Sarkisian. *Department of Medicine, University of California Los Angeles, Los Angeles, CA.*

Supported By: National Research Service Award Fellowship

Purpose: Medical expenses in the last year of life dramatically exceed costs of care during other years. High intensity hospital care at the end of life (EOL) is not associated with improved quality or satisfaction for many patients and their families. Our aim was to examine the patient-level determinants of dying in the hospital, a key indicator of high intensity, high cost EOL care.

Methods: We sampled all decedents between 2000 and 2006, age 67 and older at the time of death, from the Health and Retirement Study (HRS), a longitudinal study of a nationally representative cohort of older adults. A multivariate logit model was constructed to investigate the relationship between patients' social, functional and health characteristics and the primary outcome, dying in the hospital. Covariate selection was based on a conceptual model developed by the investigators and existing empirical literature.

Results: Of the 3539 HRS decedents, 39% died in the hospital. Controlling for the other covariates, characteristics associated with lower odds of dying in the hospital included white race (AOR 0.62, 95% CI 0.50, 0.77), and nursing home residence (AOR 0.41, CI 0.34, 0.50), while independence in activities of daily living (AOR 1.93, CI 1.58, 2.36) and number of medical comorbidities (AOR 1.09 per comorbidity, CI 1.04, 1.15) were associated with higher odds. Age, gender, education, net worth, and self-rated health did not have a statistically significant relationship with dying in the hospital. Living with others (AOR 0.84, CI 0.70, 1.01), a proxy measure of social support, and having completed an advance directive (AOR 0.85, CI 0.71, 1.02), had associations with lower odds of dying in the hospital that approached statistical significance.

Conclusions: Previously unexamined functional and social characteristics are significantly associated with dying in the hospital, a core component of high intensity EOL care. These results in conjunction with further investigation of patient-level determinants of EOL care intensity will help to prospectively identify individuals at risk for unwanted aggressive EOL care. Ultimately these findings should inform interventions to promote the involvement of older adults in medical decision making and assist physicians and patients in the development of appropriate, preference-guided EOL care plans.

B78

Assessing the Quality of Prescribing and Monitoring Erythropoiesis Stimulating Agents in the Nursing Home Setting.

A. I. Wong,[1] S. B. Stephens,[2] M. B. Aspinall,[2] S. Visweswaran,[1] J. T. Hanlon,[3,4] S. M. Handler.[1,3] *1. Biomedical Informatics, University of Pittsburgh, PA, PA; 2. RX Partners-LTC, LLC, PA, PA; 3. Geriatric Medicine, University of Pittsburgh, PA, PA; 4. CHERP/GRECC, Pittsburgh VAHS, PA, PA.*

Supported By: National Institutes of Health (NIH) grants R01 LM008374-03 (NLM Training Grant) and 5KL2RR024154-03 (NIH Roadmap Multidisciplinary Clinical Research Career Development Award Grant).

Background: Approximately 50% of all nursing home (NH) residents meet the World Health Organization criteria for anemia. Erythropoiesis Stimulating Agents (ESAs) are prescribed with increasing frequency to treat anemia in the NH setting.

Objectives: The objectives of this study were to determine the prevalence and appropriateness of prescribing and monitoring of ESAs in the NH setting.

Methods: Cross-sectional, retrospective chart review of all NH residents in four community-based, university-affiliated NHs between January and February 2008. Residents were included in the

analysis if they received at least one dose of an ESA during the study duration. Data collected included basic demographic information, ESA indication, ESA dosage, concurrent administration of iron supplements, and hemoglobin (Hgb) monitoring frequency and appropriateness based on package insert information.

Results: A total of 5% (22/485) of NH residents received at least one dose of an ESA. Residents who received ESAs had a mean age (± SD) of 80.4 (± 14.5) years. Most residents receiving ESAs were female (64% [14/22]) and white (68% [15/22]). Only 27% (6/22) of residents were prescribed an ESA for an FDA-approved indication. Darbepoetin alfa was the most commonly prescribed ESA (64% [14/22]) followed by epoetin alfa (37% [8/22]). While the majority of ESA users (64% [14/22]) had concurrent iron supplementation, only one of these residents had iron levels within normal values (35-175 mcg/dL). Moreover, 27% (6/22) of ESA users had a Hgb value > 12 g/dL, the maximum recommended threshold for use of these medications.

Conclusion: Suboptimal prescribing and monitoring of ESAs were common in the NHs we studied. Future studies are needed to determine if computerized decision support systems can improve prescribing and monitoring of ESAs in the NH setting.

B79

Physician consultation and multidisciplinary care conferences are associated with post-injury resource use for Medicare recipients.

A. L. Adams,[1] M. A. Schiff,[2] F. P. Rivara,[2] T. D. Koepsell,[2] B. G. Leroux,[2] T. M. Becker,[1] J. R. Hedges.[1,3] *1. Oregon Health & Science University, Portland, OR; 2. University of Washington, Seattle, WA; 3. University of Hawaii, Honolulu, HI.*

Supported By: Department of Emergency Medicine, Oregon Health & Science University

Objective: Hip and lower extremity injuries in older adults may initiate a persistent decline in health status and increased need for ongoing care. We hypothesized that post-injury healthcare resource use would be associated with two hospital characteristics: 1) routine surgeon consultation with medicine specialists, and 2) multidisciplinary care conferences. Methods: This was a retrospective cohort study of Medicare recipients aged 67 years or older hospitalized in Oregon hospitals in 2002 with hip or lower extremity injuries. Demographic, injury, comorbidity, and one-year post-injury hospitalization and outpatient visit information were ascertained from Medicare records. All Oregon hospitals with a qualifying case were surveyed by telephone about routine surgeon consultations and care conferences using a structured instrument. Generalized estimating equation models were used to estimate incidence rate ratios (IRR) and 95% confidence intervals (95% CI). Results: After adjusting for age, injury severity, comorbid conditions, trauma center status, and annual hospital hip fracture patient volume, and accounting for clustering by hospital, we found that routine surgeon consultation with medical staff (primary care, hospitalists, internists) was associated with higher rehospitalization rates in the year post-injury for patients aged 67-84 years (IRR 1.48, 95% CI 1.12-1.96) and those with at least one comorbid condition (IRR 2.15, 95% CI 1.57-2.94). Routine consultation was also associated with higher outpatient visit rates for younger patients (IRR 1.17, 95% CI 1.11-1.22) and those with at least one comorbidity (IRR 1.38, 95% CI 1.32-1.45). Routine multidisciplinary care conferences, involving nursing, occupational/physical therapy, and social work staff, were associated with lower rehospitalization (IRR 0.84, 95% CI 0.76, 0.95) and outpatient visit rates (IRR 0.90, 95% CI 0.88, 0.91). Conclusion: Routine consultation between attending surgeon and medicine or primary care specialists for older orthopedic inpatients is associated with lower post-injury resource use rates for some injured older adults, and with higher rates for others. Routine multidisciplinary care conferences are associated with reduced resource use post-injury.

B80

Outcomes Associated with Opioid Use in the Treatment of Chronic Non-cancer Pain (CP) Among Older Adults: A Systematic Review and Meta-Analysis.

C. Reid,[1] M. Papaleontiou,[1] A. A. Moore,[2] B. J. Turner.[3] *1. Weill Cornell Medical College, New York, NY; 2. UCLA, Los Angeles, CA; 3. U Penn, Philadelphia, PA.*

Supported By: The Robert Wood Johnson Foundation's Program of Research Integrating Substance Use in Mainstream Healthcare funded this study.

Background: Opioid medications are frequently used to treat CP in older adults, however, the efficacy and safety of this practice remains poorly defined.

Purpose: To summarize evidence regarding the efficacy and safety of opioids when used to treat CP among older adults.

Methods: Data sources included Medline, PubMed, MD Consult, CINAHL, and Cochrane Library databases. English-language articles (published from 1980-2007) that provided data regarding one or more of the above outcomes and had a mean study population age 60 or greater or reported age-stratified results were retained for review. Two investigators independently extracted data and rated study quality.

Results: Thirty-five articles met inclusion criteria. The weighted mean subject age was 64.4 years (range = 60-71). Most studies (84%) lasted 12 weeks or less and enrolled patients with osteoarthritis (75%) or a neuropathic pain disorder (25%). Comparing opioids vs. placebo or a non-opioid comparator drug, the overall effect size for pain intensity reduction was -0.560 ($p<0.001$). Significant reductions in physical disability (-0.445, $p<0.001$) were found, while quality of sleep scores improved (0.858, $p=0.309$) but not significantly. Quality of life was assessed in few studies: the overall effect size for the SF-36 physical component score was 0.191, $p = 0.171$, whereas an overall effect size of -0.148, $p =0.03$, was found for the mental component summary score, indicating an effect in favor of placebo. Effect sizes (for pain and physical disability) were noticeably greater for patients with neuropathic vs. osteoarthritis-related pain. Most studies (81%) were judged to have excellent methodologic quality. Adverse advents were prevalent and included constipation (30%), nausea (28%), and dizziness (22%), prompting opioid discontinuation in 25% of cases. Abuse/misuse behaviors were negatively associated with advancing age.

Conclusions: Among older adults with CP, short-term use of opioids is associated with significant reductions in pain intensity scores, improved physical functioning, but decreased mental health functioning. Side effects occurred commonly but led to opioid discontinuation in a minority of cases, whereas abuse/misuse behaviors were rare. The long-term safety, efficacy and abuse potential of opioids among older populations remain to be determined.

B81

Description of the Nonreimbursable Care Coordination Efforts of an Academic Geriatric Medical Practice for an Inner-City Geriatric Population.

C. Chang, K. Trommer, S. Bradley, E. H. Callahan, A. K. Chun. *Geriatrics, Mount Sinai School of Medicine, New York, NY.*

Supported By: Drs. Chun and Bradley's work was supported by a 2007-2008 HRSA sponsored Geriatric Academic Career Award

Background: Patients with chronic disease often require additional care before and after an office visit that is not reimbursed under medicare guidelines.

Objective: To describe the number and nature of the care geriatricians provide outside of office visits.

Method: A retrospective review of the EMR summarized and characterized all documented episodes of communication between the geriatrician and patients, caregivers, nurses, nurse practitioners, social workers, and outside agencies during the 2006-2007 academic year.

Results: Thirty-one physicians (17 attendings and 14 fellows) provided primary care for 2094 unique patients for a total of 7855

office visits during the 2006-2007 academic year. 21,444 documented interactions occurred outside the visit. 22.1% of these interactions were specifically documented as telephonic communications while 77.9% were nonspecified documented communications with patient, family, physician consultants, outside agencies, and interdisciplinary team members. Median time to document these encounters was approximately 2.5 minutes (not including the time to complete the interaction). A full-time physician scheduled to see 14 patients per day in 30-minute visits over a 5-day work week can expect to have at least 190 additional care coordination tasks to complete during the week that would require at least another 7.9 hours to document.

Conclusion: Geriatricians spend considerable amounts of time providing care outside of office visits for patients with chronic illness. Medicare reform should include reimbursement changes that reflect the intellectual and time contributions made.

Key words: primary care geriatric practice, care coordination, nonreimbursed workload

B82 Scientist-in-Training Research Awardee

Pilot study of Collaborative Goal-Setting for Diabetes Control with Multimorbid Older Men.

E. Rodriguez,[1,2] P. Haidet,[1,2] R. Rao,[1,2] D. Rochon,[2] A. Price,[3] A. Naik.[1,2] *1. Michael E. DeBakey VA Medical Center, Houston, TX; 2. Baylor College of Medicine, Houston, TX; 3. MD Anderson Cancer Center, Houston, TX.*

Supported By: Centers for Education & Research on Therapeutics, Houston VA HSRDCoE (HEP90-020), and National Institute on Aging

Purpose: To test a model of diabetes care with multimorbid, older men. We focus on empowering patients to 1) appreciate personalized diabetes ABC risks (hemoglobin A1C, systolic blood pressure, and low-density lipoprotein cholesterol), 2) set diabetes goals and action plans, and 3) facilitate patient-physician communication. Primary outcomes are to improve HgA1C outcomes and the quality of collaborative goals and action plans for diabetes care.

Methods: Patients are randomized to a treatment group that consists of four group clinic sessions over 12 weeks. The sessions focus on the above topics through group discussions among patients and the session leader. The control group consists of enhanced usual care including diabetes education and nutrition classes. Lab values, blood pressure, and weight are collected at enrollment, 3 months, and 1 ear. In addition, patients complete a questionnaire in which they describe their diabetes goals and action plans.

Results: 100 multimorbid diabetic older men constitute the analytical sample for our study. The average participant had 2.9 chronic conditions and was 63.9+/- 7 years of age. Half were non-white and one-third lived alone. Baseline HgA1C levels in the treatment group were 8.57 and 8.70 for controls (p=.64). At 3 months, the treatment group had an HgA1C level of 7.98 and 8.65 for control (p= .02). In addition, the treatment group had a 0.58 decrease in HgA1C from baseline to 3 months compared to a 0.08 decrease in the control group (p=.09). Those in the treatment group who described a measureable action plan, had a HgA1c decrease of 0.98 compared to a 0.01 decrease among controls with poor quality action plans (p= .02). Data collection for the 1 year follow-up is pending.

Conclusion: This pilot study demonstrated the effectiveness of diabetes goal setting as a mechanism for behavior change in multimorbid older men. We found a clinically significant decrease in HgA1C levels from baseline to 3 months in the treatment group. Furthermore, those who made high quality action plans in the treatment group lowered their HgA1c by almost a full point more than those receiving diabetes education without training in goal-setting. Refining the process of making high quality goals and action plans may strengthen the intervention and further improve outcomes in multimorbid older men.

B83

Under Treatment of Non-Pain Symptoms in Elder Nursing Home Dying Patients: The 2004 National Nursing Home Survey.

E. Jaffe,[1,2] D. McGurl,[2] S. Perera,[2] M. Sevick,[1,2] K. L. Rodriguez,[1,2] J. T. Hanlon.[1,2] *1. GRECC, VA Pittsburgh, Pittsburgh, PA; 2. Geriatric Medicine, University of Pittsburgh, Pittsburgh, PA.*

Supported By: This research was supported by the VA Pittsburgh Healthcare System GRECC

Background: Approximately 25% of all US deaths occur in the long-term care setting. This figure is estimated to rise to 40% by the year 2040. Currently, there is limited information on non-pain symptoms and appropriate treatment in this setting at the end-of-life.

Objective: To determine the prevalence and appropriate treatment of non-pain symptoms in older dying nursing home patients.

Methods: This study used a cross sectional sample of 303 older hospice and palliative care subjects representing 33,413 weighted patients from the Centers for Disease Control funded 2004 National Nursing Home Survey (91% white, 72% female, 48% aged 85+years). Non-pain symptoms were obtained from facility staff that used medical records to answer questions about the residents. Medication use data was derived from medication administration records. Under-treatment was defined as no pharmacologic therapy for reported symptoms.

Results: One or more of the non-pain symptoms occurred in 82 patients (22.0% weighted [wted]). The most common non-pain symptoms in rank order were: cough (9.2% wted); constipation (8.8% wted); nausea/vomiting (7.2% wted); fever (3.1% wted); and diarrhea (1.9% wted). Medication under-treatment of any of the above symptoms was seen in 65.2% (wted) of patients ranging from a low of 26.4% (wted) for constipation to a high of 88.0% (wted) for nausea/vomiting.

Conclusions: The prevalence of non-pain symptoms was relatively low. However, medication under-treatment of non-pain symptoms was seen in close to two-thirds of these patients. Future quality improvement initiatives for nursing home hospice and palliative care patients are needed beyond management of pain symptoms.

B84

Do Acute Care Processes Place Older Adults at Risk for Hospital Readmission?

I. A. Vaughn,[1] A. I. Arbaje.[2] *1. The Ohio State University College of Medicine, Columbus, OH; 2. Division of Geriatric Medicine & Gerontology, The Johns Hopkins University School of Medicine, Baltimore, MD.*

Supported By: The National Institute on Aging, The American Federation for Aging Research, The John A Hartford Foundation

Problem- Older adults are at risk for returning to the hospital within a short time after discharge, and there may be acute care processes contributing to this risk.

Objective- To identify whether acute care processes are associated with an increased risk for hospital readmission within the first 6 months of discharge.

Study Design- Retrospective cohort study of 717 hospitalized adults aged ≥70 years admitted to 4 academic general medicine services from January to December, 2007.

Measures- Outcome: days to first readmission. Acute care processes: care transition quality using Care Transitions Measure; discharge summary quality; communication with primary care provider. Demographic and hospitalization characteristics: age, gender, ethnicity, education, marital status, hospital charges, primary diagnosis, length of stay, discharge disposition.

Results- Using time-to-event analysis, the incidence rate of readmission was 0.014, and the probability of readmission was 25% at

18 days, 50% at 64 days, and 75% at 113 days. In a simple Cox proportional hazards model of acute care processes and days to readmission, women had a 40% decreased hazard of readmission compared to men (HR 0.60, P=0.007). Having symptoms compared with a clear diagnosis was associated with a 60% reduced hazard of readmission (HR 0.40, P=0.035). No acute care processes were associated with days to readmission in bi-variable analysis. In a multi-variable model that adjusted for age, gender, and minority status, women continued to have a 40% decreased hazard of readmission (HR 0.59, P=0.009), and those with symptoms and no clear diagnosis had a 65% reduced hazard of readmission (HR 0.35, P=0.02).

Conclusions- Acute care processes do not appear to be associated with hospital readmission in this analysis of older adults hospitalized on general medical services in our institution.

B85

Is better performance on Leapfrog's Safe Practices Leap associated with lower inpatient mortality?

L. Kernisan,[1,3] S. J. Lee,[1,3] W. J. Boscardin,[3] C. S. Landefeld,[1,3] R. A. Dudley.[2] *1. Division of Geriatrics, UCSF, San Francisco, CA; 2. Institute for Health Policy Studies, UCSF, San Francisco, CA; 3. Health Services REAP, San Francisco VA, San Francisco, CA.*

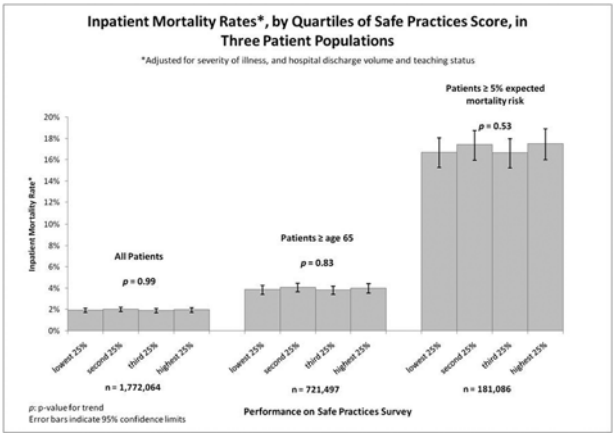
Supported By: UCSF Division of Geriatrics & Institute for Health Policy Studies; VA Quality Scholars Fellowship.

Context: The Leapfrog Survey allows hospitals to self-report the steps they have taken towards implementing the "Safe Practices for Better Healthcare" endorsed by the National Quality Forum. Leapfrog ranks hospital performance on this survey by quartiles, and posts rankings on its website. It is unknown if hospitals' resulting Safe Practices Scores (SPS) correlate with outcomes such as inpatient mortality.

Methods: We analyzed discharge data for all urban hospitals that completed the 2006 Leapfrog Safe Practices Survey and were identifiable in the Nationwide Inpatient Sample (155 hospitals). Leapfrog provided a SPS for each hospital. We used hierarchical logistic regression to assess the relationship between quartiles of SPS and risk-adjusted inpatient mortality, adjusted for hospital volume and teaching status. Subgroup analyses were done on patients ≥65 years and patients with ≥5% expected mortality.

Results: SPS was not predictive of risk-adjusted inpatient mortality (p=0.99). Results were similar in patients ≥65 or with with ≥5% expected mortality.

Conclusions: Scores on the Safe Practices Survey do not appear to correlate with inpatient mortality rates. Hospital self-reporting of patient safety practices may not be an effective way to assess quality and is of unclear value to the public.



B86

The Vulnerable Elders-13 Survey Predicts 5-year Functional Decline and Mortality Outcomes Among Older Ambulatory Care Patients.

W. Yoon,[2] D. Saliba,[1,3] N. Wenger,[1,3] L. Min.[1] *1. David Geffen UCLA School of Medicine, Los Angeles, CA; 2. Virginia Commonwealth University School of Medicine, Richmond, VA; 3. RAND, Santa Monica, CA.*

Supported By: NIA-AFAR & Lillian R. Gleitsman Medical Student Training in Aging Research (MSTAR) Program; NIA-UCLA Mentored Clinical Scientist Development Program in Geriatrics (K12)

BACKGROUND: The Vulnerable Elders-13 Survey (VES-13) is a short prognostic tool that predicts functional decline and mortality over a 1-2 year follow-up interval. However, many clinical decisions, e.g., cancer screening, would be facilitated by prediction of 5-year clinical outcomes.

OBJECTIVE: To test the predictive properties of the VES-13 over a longer 5-year interval.

DESIGN: Longitudinal evaluation with mean follow-up of 4.5 years.

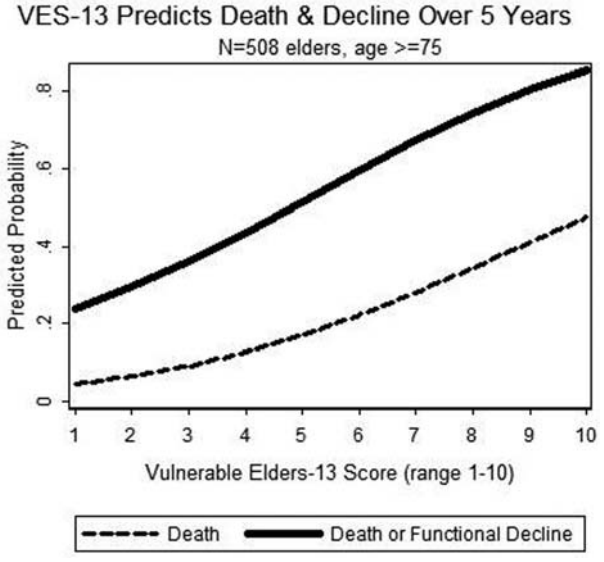
SETTING: Two managed-care organizations.

PARTICIPANTS: 508 community-dwelling elders (age ≥ 75 and older) enrolled in the Assessing Care of Vulnerable Elders (ACOVE) observational study who screened positively for symptoms of fear of falls/falls, bothersome urinary urge/incontinence, or memory problems.

MEASUREMENTS: VES-13 score (range 1-10, higher indicates worse prognosis); functional decline (defined as decline in count of 5 activities of daily living or nursing home entry); deaths.

RESULTS: Greater VES-13 scores are associated with greater predicted probability of death and decline among older patients over a mean study time of 4.5 years. For each additional VES-13 point the odds of the combined outcome of functional decline or death was 1.28 ($p < 0.001$), and the Area Under the Receiver Operating Curve (AUC) was 0.70. In the Cox proportional hazards model predicting death, the hazard ratio was 1.21 ($p < 0.001$) per additional VES-13 point.

CONCLUSION: This study extends the clinical utility of the VES-13 to prognosis of functional status and survival over a longer 5-year interval.



B87

Impact and Recognition of Cognitive Impairment among Hospitalized Elders.

M. A. Boustani,[1] N. Campbell,[2] M. Farber,[1] A. Ademuyiwa,[1] P. Castelluccio,[1] O. Guzman,[2] S. Hui.[1] *1. Medicine, Indiana University, Indianapolis, IN; 2. Wishard Health Services, Indianapolis, IN.*

Supported By: The study was supported by Paul A. Beeson Career Development Award in Aging (K23 AG 26770-01) from the National Institute on Aging, the Hartford Foundation, The Atlantic Philanthropy, and the American Federation of Aging Research.

Objective: Determine the prevalence, recognition, and impact of cognitive impairment (CI) among hospitalized elders.

Design: An observational cohort study.

Setting: Public hospital in Indianapolis.

Participants: 765 patients aged 65 and older admitted to medical services between July 2006 and June 2007.

Main Outcome: CI was measured using the short portable mental status questionnaire (SPMSQ) and delirium was evaluated using the confusion assessment method (CAM).

Results: 301 patients (39%) had evidence of CI at the time of admission and 59% of those with CI were not recognized. In comparison to hospitalized elders with recognized CI those with unrecognized CI were younger (mean age 76.1 vs. 79.7, $p < 0.001$); had more comorbidity (mean Charlson index of 2.2 vs.1.7, $p = 0.03$), had less cognitive deficit (mean SPMSQ 6.2 vs. 3.4, $p < 0.001$), and received more anticholinergics (73% vs. 58%, $p < 0.01$). Among elders with CI, 119 (40%) had at least one episode of delirium during their hospital course. In comparison to hospitalized elders with CI who did not have delirium, those with delirium stayed longer in the hospital (9.2 days vs. 5.4, $p < 0.001$); had a higher probability of death within 30 days (9% vs. 2%, $p = 0.01$), and were more likely to be institutionalized (81% vs. 53%, $p < 0.001$).

Conclusion: Hospitalized elders with CI are considered vulnerable patients that require special hospital care.

B88

Index to Predict 5-Year Mortality of Community Dwelling Older Adults.

M. A. Schonberg, R. B. Davis, E. P. McCarthy, E. R. Marcantonio. *Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, Brookline, MA.*

Supported By: National Institute on Aging K23 (1K23AG028584-01A1) and an SGIM/ASP/ACGIM T. Franklin Williams Scholars Award in Geriatrics.

Purpose: Prognostic information is becoming increasingly important for medical decision-making. Mortality predictors can be used to better target health services (e.g., mammography) to older adults. We aimed to develop and validate an index to predict 5-year mortality among community-dwelling older adults.

Methods: We used data from the National Health Interview Survey from 1997-2000 with mortality data available through 2002 from the National Death Index. We included 24,115 individuals aged 65+; 16,077 were randomly selected for the development cohort and 8,038 for the validation cohort. Thirty-nine risk factors (functional measures, illnesses, behaviors, demographics) were included in a multivariable Cox proportional hazards model to determine factors independently associated with mortality ($p<0.0001$ for retention). Risk scores were calculated for participants using points derived from the final model's beta coefficients. To evaluate external validity we compared survival by quintile of risk between the development and validation cohorts.

Results: 17% of participants had died by the end of the study. The final model included 11 variables: age (1 point for 70-74 up to 7 points for 85+); male: 3 points; BMI <25: 2 points; perceived health (good: 1 point, fair/poor: 2 points); emphysema: 2 points; cancer: 2 points; diabetes: 2 points; needs help shopping: 2 points; difficulty walking: 3 points; smoker-former: 1 point, smoker-current:3 points; and past year hospitalizations-one: 1 point, 2 or more: 3 points. We observed close agreement between 5-year mortality in the development and validation cohorts, which ranged from 5% in the lowest risk quintile to 52% in the highest risk quintile. The table demonstrates 5-year mortality probability from the index (validation cohort).

Conclusions: This validated mortality index accurately stratifies older individuals by risk of 5-year mortality.

Total Score	Probability of 5-year mortality
0-3	5% or less
4-5	8%
6-7	12%
8-9	19%
10-11	29%
12-13	37%
14-15	49%
16-17	55%
18+	62%

B89

Logical Inconsistency In Comorbid Health State Preference Assessment for Prostate Cancer.

W. Dale, S. P. Bilir, J. Hemmerich, A. Basu, D. Meltzer. *Dept of Medicine, University of Chicago, Chicago, IL.*

Supported By: Paul B. Beeson Career Development Award (K23) through NIA and The Hartford Foundation. Additional support from Pfizer.

Purpose: As the need for appropriate resource allocation increases in our aging society, attention is turning to evidence-based medical decision making and cost-effectiveness analysis (CEA). Health policy decisions depend on quality-adjusting outcomes from such analyses with utilities. Even small changes in utilities can have considerable effects on CEA, and measuring utilities accurately is difficult. One challenge for an aging population with many comorbidities is retaining respondents' logical consistency in utility-elicitation for multiple conditions. We define this as ensuring that a single health state (SS) utility is no lower than a utility for a adding a second SS to that first one to make a comorbid health state (CS). Determining why or by whom this basic consistency condition fails is vital for accurate CEA for comorbid diseases. Methods: Men were surveyed at the time of prostate biopsy. Both SS and CS utility values were elicited via the time-trade off method. Demographic information, current health, and scores on anxiety measures (HADS and MAX-PC) were also collected. The most prevalent CS associated with prostate cancer in the SEER cancer database were chosen for assessment. CS were combinations of the SS "impotence" with each of "incontinence", "asymptomatic localized disease", and "post-prostatectomy". Regression analysis was used to determine the association of other variables with utility inconsistency. Mann-Whitney U-tests determined whether utility values differed by consistency group. Results: 68% of respondents rated inconsistently at least once. Being married and feeling anxious were correlated with a higher probability of inconsistent ratings in univariate logistic analysis ($p< 0.01$, $p< 0.05$ respectively). Lower education was independently associated with less consistent answers ($p<0.05$). The inconsistent group had significantly lower utility values for all SS, but not for CS ($p<0.01$). "Correcting" inconsistent CS scores shifted aggregate utilities 5-10 points (on a scale of 0-100). Conclusions: Nearly 70% of men gave at least one logically inconsistent response across the three CS conditions. Being married, feeling anxious, and having less education were correlated with more inconsistent responses. "Correcting" these inconsistencies significantly affects utility values. Strategies for eliciting more consistent responses are needed to accurately quality-adjust comorbid health states.

B90

Do older adults that live alone utilize more services in the Program of All-inclusive Care for the Elderly (PACE)?

S. Johnson,[1] Q. Yu,[2] M. McNabney.[2] *1. College of Medicine, Medical University of South Carolina, Charleston, SC; 2. Division of Geriatric Medicine and Gerontology, Department of Medicine, Johns Hopkins University, Baltimore, MD.*

Supported By: American Federation on Aging Research (AFAR) Medical Student Training in Aging Research (MSTAR) Program

PURPOSE: PACE is a model of care that provides comprehensive and coordinated care to frail, nursing home eligible older adults living in the community. Within this model, we sought to determine if living alone affected the utilization of important services (home health, day center and hospitalization) when compared to those with other living arrangements.

METHODS: We analyzed a cross-sectional sample of data extracted from standardized re-evaluation forms of 144 participants enrolled at an urban PACE site. In addition to living arrangements, we collected the following data: age, self-reported health status, activities of daily living (ADL), functional activity status according to the Frail Elderly Functional Assessment (FEFA), Berg Balance Scale, and Short Portable Mental Status Questionnaire (MSQ), number of medications, number of durable medical equipment (DME) devices and presence of physician-diagnosed dementia and depression. From social work and program tracking records, we obtained the health service utilization outcomes (use of home health care and adult day care (days per week) and number of hospitalization days in the past 6 months). Using multiple linear regression, we evaluated the relationship between living arrangements and each health service utilization outcome.

RESULTS: After controlling for all other variables, living alone was significantly associated with more home health care days compared to those not living alone (2.45 days versus 0.55 days/week; p=0.001). Living arrangement was not associated with rates of day center use or hospitalization. Other significant associations included: a) higher FEFA (worse function) and greater number of DME devices were mildly associated with more home health care days (p=0.09 and p=0.09, respectively), and b) higher day care use was noted in those with dementia (p=0.03), worse MSQ score (p=0.03) and lower FEFA score (p=0.04).

CONCLUSIONS: In this PACE Program sample, living alone was the strongest predictor of home health care utilization after controlling for measures of function, mobility and cognition. These findings suggest that PACE participants who live alone have increased needs that are independent of measured impairments, which should be an important consideration when planning for care needs within this model.

B91

Non-Adherence to Manual Repositioning Guidelines for Pressure Ulcer Prevention in Bedbound Hospitalized Hip Fracture Patients.

S. E. Rich,[1] D. Margolis,[2,3] M. Shardell,[1] W. G. Hawkes,[1] R. R. Miller,[1] S. Amr,[1] M. Baumgarten.[1] *1. Epidemiology & Preventive Medicine, University of Maryland School of Medicine, Baltimore, MD; 2. Epidemiology & Biostatistics, University of Pennsylvania School of Medicine, Philadelphia, PA; 3. Dermatology, University of Pennsylvania School of Medicine, Philadelphia, PA.*

Supported By: National Institute of Arthritis and Musculoskeletal and Skin Diseases grant R01 AR 47711

University of Maryland General Clinical Research Center Grant, General Clinical Research Centers Program, National Center for Research Resources grant M01 RR 16500

National Institute on Aging Claude D. Pepper Older Americans Independence Center grant P30 AG028747

National Institute on Aging grant T32 AG000262

National guidelines for pressure ulcer prevention recommend frequent manual repositioning (every 2-4 hours) of bedbound patients, including patients using pressure-redistributing support surfaces (mattresses and overlays); the extent to which these recommendations are being implemented is not known. We examined adherence to these guidelines among bedbound hospitalized hip fracture patients. Eligible patients were age≥65 years who underwent surgery for hip fracture and were bedbound at the time of a baseline study visit in the first five days of hospitalization (n=237). A study nurse determined the use of a pressure-redistributing support surface, and information on repositioning frequency for the same day was collected by medical chart review. Only 139 bedbound patients (59%) were repositioned at least every 2 hours (i.e., ≥12 times/day), with 18 additional patients (8%) repositioned at least every 4 hours (i.e., 6-11 times/day). Bedbound patients were repositioned ≥12 times/day for 63% (56/89) of those using a pressure-redistributing support surface and 56% (83/148) of those not using a pressure-redistributing support surface (70% vs. 64% of bedbound patients were repositioned ≥6 times/day, respectively). Using a 3-level variable for repositioning frequency (0-5, 6-11, ≥12 times/day), the use of pressure-redistributing support surfaces was not significantly associated with frequency of repositioning ($\chi 2$=1.07, p=.58). The odds of frequent repositioning were not significantly lower for bedbound patients using pressure-redistributing support surfaces than for those using standard support surfaces (OR 0.8, 95% CI 0.4-1.5 for repositioning ≥12 times/day), even after adjustment for pressure ulcer status and pressure ulcer risk factors. The fact that frequent repositioning does not appear to be significantly reduced for patients using pressure-redistributing support surfaces is encouraging. However, one-third of bedbound patients were not being repositioned at the recommended frequency, suggesting that guidelines are not being fully implemented and improvements in implementation are urgently needed.

B92

THE ASSOCIATION BETWEEN SOCIAL SUPPORT AND HYPERTENSION CONTROL AMONG OLDER HYPERTENSIVE ADULTS.

T. R. Gure,[1] Z. Tian,[1] K. M. Langa,[2,3] J. D. Piette.[3,2] *1. Division of Geriatric Medicine, University of Michigan, Ann Arbor, MI; 2. Division of General Internal Medicine, University of Michigan, Ann Arbor, MI; 3. Center for Practice Management and Outcomes Research, Veterans Affairs Hospital, Ann Arbor, MI.*

Supported By: 2 R01 AG027010 NIA Diversity Supplement; John A. Hartford Foundation, Claude D. Pepper Older Americans Independence Center

Hypertension is a modifiable risk factor for incident and recurrent cardiovascular events and appears to be implicated in the development of cognitive decline in later life. Yet, only one-third of adults have their blood pressure treated to guideline recommended levels. The purpose of our study is to evaluate the association between the quality of social support and hypertension control for older, community-dwelling adults with chronic hypertension.

We used the 2006 wave of the Heath and Retirement Study (HRS), a biennial, longitudinal survey of US adults ≥ 50 yrs. We identified older adults who self-reported hypertension and taking antihypertensive medications for ≥ 1 survey wave and who participated in the Enhanced Face to Face interview which included completion of a Psychosocial Questionnaire and 3 automated BP (blood pressure) measurements.

We identified 3,363 respondents who had a diagnosis of chronic hypertension. Forty percent of the respondents had BP measurements ≥140/90. Respondents reported positive support from spouse, children, other family, and friends. Social support from spouse, children or friends was not associated with blood pressure control (OR: 1.013; 95% CI (0.99-1.016). We also found no association between social support and perception of BP control (OR:1.011; 95% CI (0.983-1.039).

No significant associations existed between social support and BP control and self-efficacy in chronic hypertensive older adults. Further exploration of other factors in social context associated with self-management may be appropriate to effectively design interventions to improve BP control within traditional clinic-based disease management models.

B93

Advance Care Planning and End-of-life Care Preferences in Community-dwelling Elders.

V. Y. Yung,[1] A. M. Walling,[1,2] L. C. Min,[1] N. S. Wenger,[1,2] D. A. Ganz.[1,3] *1. Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA; 2. UCLA Health System Ethics Center, Los Angeles, CA; 3. , VA Greater Los Angeles Healthcare System, Los Angeles, CA.*

Supported By: 2008 Medical Student Training in Aging Research (MSTAR) Program at the David Geffen School of Medicine at UCLA. The original ACOVE studies were supported by a contract from Pfizer, Inc to RAND.

Purpose: Advance care planning (ACP) includes establishing a surrogate decision-maker and discussing preferences for future end-of-life (EOL) care. We examined data from the Assessing Care of Vulnerable Elders (ACOVE) studies to assess to what extent ACP is documented in the medical record of patients in community settings, and to explore EOL care preferences among community-dwelling patients. **Methods:** Our study uses patient survey and medical record data from two previous projects: ACOVE-1 (N=245, July 1998 - July 1999) and ACOVE-2 (N=566, April 2002 - May 2003). In ACOVE-1 participants were age ≥ 65 and screened for high risk of death/functional decline. In ACOVE-2 (where only outpatient records were obtained) participants were age ≥ 75 who screened positive for falls/mobility disorders, incontinence and/or dementia. **Results:** By survey, there were 164 (ACOVE-1, 67%) and 413 (ACOVE-2, 73%) patients who reported completing an advance directive, of whom 109 (ACOVE-1) and 221 (ACOVE-2) reported giving it to their provider. Of these latter patients, 16% (ACOVE-1) and 40% (ACOVE-2) had any preferences regarding life-sustaining care documented in the medical record (either within an advance directive or informally). Among surveyed patients who reported notifying their provider of a surrogate decision-maker, 9% (ACOVE-1) and 28% (ACOVE-2) had surrogate information in the medical record. Among all surveyed ACOVE-1 patients, the vast majority preferred dying over permanently: being attached to a ventilator (90%), having a feeding tube (88%), or being in coma (93%). Only 56 (23%) ACOVE-1 patients reported discussing specific EOL care preferences with their provider: 11% did not want to be hospitalized, 27% did not want to have major surgery and 18% did not want CPR. **Conclusion:** Documentation of ACP in the medical record of vulnerable elders is scant and their preferences, which demonstrate unwillingness to tolerate adverse health states, are not being discussed with their providers. These data suggest that many vulnerable elders would want care withheld or withdrawn under certain circumstances, indicating the importance of ACP discussions and documentation.

B94

A Novel Mobile Acute Care for the Elderly (MACE) Inpatient Model of Care.

B. Korc-Grodzicki, J. Farber, C. Thompson, A. Moskowitz, S. Cohen, R. M. Leipzig. *Geriatrics, Mount Sinai School of Medicine, New York, NY.*

Background: As hospital occupancy rates become higher, the ability to assign appropriate patients to a geographical ACE unit has become harder. The multidisciplinary MACE team was created to maximize the benefits of excellent geriatric clinical care combined with enhanced communication and seamless transitions of care regardless of the geographic location within the hospital. Setting: Urban Teaching Hospital. Design: Prospective cohort study

Participants: Patients from Coffey Geriatrics Associates admitted to the Geriatrics Service in Mount Sinai Hospital (MSH) between 7/1/07 and 6/30/08.

MACE team:1. Geriatric-hospitalist attending physician 2. Geriatric fellow; 3. Geriatric Nurse Practitioner (GNP) responsible for obtaining baseline data, communicating across the continuum of care and post-discharge phone calls to patients/caregivers. 4. Dedicated social worker (SW) responsible for discharge planning and collaboration with the outpatient SW.

Implementation: The team focuses on: 1. Daily meeting to assess clinical/social/systems difficulties. 2. Family meetings early in the hospitalization 3. Transitional care based on The Care Transitions Program (1) adapted to the needs and limitations of MSH. 4. Patient/caregiver education on medication management. 5. Communication with primary care provider upon admission, discharge and after the post discharge follow up phone call.

Results: There were 597 discharges during this period. Patient's mean age was 83 years old. 75% were female. The patients were frail, most of them dependent in IADLs and ADLs (57%). 46% had diagnosis of cognitive impairment or dementia and 56% walked with an assistive device prior to hospitalization. 443 patients (74.2%) were discharged home and the rest were discharged to rehabilitation, long term care, hospice care or expired. 38% of the phone calls to patients who were discharged home revealed difficulties with medications, services or worsening symptoms requiring intervention by the GNP. Mean length of stay (6.0 days) was significantly lower compared to patients admitted to the Geriatrics Service the prior year (8.3 days) with no difference in 7-day readmission rate (4.0% vs 4.9%).

Conclusions: The MACE team is a novel model of multidisciplinary inpatient care with emphasis on communication and early coordination of care that proved to be very effective for frail older adults.

(1) Coleman et al. Arch Intern Med 2006;166:1822-1828.

B95

Attitudes and expectations of hospitalized older adults about exercise in the hospital.

C. So,[1] E. Pierluissi.[2] *1. UCSF School of Medicine, San Francisco, CA; 2. Medicine/Geriatrics, UCSF, San Francisco, CA.*

Supported By: National Institute on Aging Diversity Supplement Award

Donald W. Reynolds Foundation

UCSF Dean's Award for Medical Student Research

Background: In older adults, hospitalization is associated with decline in function and quality of life. Exercise may improve function in this population. Little is known regarding the attitudes and expectations of hospitalized older adults regarding exercise in the hospital.

Purpose: To describe attitudes and expectations of hospitalized older adults regarding physical activity and exercise in the hospital.

Study Methods: We conducted semi-structured interviews with a convenience sample of 28 hospitalized older adults 66 to 97 years old with four or fewer errors on the Short Portable Mental Status Questionnaire (SPMSQ) that spoke English or Spanish. Open-ended questions explored definitions of and perceptions surrounding exercise in the hospital. We performed content analysis using the framework theory to identify major themes.

Results: Hospitalized older adults perceived the following physical activities as exercise while in the hospital: walking (57%), calisthenics (21%), going to the restroom (14%), stair climbing (7%), and any activity prescribed by a doctor (7%). Only 29% expected to be doing exercises while in the hospital. Despite this, a majority of patients (74%) perceived exercise as appropriate and beneficial in the hospital setting. One-half of patients thought exercise would speed their recovery. Almost all patients (93%) perceived some barriers to their exercising in the hospital, including physical limitations related

to their illness, institutional barriers, such as not offering assistance to walk or lack of proper assistive devices, and a fear of falling. For 57% of respondents, proactive institutional support such as a nurse, physical therapist, or nursing assistant offering to walk with them was critical in promoting their own exercise. Only 27% of respondents had spoken to their doctor or medical team about exercise in the hospital, yet 85% felt that if the physician suggested exercise it would influence their decision to do so.

Conclusion: Hospitalized older adults have positive perceptions about exercising in the hospital, although they must overcome significant barriers to do so. Proactive institutional support is a crucial part of any hospital intervention to increase exercise uptake in this population. Medical professionals have a strong influence over the exercise behavior of elderly patients in the hospital, yet infrequently address the issue.

B96

A Comprehensive Multidimensional Senior Center: Early Financial Evaluation.

M. Kemmann,[2] T. Creegan,[2] S. Hernandez,[2] E. Rader,[1] C. Rutti,[1] W. Reniff,[1] J. W. Campbell.[1] *1. Geriatrics, MetroHealth Medical Center, Cleveland, OH; 2. Business Administration, Weatherhead, Case Western Reserve University, Cleveland, OH.*

Purpose

To analyze the financial effects of a Comprehensive Senior Health & Wellness Center on Medicaid cost and Medicare cost. To analyze the effect on the bottom line of a health system of operating a SH&WC. The SH&WC includes L.T.C. 144 beds, PACE 150 participants, Hospice symptom control 14 beds and an 18 exam room outpatient senior center for both outpatient visit primary and specialty care. The center opened in stages: Outpatient 10/1/07, LTC 3/1/08, PACE 5/5/08, Hospice 10/6/08. In collaboration with the Weatherhead School of management, we anaylyzed the financial benefit to the health system and the cost savings to Medicare and/or Medicaid.

Methods

All results were done for the clinical areas for as long a time period as possible and then annualized. Hospice had no data available at the time of this analysis. Outpatient represented 1,782 unique patients and 18,188 outpatient visits. LTC had an average daily census of 138; only one quarter was available for analysis. Pace has a current census of 47 and had two months available for evaluation.

Results

Medicaid cost savings 1.3 million

Medicare cost savings 1.8 million

Net profit to hospital in excess of 3.4 million

Conclusions

A Comprehensive Senior Health & Wellness Center can save money for both Medicaid and Medicare.

A Comprehensive Senior Health & Wellness Center can generate profit for a health system when down stream revenue and cost are accounted for.

Senior Health Outpatient Down Stream Analysis

Inpatient Professional net revenue per unique outpatient	Outpatient Professional net revenue per unique outpatient	Inpatient Technical net revenue per unique outpatient	Inpatient Technical net revenue per unique outpatient	Pro Tech Total net per unique patient
(826.00)	(1,336.00)	2,845.00	1,242.00	1,924.00
Inpatient Professional net revenue per outpatient visit	Outpatient Professional net revenue per outpatient visit	Inpatient Technical net revenue per outpatient visit	Inpatient Technical net revenue per outpatient visit	Pro Tech Total net per outpatient visit
(81.00)	(131.00)	279.00	122.00	189.00

( )= loss

B97

Post Acute Care Hospitalist (PACH) Model vs Community-Based Physician Model of Nursing Home Care: A Comparative Trial.

F. Gloth,[1] M. J. Gloth.[2] *1. Medicine, Johns Hopkins University School of Medicine, Baltimore, MD; 2. HCR-ManorCare, Toledo, OH.*

Supported By: Study was financed by HCR-ManorCare

Purpose:

To evaluate whether a designated PACH (individual physician responsible for over 70% of residents) could improve some measureable outcomes in the long-term care (LTC) setting compared to a traditional cadre of community physicians, a comparative trial was designed to measure multiple cost and care variables.

Description of Study Methods:

Data were collected in an historical prospective fashion for 6 months before the institution of a PACH model (Pre-PACH) in a nursing home (bed capacity 110) in the Baltimore area. Similar data were collected in a similar nursing home (bed capacity 179) in the same region during the same timeframe. During the same 6 months in the following year (ending June 30, 2008) after initiating the PACH program the same outcome measures, which included demographic information (including payer mix and admissions per census), lab fees per resident day (prd), fallers and falls prd, medication errors, and pharmacy costs per patient day were collected prospectively in both PACH (Post-PACH) and non-PACH facilites (Non-PACH).

Results:

Demographics were similar among all groups. Results of intrafacility and interfacility average differences among models appear in the table below:

Conclusion:

Institution of a PACH in a nursing home was associated with a significant increase in laboratory costs and no improvement in fall rates. There was a non-signficant reduction in medication errors and pharmacy costs. These data support the hypothesis that a PACH model may lead to great clinician involvement, which may be associated with an increase in clinical testing and a decrease in pharmacy costs and medication errors. If true, the latter would likely far offset any costs associated with additional laboratory testing. These findings warrant further investigation of larger magnitude.

Outcome Measures	Pre-PACH	Post-PACH	Non-PACH	p(t-test)*	
				A	B
Lab Tests(CostPRD)	$1.93	$2.97	$0.97	<0.005	<0.001
Fallers (# PRD)	0.006	0.008	0.006	0.01	<0.005
Falls (# PRD)	0.007	0.01	0.008	<0.05	<0.05
Med Errors (# PRD)	0.006	0.001	0.06	0.33	0.16
Pharm Cost (CostPRD)	$36.64	$34.83	$42.64	0.55	0.27

***A = Pre-PACH vs Post-PACH; B=Post-PACH vs Non-PACH (over same Post-PACH period)**

B98

Potentially Inappropriate Medication Use in Nursing Home Hospice Patients.

J. Hantz,[1,2] C. Ruby-Scelsi,[2,3] D. McGurl,[4] S. Perera,[3] J. Hanlon.[3,5] *1. University of Pittsburgh, Pittsburgh, PA; 2. Departments of Pharmacy and Therapeutics, University of Pittsburgh, Pittsburgh, PA; 3. Department of Medicine (Geriatrics), University of Pittsburgh, Pittsburgh, PA; 4. Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA; 5. Center for Health Equity Research and Promotion and GRECC, Pittsburgh Veterans Affairs Health Care System, Pittsburgh, PA.*

Supported By: Funding Source: T32 AG021885

BACKGROUND

Few studies have examined the use of potentially inappropriate medications in elderly nursing home hospice patients.

OBJECTIVE

To evaluate inappropriate medication use in older hospice adults residing in three nursing homes.

METHODS

This cross-sectional study included 74 hospice patients (40.5% white, mean [standard deviation] age 84.5 [7.03]) residing in three nursing homes between January 1, 2003 and June 30, 2006. Medications prescribed at admission to hospice were recorded from the medical record. Inappropriate medication use was determined by applying Centers for Medicaid and Medicare Services criteria modified using the World Health Organization list of essential medicines for palliative care. Patient demographics and health status were also collected. Chi-square and t-tests were conducted to determine factors associated with inappropriate medication use.

RESULTS

The number of scheduled medications was 7.15 [3.91] and as needed medications was 2.81 [2.21]. Overall, 12.2% of patients were prescribed ≥1 potentially inappropriate medications. The most inappropriate drugs/drug classes were analgesics (i.e., propoxyphene and nabumetone), antihistamines (i.e., diphenhydramine, promethazine) and oral hypoglycemics (i.e., glyburide). Only having asthma/chronic obstructive pulmonary disease was found to be associated with inappropriate medication use ($p<0.05$).

CONCLUSIONS

Inappropriate medication use occurred in over 10% of elderly nursing home patients at the time of admission to hospice care. More studies are needed to investigate other aspects of suboptimal use of medications in this vulnerable population.

B99

Omission of Swallowing Recommendations in Hospital Discharge Summaries for Patients Transitioning from Acute to Sub-Acute Care.

P. C. Anderson, A. J. Kind, M. A. Smith, J. A. Hind, J. A. Robbins.
University of Wisconsin - Madison, Madison, WI.

Supported By: UW Shapiro Program; UW Hartford Center for Geriatrics Excellence, UW Section of Geriatrics; the UW Health Innovation Program; and the UW Institute for Clinical and Translational Research

Background: Dysphagia (difficulty swallowing) is a serious condition that frequently affects sub-acute care patients. By 2010 about 18 million adults will need to be treated for its complications, including pneumonia. Although efficacious dysphagia therapies exist, the adequacy of communication of these therapies to post-hospital sub-acute care settings remains unknown.

Objective: Examine the rate of swallowing recommendation omissions in hospital discharge summaries for patients discharged to sub-acute care facilities.

Sample: Stroke, hip fracture and cancer patients who were discharged to sub-acute care facilities in 2003-2005 from a single large academic medical center and who were billed for dysphagia evaluations by speech and language pathologists (SLPs) prior to discharge (N=199).

Methods: Swallowing recommendations were retrospectively abstracted from subject discharge summaries and from the final SLP consult note within the hospital medical record. Each recommendation was coded into 1 of 7 categories: dietary (food and liquid), postural/compensatory techniques (e.g. chin tuck), rehabilitation (e.g. exercise), meal pacing (e.g. alternate liquids/solids), medication delivery (e.g. crush pills), supervision (e.g. 1 to 1 assist) and other. Codes derived from the medical record and the discharge summary were compared for each patient, and any discrepancies found were noted. Omission frequencies were calculated for each category.

Results: The most common types of recommendations documented by SLPs within the medical record were dietary (included in 99% of records), supervision (65%) and postural (62%). Likewise, discharge summaries most often included dietary (54%), supervision (18%) and postural (13%) recommendations. 44% of discharge summaries omitted all swallowing recommendations made by SLPs during the hospitalization. 46%(91/198) of SLP dietary recommendations were omitted within discharge summaries, while 81%(99/122) of postural, 100%(18/18) of rehabilitation, 90%(73/81) of meal pacing, 96%(22/23) of medication, 79%(102/129) of supervision and 100%(3/3) of other recommendations were omitted.

Conclusions: Discharge summaries omitted all categories of SLP recommendations at notably high rates. Systems improvements are necessary to address these communication deficits. Further investigations are needed to explore the impact of these omissions on patient outcomes.

B100

Increased Hospitalization Cost in Older Adults with Higher Elderly Risk Assessment.

P. Y. Takahashi,[1,3] S. J. Crane,[1] E. E. Tung,[1] S. S. Cha,[2] G. J. Hanson.[1,3]
1. Internal Medicine, Mayo Clinic, Rochester, MN; 2. Biostatistics, Mayo Clinic, Rochester, MN; 3. Kogod Center of Aging, Mayo Clinic, Rochester, MN.

Supported By: Mayo Foundation

The project described was supported by Grant Number 1 UL1 RR024150 from the National Center for Research Resources (NCRR).

Introduction: Identifying predictors of increased hospitalization costs using a model from electronic information provides important information for healthcare providers and administrators.

Aim: The objective was to determine the relationship between score on the elderly risk assessment (ERA) model and 2-year hospitalization costs in an older community dwelling cohort.

Methods: This was a retrospective cohort study of patients over 60 impaneled in primary care on January 1st 2005. The ERA utilizes scores on a weighted fashion based of age, gender, prior hospitalizations, and comorbid health conditions. Each subject was scored and placed into 5 groups with top group representing the top 10% of scores. Hospitalization costs were calculated over a 2 year time span from 1/1/05 to 12/31/06 and included all direct hospital costs. The authors analyzed the data using logistic regression on SAS 6.01.

Results: There were 12, 650 patients with scores from the ERA from -7 to over 16. The average age in the top 10% by score was 80.9 yrs +/- 8.4 yrs compared to 64.1 yrs +/- 2.8 yrs in the bottom 15% ($p<0.001$). The two year costs in the highest scoring group had a median cost of $13,970 compared to a median cost in the lowest group of $1,590 ($p<0.001$).

Discussion: Older adults with higher ERA model scores had 8 fold higher costs of hospitalizations in 2 years compared to the group with the lowest ERA score. The ERA is a new administrative electronic instrument to help identify at-risk older adults in a primary care practice. The clinical application of this new, novel information would include potential case management for this stratified group. These findings reinforce the divergent healthcare utilization in older adults with multiple comorbid health conditions compared to a population that is younger and without these concerns.

B101

Prolonged hospital stays-associated factors in older inpatients with dementia.

P. Lang. *Department of rehabilitation and geriatrics, University Hospital of Geneva, Thônex-Geneva, Switzerland.*

Supported By: SPONSOR'S ROLE:

We are grateful to the Ministère de la Santé (France), the Caisse Nationale d'Assurance

Maladie des Travailleurs Salariés and the Institut de la Longévité et du Vieillissement

(INSERM, France) for their financial support.

ACKNOWLEDGEMENTS

This study was designed and conducted by the SAFES cohort study group which includes:

Joël Ankri, François Blanchard, Pascal Couturier, Benoit De Wazière, Moustapha Dramé,

Jean Bernard Gauvain, Régis Gonthier, Damien Heitz, Claude Jeandel, Damien Jolly, Nicolas

Jovenin, Pierre-Olivier Lang, Jean-Luc Novella, Olivier Saint-Jean, Dominique Somme,

Thierry Voisin.

Background: Prior studies have described dementia as increasing length of hospital stay (LoS), but so far no explanations have been proposed.

Objective: To identify early markers for prolonged LoS.

Design: A prospective, multicenter study.

Setting: Nine university hospitals in France.

Population: 178 community-dwelling or institutionalized subjects aged 75+ with dementia hospitalized through emergency departments (mean of age: 86.0 y.o; SD:5.9).

Methods: Prolonged LoS was defined according a limit adjusted for DRG. A comprehensive geriatric assessment during the first week of hospitalization enabled identification of early markers.

Results: Of the 178 hospital stays, 37 (21%) were prolonged. 84% concerned community-dwelling patients. Multifactor analysis demonstrated that demographic variables had no influence on the LoS, while diagnosis of delirium (OR = 2.31), walking difficulties (OR = 1.94) and report by the informal caregiver of severe burden (OR = 1.52) or poor social quality-of-life (OR = 1.25) were early markers for prolonged LoS (Table).

Conclusion: Delirium and walking difficulties were predictive factors for prolonged LoS in a cohort of demented inpatients. Systematic early screening for these two clinical syndromes and recommendations for early functional rehabilitation would probably limit such prolongation. The reported burden by informal caregivers and their poor perceived quality-of-life were also associated with longer stay. Community-based or early hospital interventions by multidisciplinary social networks supporting the informal caregivers might well avoid increased hospital admissions and LoS.

Multiple logistic regression analysis of predictive factors for a prolonged hospital stay (N = 178)

Charactristics		Early markers of prolonged hospital stay		
		Saty > f-DRG-adjusted limit		
		OR	95%CI	P
GENDER	man	1	/	0.7
	woman	0.97	0.82-1.75	
AGE*		1.04	0.95-1.42	0.2
DELIRIUM	no	1	/	<0.01
	yes	2.31	1.77-2.91	
WALKING DIFFICULTIES	no	1	/	<0.01
	yes	1.94	1.62-2.43	
SEVERE CAREGIVER'S BURDEN	no	1	/	<0.01
	yes	1.52	1.19-1.86	
SOCIAL QoL SCORE (Duke's health profile)	Caregiver	0.80	0.71-0.97	<0.01

*** OR calculated for ten year interval**

B102

The impact of geriatric training on hospital care of nursing home patients - a 12 month retrospective study.

S. I. Genkin,[1,2] J. Naik,[1,2] M. Davis,[1,2] B. Paris,[1,2] V. Marchello.[2,1] *1. Geriatrics, Maimonides Medical Center, Brooklyn, NY; 2. Metropolitan Jewish Geriatric Center, Brooklyn, NY.*

Nursing home residents admitted to hospitals most often are frail, functionally dependent, mentally impaired and have multiple comorbidities superimposed on acute illness. Geriatric training emphasizes addressing comorbidities such as polypharmacy, delirium, dementia, pressure ulcers, functional disability and malnutrition in acutely ill hospitalized patients.

Purpose: To determine whether hospitalized nursing home patients under the care of physicians with added geriatric training have better outcomes.

Method: Retrospective cohort study of 503 patients admitted from Metropolitan Jewish Geriatric Center (MJGC) to Maimonides Medical Center (MMC) over the period from July 1, 2005 to June 30, 2006 under the care of geriatricians and internists (146 and 357 respectively). The two study groups (geriatricians' and internists' patients) were analyzed by age, sex, length of hospital stay (LOS), readmission rate and expiration rate, as well as advanced directives status (DNR, DNI). Readmissions were analyzed by expiration rate.

Results: The group of patients admitted to the geriatricians were older (80.506 y.o. vs. 79.694 y.o.), had fewer females (53.42% vs. 62.46%), and their length of stay in the hospital was shorter (12 days vs. 16 days) compared to the internist group. There were total of 36 readmissions in geriatricians' and 91 in internists' group. The readmission rate was lower in the geriatric group of patients (24.66% vs. 25.49%) as was the expiration rate (15.75% vs. 17.93%). Advanced directives were more common in geriatric group then in the internist group (DNR: 19.86% vs. 14.85%) (DNI: 12.33% vs. 9.24%). Readmitted patients in the geriatric group had a lower rate of in-hospital expiration (4.11% vs. 5.6%).

Conclusions: The results of this study demonstrate a trend towards shorter hospital stays, decreased in-hospital mortality and lower readmission rates in the cohort of patients cared for by geriatricians. Whether these outcomes can be attributed to increased attention to comorbid conditions by geriatricians requires further analysis. It is important to also note a tendency towards more advance directives in the group under the care of geriatricians, which likely reflects an emphasis on the importance of this in geriatric training programs.

B103

Nursing Home to Emergency Room: Electronic Universal Transfer.

S. D. Fields,[1,2] J. Parisi,[1] J. Kineiko.[1] *1. Medicine, Gurwin Jewish Nursing and Rehabilitation Center, Commack, NY; 2. Medicine, SUNY Stony Brook, Stony Brook, NY.*

Supported By: HRSA

Purpose of the Study. Develop and demonstrate the value of an electronic universal transfer summary in transferring information from skilled nursing facility to acute care hospital. Methods. Over a three year period, Gurwin Jewish Nursing & Rehabilitation Center selected and implemented a web-based electronic medical record (EMR) and Computerized Physician Order Entry (CPOE) system designed for long term care. Gurwin worked with its vendor, Optimus EMR, to customize its existing transfer summary to include medical information recommended by AMDA. Gurwin also surveyed emergency room and hospital-based physicians to determine what medical information they desired from nursing homes when patients were transferred to the hospital. Data were collected about nursing home workflow processes surrounding transfer of patients to the acute care setting pre and post EMR implementation (fall 2005 and summer 2008). Summary of results with data and supporting statistics. Surveyed acute care physicians requested the following information from nursing homes: medical reason for transfer, updated medication, allergy and problem lists, advance directives, next of kin, recent laboratory tests, baseline cognitive and functional status, and name and contact information for the referring physician. The revised Optimus transfer report, or abbreviated EMR (aEMR), includes this information and documentation of skin and wounds. It allows both nurses and physicians to incorporate clinical notes. The aEMR takes minutes to produce and has significantly streamlined the transfer process. The mean time for medical staff to complete a Transfer Form has been reduced by 22.1 minutes per transfer, (from 33 mean min. pre-EMR to 10.9 mean min. post-EMR), a 66.7% decrease in time spent. The nursing workflow process is similarly shortened: mean time to complete a Transfer From has been reduced by 12.9 min., a 66.8% decrease, and the redesigned process has reduced mean time for nurses to collect and copy documents for inclusion with the Transfer Form by 21 min., an 81.3% decrease. Conclusions: The aEMR not only improves the workflow of transferring a nursing home resident to the acute care hospital, it also enhances patient safety by providing emergency medicine physicians with legible, accurate information that facilitates medication reconciliation, adherence to advance directives, and better communication across sites of care.

B104

Home-Based Screening of Rural Community Dwelling Older Adults by Emergency Medical Services and Referral to Transitional Case Management.

T. V. Caprio,[1] J. Karuza,[1] P. R. Katz,[1] K. Smith,[3] P. Cypher,[4] M. N. Shah.[1,2] *1. Division of Geriatrics & Aging, University of Rochester, Rochester, NY; 2. Dept. of Emergency Medicine, University of Rochester, Rochester, NY; 3. Office for the Aging, Livingston County, Mt. Morris, NY; 4. Genesee Valley Health Partnership, Dansville, NY.*

Supported By: DHHS/HRSA Rural Health Outreach Grant (D04 RH04491)

DHHS/HRSA Geriatric Academic Career Award (K01 HP00034)

Introduction:

The emergency medical services (EMS) system is a unique, community-wide medical system that can screen older adults for preventable diseases and needed services. The Livingston Help for Seniors program has implemented a novel, EMS-based program to screen, identify, and refer rural dwelling individuals at risk for preventable conditions, and ensure access to health and social services using aging services case managers and primary care physicians.

Methods:

EMS providers were educated regarding the appropriate care of older adults and taught to implement screening during emergency responses for risk of falling, medication errors, and depression. At-risk patients were referred to a transitional case management program, which offered patients home visits to evaluate needs and facilitated education and referrals to community services and communicated with primary care physicians. The home visits evaluated many domains including cognitive impairment, depression, activities of daily living, vaccination status, nutritional status, drug and alcohol abuse, advanced directives, and environmental risk factors.

Results:

This program has trained 187 emergency medical technicians and assessed 1380 patients during 2045 emergency calls between April 2006 and December 2007. Of these patients, 146 were eligible for and accepted a home visit by a transitional case manager. Commonly identified problems included falls (n=124, 85%), advanced directives (n=68, 47%), depression (n=64, 44%), vaccinations such as influenza and pneumococcal (n=54, 37%). Problems of interest included cognitive impairment (n=5, 3.4%), alcohol abuse (n=5, 3.4%), and drug abuse (n=1, 0.7%). Patients were very satisfied (>90%) with all aspects of the program.

Conclusion:

Home-based screening by EMS for common geriatric syndromes and involvement of transitional case managers is an effective intervention for rural communities. For some older adults, EMS is a safety net and provides their only contact with the health care system. Transitional case managers can facilitate the needed linkages between vulnerable rural-dwelling older adults and needed community-based social and medical services.

B105

Mid-Life Dementia Risk Scores Are Associated With Executive Function In Asymptomatic Adults At Risk for Alzheimer's Disease.

A. J. Marsh,[1] H. Blazel,[1] C. Gleason,[1,2] S. Asthana,[1,2] S. Johnson,[1,2] L. Puglielli,[1,2] C. Atwood,[1,2] B. Hermann,[1] M. Sager,[1] C. Carlsson.[1,2] *1. Univ of WI School of Medicine and Public Health, Madison, WI; 2. Madison VA GRECC, Madison, WI.*

Supported By: Funded by Beeson Career Development Award (C.Carlsson, NIA K23AG026752). Merck and Co., Inc provided study medication for this investigator-initiated trial.

BACKGROUND: Increased cardiovascular risk factors at midlife are associated with a greater risk of developing Alzheimer's disease (AD) in late life. Recently developed dementia risk scores use mid-life vascular and genetic components to predict the risk of developing late-life dementia. It is unknown whether dementia risk scores predict cognitive performance in asymptomatic middle-aged adults at an increased risk for AD.

OBJECTIVE: To describe the relationship between dementia risk scores and cognitive function in asymptomatic middle-age adults with a parental history of AD.

METHODS: In a baseline cross-sectional analysis from an ongoing statin intervention trial, middle-aged adult children of persons with AD underwent detailed cognitive assessment of memory, executive function, and mental processing speed, as well as fasting blood tests. Dementia risk scores were assigned to each subject according to a cardiovascular and genetic model as defined by Kivipelto et al. Pearson correlations were used to identify associations between dementia risk and cognition.

RESULTS: Participants (n=100, mean ± SD age 53.4 ± 7.9 yrs, 70% women, education 16.2 ± 2.9 yrs, 38% APOE4 positive) were cognitively normal at baseline (Mini Metal State Examination 29.5 ± 0.7 points out of 30) and had fairly average vascular risk profiles (BMI 27.85 ± 5.5 kg/m2, total cholesterol 189.98 ± 32.43 mg/dL, systolic blood pressure 121.5 ± 13.3 mm Hg). Dementia risk scores correlated positively with Color Trails B time (r =.311, p=0.0016) and inversely with Stroop color word score (r = -.255, p=0.0255), measures of executive function and processing speed. No correlation was noted between dementia risk scores and verbal or non-verbal memory scores.

CONCLUSION: In asymptomatic, middle-aged, adult children of persons with AD, higher dementia risk scores predict worse cognitive performance in executive function and processing speed, tests sensitive to early decline in AD. Future studies are needed to clarify if modifying dementia risk scores impacts cognition and reduces the risk of developing AD.

B106

Gender-Specific Differences in the Clinical Manifestations of Parkinson's Disease.

C. A. Rabinak, A. A. Liu, J. T. Thorne, M. A. Klufas, C. Henchcliffe, P. Piboolnurak, M. J. Nirenberg. *Weill Cornell Medical College, New York, NY.*

Supported By: Medical Student Training in Aging Research Program

Objective: To identify potential gender differences in the clinical presentation of non-motor and motor symptoms of Parkinson's disease (PD).

Methods: Cross-sectional analysis of subjects (N=169) enrolled in a study of the non-motor and motor manifestations of PD at an outpatient, academic movement disorders clinic. Subjects were evaluated using the Unified Parkinson's Disease Rating Scale (UPDRS), standard neuropsychiatric batteries, and chart reviews.

Results: Women (n=77) and men (n=92) had similar demographic features, except that the mean age of women was older than that of men (69.2 vs. 65.6 years, p=0.02), and there was a trend towards later age of PD onset in women (63.2 vs. 60.5 years, p=0.11). Women more frequently had a past medical history of anxiety (65% vs. 38%, p<0.001), depression (53% vs. 24%, p<0.001), and compulsive eating (16% vs. 6%, p=0.04) than men. On neuropsychiatric testing, women had greater disability on the Beck Anxiety Index (14.6 vs. 10.6, p<0.0001), Beck Depression Inventory-II (11.7 vs. 9.2, p=0.03), and Obsessive-Compulsive Inventory-Revised (9 vs. 6, p=0.02). Women also reported more falls than men (33% vs. 17%, p=0.03) and had a greater prevalence of comorbid essential tremor (10.4% vs. 2.2%, p=0.045). Motor disability scores were comparable in women and men, as measured by standard rating scales, including the UPDRS motor subscore (21.2 vs. 23.4, p=0.19), modified Hoehn and Yahr scale (2.0 vs. 2.0, p=0.37), and Schwab-England disability scale (90 vs. 90, p=0.24). The use of dopaminergic medications (300 vs. 300 levodopa equivalents, p=0.64) and presence of on-off fluctuations (25% vs. 31%, p=0.49) were similar in the two groups. Women had similar UPDRS ADL scores to men (9.1 vs. 8.7, p=0.6237) but lower quality of life scores on the emotional subset of the PD Quality of Life Questionnaire (33 vs. 36, p<0.001).

Conclusions: Our findings show gender-specific differences in the non-motor and motor manifestations of PD. Women in our cohort exhibited greater psychiatric dysfunction, more frequent falls, and a decreased emotional quality of life in spite of comparable motor disability. Increased awareness of these gender differences in PD may improve clinical outcomes and patient quality of life.

B107

Reduced Cerebral Perfusion is Associated with Increased Vascular Risk and Worse Memory Performance in Middle-Aged Adults at Risk for Alzheimer's Disease.

C. Carlsson,[1,2] Z. Wen,[3] G. Xu,[1] H. M. Blazel,[1] H. A. Rowley,[1] C. E. Gleason,[1,2] B. P. Hermann,[1] M. A. Sager,[1] S. Asthana,[1,2] T. J. Carroll,[4] S. B. Fain,[1] S. C. Johnson.[1,2] *1. University of Wisconsin School of Medicine and Public Health, Madison, WI; 2. Madison VA GRECC, Madison, WI; 3. University of Chicago, Chicago, IL; 4. Northwestern University Medical School, Chicago, IL.*

Supported By: Funded by a Beeson Career Development Award (NIA K23 AG026752). Merck & Co., Inc. provided study medication for this investigator-initiated trial.

BACKGROUND: Increased midlife vascular risk is associated with greater risk of Alzheimer's disease (AD) decades later, possibly via contributions to cerebrovascular dysfunction - an early finding in AD. It is unclear if impaired cerebral blood flow (CBF) is related to vascular risk and memory in asymptomatic middle-aged adults at increased risk for AD.

OBJECTIVE: To investigate the relationship between CBF, vascular risk, and memory performance in asymptomatic middle-aged adults with a parental history of AD.

METHODS: Baseline data (cognitive tests, vascular risk assessment, MRIs) from an ongoing statin intervention trial were used in this analysis. Contrast-enhanced MRIs were analyzed using voxel-based analysis. Vascular risk was assessed by Framingham 10-Year Cardiovascular (CVD) Risk %.

RESULTS: Participants (n=42, 53.6 ± 6.8 yrs, 74% women, 36% APOE4 carriers) had fairly low mean 10-Year CVD Risk (3%), yet higher vascular risk % was associated with reduced regional CBF (Fig 1). Poorer regional CBF correlated with worse performance on delayed recall of a list-learning task (Fig 2).

CONCLUSIONS: In asymptomatic middle-aged adults at increased risk for AD, regional cerebral hypoperfusion is associated with increased vascular risk and worse memory performance. Further studies are needed to clarify if treating vascular risk factors improves cognition or delays AD onset.

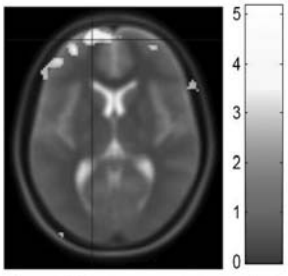


Figure 1. Greater vascular burden (as measured by Framingham 10-Year CVD Risk %) was associated with reduced regional perfusion in the prefrontal cortex (cluster size 1336; t=5.14; x, y, z = -14, 68, -8).

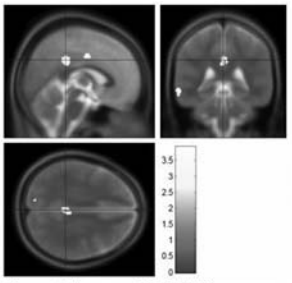


Figure 2. Increased CBF in the precuneus (t=3.18; x, y, z = -12, -82, 38), posterior cingulate (shown, t=3.51; 4, -34, 36) and frontal cortices (t=3.90; 46, 42, 18) was associated with better scores on delayed recall on the Hopkins Verbal Learning Test (adjusted for age and education).

B108

White matter hyperintensities and eye-hand coordination in the oldest old: Exploratory study using an automated white matter hyperintensity labeling pathway.

E. Dickerson,[1,2] V. Venkatraman,[2] J. Guralnik,[3] M. Pahor,[4] H. Aizenstein,[2] C. Rosano.[2] *1. Temple University School of Medicine, Philadelphia, PA; 2. University of Pittsburgh, Pittsburgh, PA; 3. National Institute on Aging, Bethesda, MD; 4. Wake Forest University School of Medicine, Winston Salem, NC.*

Supported By: American Federation of Aging Research & National Institute of Aging via T35 AG026778. U01AG22376 & National Institute on Aging, Intramural Research Program. Claude Pepper-Pittsburgh (1 P30 AG024827), Paul Beeson Award (1K23 AG 028966-01), R03 AG 025076-01A1, 1 RO1 AG029232-01.

Objectives:

White matter hyperintensities (WMHs) are areas of high signal intensity present on T2-weighted MRI scans of older adults. These areas are associated with structural changes of microvascular etiology in the brain's connecting fibers. WMHs have been associated with declines in motor performance, cognition and depression. To our knowledge, the spatial distribution of WMH burden has not been examined in relation to eye-hand coordination task performance. Of particular interest is the inferior longitudinal fasciculus (ILF)-an important

structure in visual object recognition that connects the inferior occipital and inferior temporal lobes.

We hypothesize that higher ILF-WMH burden is associated with lower accuracy on a task of eye-hand coordination, and that associations are independent of total brain volume and total WMH burden. We test this hypothesis for both hemispheres.

Methods:

Brain MRIs were obtained from 27 participants of the Pittsburgh LIFEp study. WMH burden was measured in parts per million (PPM) of total brain volume and for major white matter tracts. Subjects completed a computerized task that required responding with the right or left index finger to a visual stimulus composed of a series of 'R's or 'L's respectively.

Results:

Accuracy was similar for responses requiring the left index finger (mean: 84.6%, median: 95.0%) or the right index finger (mean 82.6%, median: 95.0%) and differences were not significant (paired t-test p-value: 0.7). WMH burden within the right ILF was significantly associated with worse accuracy of responses made with the right hand independent of age, total WMH burden, and total brain volume (partial correlation coefficient r2= -0.29, p= 0.01). Accuracy in responses requiring the left hand were not significantly associated with WMH burden in either the right or left ILF.

Conclusion:

Our results suggest that WMH burden within the right ILF is important for the execution of this eye-hand coordination task for responses made with the right hand. Future studies to identify brain networks associated with eye-hand coordination in older adults are warranted.

B109

Differences in uptake of psychotherapy according to ethnicity: Results from a primary care practice-based depression intervention trial.

J. Joo,[1] K. Morales,[2] H. Bogner,[3] J. Gallo.[4] *1. Geriatric Psychiatry, U of Pennsylvania, Philadelphia, PA; 2. Department of Biostatistics and Epidemiology, U of Pennsylvania, Philadelphia, PA; 3. Department of Family Practice and Community Medicine, U of Pennsylvania School of Medicine, Philadelphia, PA; 4. Department of Family Practice and Community Medicine, U of Pennsylvania School of Medicine, Philadelphia, PA.*

Supported By: NIMH, T32

Purpose: Psychotherapy is an evidence-based treatment for late-life depression, yet rates of engagement among older adults are low. To characterize patients who did or did not receive interpersonal psychotherapy (IPT) made available in primary care as a component of an intervention trial for late-life depression.

Methods: The Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) was an RCT of a primary care practice-based intervention that incorporated a depression health specialist (DHS) in primary care. Participants were identified through a two-stage, age-stratified depression screening to derive a representative sample of attenders. Our analysis employed the multivariate form of logistic regression to focus on the 1,188 persons with complete data on covariates assessed at baseline. Participants were sorted into categories based on clinical diagnostic assessment for depression into major depression, clinically significant minor depression, and not meeting criteria for depression.

Results: Among 320 patients who received the intervention, 81 persons met with the depression care specialist over the course of a 2-year follow-up. Compared to whites, persons who self-identified as African-American were less likely to have received IPT, even after adjusting for potentially influential characteristics such as age, gender, medical conditions, depression clinical status, cognitive functioning, and social support (adjusted odds ratio = 0.27, 95% confidence interval [0.149, 0.490]).

Conclusions: Older African Americans were less likely than whites to receive IPT even in the context of factors which could facilitate uptake such as co-location in primary care and therapy at no cost. Given the importance of psychotherapy as a treatment for depression in late life, barriers to psychotherapy uptake should be addressed.

B110

Nurses' Recognition of Delirium in the Hospitalized Older Adult.

K. L. Rice,[1] M. Bennett,[2] M. Gomez,[1] K. Theall,[2] M. Knight,[1] M. Foreman.[3] *1. Ochsner Medical Center, New Orleans, LA; 2. Louisiana State University Health Sciences Center, New Orleans, LA; 3. University of Illinois, Chicago, IL.*

Supported By: No financial disclosures for any author

The purpose of this correlational study was to compare nurse and expert diagnostician ratings for incident delirium in older adults hospitalized on 6 med/surg units in a tertiary care teaching hospital; and identify patient characteristics associated with nurses' underrecognition of delirium. The convenience sample included patients 65 years and older, able to write and speak English, and participate in daily interviews. Delirium on admit was an exclusion criteria. Research methods included baseline cognitive assessment by the researcher within 72 hours of admit which included MMSE and Confusion Assessment Method (CAM) ratings. Daily paired (nurse vs. researcher) CAM ratings were completed until either discharge or delirium detected. Seventeen hundred eligible med/surg patients were screened over 8 months with 20% declining because of the burden of written consent. Results from the 170 patients completing data collection included: incident delirium in 7% (12/170) and failure of nurses to recognize delirium 75% (9/12) of the time with poor agreement between the nurse and researcher for all observations (N = 555) (CAM sensitivity = 25.0%, specificity = 99.6%, K statistic = 0.34). Delirious patients were hospitalized 6.1 days longer (t (168) = -4.00, p <0.0001). A generalized estimating equation (GEE) logistic regression model identified factors significantly (p<0.05) associated with delirium underrecognition that included: increasing age (OR=1.1), increasing length of stay (OR=1.1), widowed marital status (OR=8.4), dementia (OR= 8.5), and hypoactive delirium (OR=180.4). ROC curve analysis of researchers' serial MMSE scores supported a 2-point cutoff (area under curve=89%) as a delirium predictor. These findings provide insight into the underrecognition of delirium by nurses and thereby ways to improve its recognition.

Comparison of Patient Characteristics

Patient Characteristics	Delirious (n=12)	Delirium Recognized (n=3)	Delirium Underrecognized (n=9)
Mean Age +/- SD	80 +/-9	78 +/-12	81 +/- 9; p< 0.05
Hip Fracture	8/12 (67%)	2/3 (67%); p < 0.05	6/9 (67%)
Other Orthopedics	1/12 (8%)	1/3 (33%); p < 0.05	0/9 (0%)
Hypoactive type	10/12 (83%)	2/3 (67%); p < 0.05	8/9 (89%); p < 0.000001
Baseline MMSE +/- SD	23.9 +/- 7.2	24.3 +/- 7.2	23.8 +/-7.6; p < 0.0001
MMSE at delirium +/- SD	19.4 +/- 8.6	19.3 +/- 8.3	19.4 +/- 9.2; p < 0.001
Dementia	5/12 (42%)	1/3 (33%)	4/9 (44%); p < 0.05

B111

Prevalence and Correlates of Dementia Due to Vitamin B12 deficiency in the Elderly Presenting to a Tertiary Care Hospital in India.

L. Varghese, K. P. Mathews, S. Vigeswarpu, S. Sathyendra, G. K. Gopal, M. Alexander. *Medicine Unit 3, Christian Medical College Hospital, Vellore, Tamilnadu, India.*

Supported By: Fluid research grant, CMC Hospital Vellore

PURPOSE OF THE STUDY A recent study from India showed a community prevalence of Vitamin B12 deficiency of 67% in males.

Vegetarians had a four fold risk of being B12 deficient. This study was carried out to estimate the prevalence of dementia due to Vitamin B12 deficiency and to delineate the clinical and laboratory parameters and the response to treatment.

DESCRIPTION OF STUDY METHODS In a prospective study, 200 elderly patients (>60 years) with dementia were recruited from the medicine, neurology and geriatrics OPDs over a period of 10 months. The diagnosis of dementia was by DSM IV criteria. All patients underwent a detailed history, examination including MMSE and had a vitamin B12 level, in addition to other biochemical blood tests and neuroimaging. Patients with a B12 level of < 150 pg./ml were diagnosed with Vit B12 deficiency and reviewed after 6-8 weeks of therapy for re-assessment of neurological status.

RESULTS: 70% of the patients were male. 70% were in the 60-69 year age group. 10.5% of the patients had dementia due to B12 deficiency (B12 dementia) and 8.5% had B12 deficiency associated with Alzheimer's or vascular dementia. Patients with B12 dementia had a shorter duration to presentation (10 vs 45 months) compared to other dementia (p<0.001), more severe dementia (MMSE 13 vs 17) compared to others (p<0.001) and significant association with vegetarianism (OR=8). Myelopathy (40%),neuropathy (50%) and ataxia (20%) were common in B12 dementia. High mean corpuscular volume and high LDH levels had high specificities (>95%) but low sensitivities (60-70%) in the diagnosis of B12 deficiency. There was an improvement in MMSE scores by 10 points (p<0.001) in B12 dementia at the end of 8 weeks. The neurological signs (except myelopathy) also showed improvement after treatment.

CONCLUSION: 10.5% of elderly patients with dementia had B12 dementia and improved significantly with treatment. A high index of suspicion for B12 dementia is required in developing countries and populations with a large proportion of vegetarians.

B112

Impaired Olfaction Predicts Incident Dementia in Elderly Men: The Honolulu-Asia Aging Study.

M. Ochner,[1] R. Abbott,[2,1] R. Chen,[2] C. Bell,[1] L. White,[1,3] H. Petrovitch,[2,1] G. Ross,[4,1] L. Launer,[5] P. Blanchette,[1] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI; 4. Department of Veterans Affairs, Honolulu, HI; 5. National Institute on Aging, Bethesda, MD.*

Supported By: The Hawaii Medical Student Training in Aging Research (MSTAR) National Training Center (NIA, John A. Hartford Foundation & AFAR grant); The John A. Hartford Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; Honolulu Department of Veteran Affairs; National Institute on Aging. The investigators retained full independence in the conduct of this research.

Background: Olfaction deficits have been noted in neurodegenerative diseases, especially Alzheimer's dementia. However, there are no prospective cohort studies of olfaction and incident dementia. We examined the predictive value of olfaction deficits for incident dementia and its subtypes in elderly Asian men.

Methods: The Honolulu-Asia Aging Study (HAAS) is a population-based study of Japanese-American men that began with the fourth Honolulu Heart Program examination. In 1991-93, 3734 Japanese-American men ages 71-93 years were administered the Cognitive Abilities Screening Instrument (CASI). Incident dementia over 6 years of follow-up was classified by DSM III-R criteria, incident Alzheimer's disease (AD) by NINDS-ADRDA criteria, and incident vascular dementia by California ADDTC criteria. Olfaction was measured using the Brief Smell Identification Test at Exam 4 or Exam 5 of the HAAS, and was analyzed as a continuous variable and in quartiles. Subjects with prevalent dementia were excluded from incidence analyses. This study was approved by the IRB of Kuakini Medical Center.

Results: Bivariate analyses showed significant differences in mean CASI score by olfaction quartiles, where lower CASI scores were associated with impaired olfaction (p<0.0001). Those in the lowest quartile of olfaction had significantly higher incident dementia (18.9% vs 2.7%, p<0.0001) and incident AD (9.7% vs 1.5%, p<0.0001) compared to those in the highest olfaction quartile. Using Cox proportional hazards models, adjusting for age, education, ApoE4, prevalent cardiovascular diseases and risk factors, those in the lowest quartile of olfaction had a significant increase in risk of incident dementia (RR=5.73, 95%CI=2.97-11.1, p<0.001), and incident AD (RR=5.73, 95%CI=2.35-14.0, p<0.001), using the highest quartile as reference. These relationships were stronger when analyses included only those with good cognitive function at baseline.

Conclusion: Impaired olfaction was a significant predictor of incident dementia and Alzheimer's disease, but not vascular dementia. Clinically, this may prove to be a useful tool for early detection of AD and possibly early institution of treatment or preventive measures.

B113

Ischemic Stroke Outcomes following Thrombolytic Therapy in Octogenarians Receiving Statin Drugs.

N. Zeevi,[1] G. A. Kuchel,[1] N. S. Lee,[2] I. Staff,[2] L. McCullough.[1,2] *1. University of Connecticut Health Center, Farmington, CT; 2. Stroke Center, Hartford Hospital, Hartford, CT.*

Supported By: UConn Center on Aging

Background: HMG-CoA Reductase Inhibitors (statins) improve acute ischemic stroke (AIS) outcomes, yet may increase risk of intracerebral hemorrhage (ICH). Both effects are likely mediated via mechanisms distinct from lipid reduction. These findings are of particular concern in older adults who have both a high incidence of stroke and a predisposition to ICH. It is unclear how statins influence stroke outcomes in elderly patients treated with recombinant tissue plasminogen activator (rtPA). Methods: A retrospective analysis of patients ≥80 (n=514) admitted 2005-2008 to a comprehensive stroke center with AIS were compared to their younger counterparts (n=1029). Effects of prestroke statin use on admission and discharge NIH Stroke Scale (NIHSS), rate of thrombolytic treatment, rates of symptomatic intracerebral hemorrhage (sICH) and in-hospital mortality were evaluated. Results: Rates of rtPA treatment were similar in younger and older groups (19% vs. 18%). LDL was lower in elderly patients receiving statins (70±28 vs. 82±28 mg/dl). In the older rtPA treated cohort, both statin treated and nontreated groups showed improvement in NIHSS from admission to discharge (reduction of 5.4 points in both groups). Older patients did not have an increased risk of sICH despite higher NIHSS on admission (7% in the <80 cohort vs. 6% in the ≥80 cohort, p=.9). Multivariate analysis demonstrated that rtPA use and admission NIHSS predicted sICH (p<.05) and statin use approached significance (p=.052; 95% CI 0.98-27.9). Despite higher sICH rates in elderly patients on statins (4% vs. 11%), mortality rates were lower in the statin treated group (29% vs. 46%, p=.09). Conclusions: Risk of sICH tends to be increased in elderly patients on statins who receive thrombolytic therapy for AIS. While caution needs to be taken when administering thrombolytics to older individuals already using a statin, increased sICH in elderly statin users did not translate into excess in-hospital mortality. Therefore, excess death in the elderly cohort not taking statins may be secondary to death from other non-neurological causes. This work shows that statins are safe in elderly treated with thrombolytics for AIS.

B114

Sex Differences in Stroke Outcome for Octogenarians Receiving Statins.

N. Zeevi,[1] G. A. Kuchel,[1] N. S. Lee,[2] I. Staff,[2] L. McCullough.[1,2] *1. University of Connecticut Health Center, Farmington, CT; 2. Stroke Center, Hartford Hospital, Hartford, CT.*

Supported By: UConn Center on Aging

Background: HMG-CoA Reductase Inhibitors (statins) have been shown to improve outcomes in patients with coronary heart disease and acute ischemic stroke (AIS). Proposed mechanisms extend beyond lipid reduction to neuroprotective effects. Recent trials, involving non-elderly subjects, demonstrated significant improvements in cardiac and stroke outcomes with statin therapy. Methods: Through a retrospective review, patients ≥80 years (n=514) admitted (2005-08) to a comprehensive stroke center with AIS were compared to younger counterparts <80 years (n=1029). Variables studied included statin use, admission and discharge NIH Stroke Scale (NIHSS) and hospital mortality. Results: 514 patients ≥80 (mean age 86 ± 4 years) and 1029 patients <80 (mean age 63 ± 12 years) had an AIS. Women composed a larger proportion of the older cohort (62% vs. 46%, p<.05). There was no significant difference in the percentage of patients pretreated with statin drugs according to age (36% in the ≥80 cohort vs. 39% in the <80 cohort) or sex (35% in women vs. 39% in men). LDL was lower in elderly patients receiving statins (74±37 vs. 94±35 mg/dl). Stroke severity as measured by the NIHSS was greater in elderly patients (9.3 vs. 6.8, p<.05). Stroke severity and hospital mortality were highest in elderly females with no apparent difference between statin users and nonusers (NIHSS = 10.2 in women ≥80 vs. 7.8 in men ≥80, p<.05; mortality of 28% in women ≥80 vs. 21% in men ≥80). Older men showed a trend towards improved outcome with statin use (mean NIHSS=6.7 vs. 8.6, p=.09, 95% CI -.28-4.14) as did the younger cohort (6.3 vs. 7.1, p=.09, 95% CI -.12-1.72). Conclusion: Statin drug pretreatment in men over 80 years and all patients less than 80 years appears to be associated with improved stroke severity at onset. Elderly women had the most severe strokes, with outcome not influenced by pretreatment with statins. Sex-based differences in stroke pathophysiology, including a greater proportion of cardioembolic versus atherothrombotic strokes in elderly women may explain our findings.

B115

Changes in suicidal ideation with antidepressant treatment in patients with schizophrenia and subthreshold depression.

S. Sherman,[1] I. Fellows,[2] E. Solorzano,[2] S. Zisook.[2] *1. Western University of Health Sciences, College of Osteopathic Medicine, Pomona, CA; 2. Department of Psychiatry, University of California, San Diego, La Jolla, CA.*

Supported By: This work was supported, in part, by RO-1 MH 063931 Citalopram Augmentation of Older Patients with Schizophrenia (S. Zisook, PI), and National Institute of Mental Health grants MH66248, MH19934, P30 MH080002, the National Institute of Aging grant T35AG026757, the Department of Veterans Affairs the Sam and Rose Stein Institute for Research on Aging at the University of California, San Diego

Purpose: This study examined the use of citalopram in middle aged and older individuals diagnosed with comorbid schizophrenia/schizoaffective disorders and subsyndromal depression (SSD). While many physicians prescribe antidepressants to patients with schizophrenia and schizoaffective disorder who have SSD, there is limited research on their effects on suicidality. This data was collected as part of a larger randomized, double-blind, placebo-controlled study.

Method: 198 patients from two sites, University of California San Diego and University of Cincinnati were recruited from board-and-care facilities, VA Health Care Centers, general outpatient settings and the UCSD Geriatric Psychiatry Intervention Center in San Diego. Suicidality was measured using the Beck Scale for Suicidal Ideation (BSSI), items concerning suicidal ideation on the Calgary Depression Rating Scale (CDRS) and Hamilton Depression Rating Scale (HAM-D) and the Intercept Scale for Suicidal Thinking. The Intercept Scale was created to assess suicidality in the schizophrenic population, with concepts like "Wish to die" and "Desire to make active suicide attempt" which are assessed on a scale of 0 to 2 by a blind rater and principal investigator.

Results: After 12 weeks of treatment, the citalopram treatment group had a significantly lower level of suicidality when compared to the placebo group, as measured by the Intercept Scale ($\chi 2 = 7.28$, $p < .05$). When controlling for baseline scores and treatment site, the citalopram treatment group had a significant decrease in suicidality compared to placebo group ($F(1,150) = 5.00$, $p < .05$). There was a .748 change in suicidality as measured by the Intercept scale, with scores in the citalopram treatment group 1.66 and .912 before and after treatment, respectively. BSSI, CDRS and HAM-D scores did not have any significant change following treatment with citalopram.

Conclusions: Augmentation of treatment with citalopram in schizophrenia patients with subsyndromal depression is associated with a decrease in suicidality. Future studies should examine if this decrease in suicidality correlates with a change in quality of life, including number of suicide attempts.

B116

Risk Factors for Poor Cognitive Outcomes after Critical Illness.

T. D. Girard,[1,2] J. C. Jackson,[1,2] P. P. Pandharipande,[1,2] J. L. Thompson,[1] A. K. Shintani,[1] E. W. Ely.[1,2] *1. Vanderbilt University School of Medicine, Nashville, TN; 2. VA Tennessee Valley Healthcare System, Nashville, TN.*

Supported By: Saint Thomas Foundation, NIH (AG001023, HL007123, AG031322), Hartford Geriatrics Health Outcomes Research Scholars Awards Program, Vanderbilt Physician Scientist Development Program, VA GRECC, VA CSRD CDA

Objectives: To identify risk factors for poor cognitive outcomes after critical illness.

Design: Prospective cohort study nested within a clinical trial.

Setting: 541-bed community-based hospital.

Participants: Adult medical ICU patients who survived to ICU discharge after mechanical ventilation >12 hours were eligible, except those who were post-cardiac arrest, post-cardiac bypass or neurosurgery, moribund, ventilated >2 weeks, or had severe dementia or a large stroke.

Measurements: Demographics and clinical characteristics were collected upon enrollment. Patients were assessed daily for delirium using the Confusion Assessment Method for the ICU. Cognitive function was measured 3 and 12 months post-enrollment in survivors using a comprehensive neuropsychological battery, and cognitive outcome was categorized as a 5-level ordinal outcome ranging from no cognitive impairment to dead.

Results: Of 127 patients enrolled, seven withdrew and six were lost to follow-up; cognitive outcome was determined for 114 (90%) patients. At 3-month follow-up, 14% had no impairment, 12% had mild/moderate impairment, 42% had severe impairment, 2% were too ill to test, and 30% were dead. At 12-month follow-up, 15% had no impairment, 18% had mild/moderate impairment, 19% had severe impairment, and 48% were dead. According to a proportional odds logistic regression model with generalized estimating equations (GEE), younger age (p=.02), sepsis on admission (p=.03), treatment with a paired sedation and ventilator weaning protocol (p=.03), higher doses of benzodiazepines (p<.001) and propofol (p=.004), and fewer days of delirium (p=.03) independently predicted worse cognitive outcomes during follow-up. Covariates in the model not associated with cognitive outcomes included severity of illness, education,

preexisting cognitive impairment, and opiate dose during the ICU stay. Also, an interaction was noted between delirium duration and sepsis: delirium duration predicted cognitive outcome among septic patients but not among patients without sepsis.

Conclusion: Age, sepsis, sedation and ventilator management, and duration of septic delirium are important predictors of cognitive outcomes after critical illness.

B117

Cognitive Impairment (CI), Functional Status (FS) and Dialysis Outcomes in Older African American Hemodialysis (AAHD) Patients.

J. Ennis,[1] N. Stankus,[1] K. Campbell,[2] W. Dale.[2] *1. Medicine/Nephrology, University of Chicago, Chicago, IL; 2. Medicine/Geriatrics, University of Chicago, Chicago, IL.*

Supported By: First author is supported by a 2008 Nephrology Fellowship Research Award from Amgen

Purpose: To assess the relationship between CI and FS in older AAHD patients and adverse outcomes, such as hospitalizations, infections, vascular access failures, and mortality. **Methods:** AAHD patients over 60 were enrolled in a prospective, single-center observational cohort study to measure CI and FS and assess their impact on specific HD outcomes. Assessments were completed at baseline and at three-month intervals. CI was assessed using the mini-mental state examination (MMSE) and clock drawing test. FS was assessed by the ability to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Mobility was assessed using the Timed Get-Up-and-Go test. Health status was assessed with the SF-36. Length of time on HD and type of dialysis access was recorded for each patient. Adverse outcomes including bacteremic episodes, dialysis access failures (clotted fistula or graft), hospitalizations, and death were recorded for each patient. **Results:** Preliminary data was collected on 35 AAHD patients, 11(31%) men and 24 (69%) women. Mean age was 72.5 $\pm$ 7.0 (range 60-85). Thirty-four (97%) patients had at least 4 comorbid conditions in addition to end-stage renal disease. Mean length of time on HD was 45.7 $\pm$ 29.9 mos (range: 3-107 mos). CI was mild: mean MMSE score was 25.9 $\pm$ 3.7 (range 17-30) and clock drawing tests showed on-average mild visuospatial errors. FS deficits were more common: mean time to complete Get-Up-and-Go test was 17.6 $\pm$ 9.5 sec; 9 patients utilized an assist device and 2 were unable to perform the test. Patients were able to independently perform a mean 5.4 $\pm$ 1.0 of 6 ADLs and 6.2 $\pm$ 1.9 of 8 IADLs. Mean total SF-36 score was 57.4 $\pm$ 14.6 (range 30-85), and mean physical health component was particularly low at 45.8 $\pm$ 17.5 (range 14-83). Patients experienced on average 1.1 $\pm$ 1.7 adverse outcomes (bacteremic episode, access failure, or hospitalization) over 6 mos. Nine patients experienced 2 or more adverse outcomes, and 5 (14%) died within 6 mos of enrollment. Lower FS and decreased mobility were associated with increased age, longer time on HD, increased hospitalizations, and death. **Conclusion:** In these AAHD patients, CI was mild but functional impairment was significant. Lower FS was prospectively associated with worse outcomes including increased mortality in these patients.

B118

Prevalence of asymptomatic Gram-negative bacilli carriage in Nursing Home residents with Indwelling Devices.

P. Dommeti, L. Wang, L. Mody. *U of Michigan, AA VAMC, Ann Arbor, MI.*

Supported By: NIA/NIH and ASP/AGS T. Franklin Williams Scholarship

Abstract:

Objective: Asymptomatic colonization with gram-negative bacilli (GNB) often precedes the onset of symptomatic infections. We assess association of multi-site GNB colonization with commonly used devices including indwelling urinary catheters and enteral feeding tubes in nursing homes (NHs) residents.

Methods: We conducted an analytic cross-sectional epidemiologic study involving 14 NHs in MI. Residents with (N=105) and without (N=108) an indwelling device were enrolled. Swabs were obtained from nares, oropharynx, groin, perianal area, feeding tube site as well as wounds if present. GNB were isolated on MacConkey agar. Colonies that were phenotypically unique from each site were identified using API-20E test strips and then tested for ceftazidime and ciprofloxacin resistance using E-test strips.

Results: Colonization with GNB was common, but more so in 96% (101/105) of the device group when compared with 82% (89/108) of controls (OR 5.4, 95% CI 1.7, 19.5, P = .001). Device group residents carried a total of 413 Gram-negative unique isolates (mean 4.2 GNB/resident) compared with 277 unique isolates (2.6 GNB/resident) in the Control group, (P < .001). Common colonizing GNB in device group included E. coli (N = 125), Proteus mirabilis (N = 78), P. aeruginosa (N = 58), Klebsiella spp (N = 51), P. stuartii (N = 26), M. morganii (N=14) and Acinetobacter spp (N=10). GNB commonly colonized perianal area (N = 170), groin (N = 159), oropharynx (N = 52), nares (N=21), and wounds (N=11). Ceftazidime-resistant GNB colonized 24 residents in the device group compared with five residents in the control group. Ciprofloxacin resistance was tested in a subgroup of 66 residents (33 in Device and 33 in Control groups). Ciprofloxacin resistance was very common in both groups: 25/33 (75%) in Device group, 19/33 (57%) in Control group.

Conclusion: Device group are more likely to carry GNB at multiple sites and thereby have a greater GNB colonization density which could contribute to an increase in infection risk. Ceftazidime resistance was more prevalent in Device group compared with Control group, however Ciprofloxacin resistance was highly prevalent in both groups suggesting a need to explore other risk factors responsible for Quinolone resistance in NHs.

B119

Spironolactone is as effective as HCTZ in geriatric hypertension.

P. Kithas, M. A. Supiano. *Division of Geriatrics, University of Utah and GRECC, Salt Lake City, UT.*

Supported By: VA Research Service and GRECC

Background: Despite the important role of aldosterone in the pathophysiology of geriatric hypertension, the comparative efficacy of aldosterone blockade with spironolactone (S) to HCTZ (H) as monotherapy is unknown. Given that nocturnal BP is an independent predictor of cardiovascular outcomes, we hypothesized that S would equal the efficacy of H in lowering both 24hr and nocturnal BP.

Methods: 45 subjects with Stage 1 HTN (24 men, 21 women, mean age 69 yrs) were randomized and completed 6 months of therapy with H (n=21, mean dose of 42.2mg plus KCl as needed to maintain K^+>3.5mEq/l) or S (n=24, mean dose of 71.4mg) titrated to a target SBP < 140 mmHg. Seven additional subjects withdrew during treatment (3 H and 4 S) due to drug intolerance or SBP > 160 mmHg after 2 months. Baseline (following 4 weeks of drug wash out) and 6 month 24hr data were obtained (SpaceLabs) and % change in BP from baseline determined.

Results: A significant decrease in BP for both 24hr and nocturnal periods occured for both H and S groups (table). The % change in BP was comparable between H and S for 24hr (-8$\pm$-1 vs -11 $\pm$-1%, p=0.11) and nocturnal (-7$\pm$-2 vs -10$\pm$-2%, p=0.16) periods. K^+ levels did not change in either group (H: 3.8$\pm$0.4 to 3.8$\pm$0.4; S: 4.1$\pm$0.2 to 4.2$\pm$0.3 mEq/l) and no instances of hyperkalemia occured.

Conclusions: H and S are equally efficacious in reducing both 24hr and nocturnal BP in an older Stage I hypertensive population. Potential benefits of aldosterone blockade in this population should be further investigated.

	H - 24 hour	H - Nocturnal	S - 24 hour	S - Nocturnal
Baseline	149$\pm$9/ 85$\pm$7	135$\pm$12/ 75$\pm$7	142$\pm$9/ 81$\pm$8	130$\pm$9/ 73$\pm$8
Six month	136$\pm$9/ 79$\pm$6	125$\pm$9/ 71$\pm$5	126$\pm$9/ 74$\pm$6	116$\pm$9/ 67$\pm$7

mm Hg; means $\pm$ SD; P<0.001 for each baseline to 6-month comparison

B120

Association of religiosity and use of breast cancer screening methods among older women in Latin American and Caribbean cities.

M. Lopez,[1] C. Coggin,[1] X. Urrutia-Rojas,[2] C. A. Reyes-Ortiz.[1] *1. Social Behavioral Sciences, School of Public Health, University of North Texas Health Science Center, Fort Worth, TX; 2. School of Public Health, University of Texas Houston, San Antonio, TX.*

Objective: To examine the association between religiosity and breast cancer screening methods among Latin American and Caribbean older women.

Methods: A sample of 6,541 women aged 60 and older from the first interview of Health, Well-Being and Aging in Latin America and the Caribbean Study (SABE), in seven cities (Buenos Aires, Bridgetown, Havana, Mexico, Montevideo, Santiago, and Sao Paulo). Study outcomes were reporting a mammogram, a clinical breast examination (CBE) or breast self-examination (BSE) within the last 2 years. Independent variables were religiosity (religion being very important, religion being somewhat or not important, vs. no religious affiliation/ no response) and sociodemographics, medical conditions, and functional status.

Results: In the combined sample, for 75% of women religion is very important, for 12% religion is somewhat or not important, and 13% reported no religious affiliation. The prevalence of breast cancer screening methods across religiosity categories is shown in Table. In multivariate analyses, women who reported religion being very important were more likely to have a mammogram (OR=1.90, 95% CI 1.53-2.35), a CBE (OR= 1.70, 95% CI 1.44-2.00) and a BSE (OR= 1.44, 95% CI 1.23-1.68) compared with women who reported no religious affiliation. Other independent predictors for having a mammogram, a CBE and a BSE were younger age (60-74 vs. 75+), being married, having higher education, higher number of medical conditions and less functional difficulties. In a subsample without Havana, which has universal insurance coverage, having any insurance (vs. no insurance) was associated with having a mammogram. Some variations across cities were found.

Conclusions: Latin American and Caribbean older women who are more religious tend to have higher breast cancer screening rates. This study suggests that higher self-rated religiosity may facilitate breast cancer screening behaviors among older women, independent of other socioeconomic or health factors.

	Religion is very important	Religion is somewhat/ not important	No religious affiliation	P
mammogram	24.0	21.6	13.6	<.0001
clinical breast exam	45.4	42.5	31.6	<.0001
breast self-exam	57.2	53.4	44.9	<.0001

B121

Predictors of Quality of Life in Dementia Caregivers.

G. Naglie,[1,2] M. Borrie,[3] S. Black,[4] B. Beattie,[5] M. Krahn,[4] J. Irvine,[6] D. Hogan,[7] H. Bergman,[8] C. MacKnight,[9] C. Patterson,[10] A. Byszewski,[11] M. Freedman,[4] D. Streiner,[4] P. Ritvo,[6] J. Comrie,[6] M. Kowgier,[4] G. Tomlinson.[4] *1. Toronto Rehabilitation Institute, Toronto, ON, Canada; 2. University Health Network, Toronto, ON, Canada; 3. University of Western Ontario, London, ON, Canada; 4. University of Toronto, Toronto, ON, Canada; 5. University of British Columbia, Vancouver, BC, Canada; 6. York University, Toronto, ON, Canada; 7. University of Calgary, Calgary, AB, Canada; 8. McGill University, Montreal, QC, Canada; 9. Dalhousie University, Halifax, NS, Canada; 10. McMaster University, Hamilton, ON, Canada; 11. University of Ottawa, Ottawa, ON, Canada.*

Supported By: Canadian Institutes of Health Research and the Alzheimer Society of Canada

Purpose: To assess the predictors of quality of life (QOL) in family caregivers of persons with Alzheimer's disease (AD).

Methods: We recruited community-living patients with AD and family caregivers from dementia clinics across Canada. Family caregivers rated their QOL using the European QOL index (EQ-5D), a visual analogue scale and the Short-Form-36 (SF-36). Caregiver burden and depression were assessed using the Zarit Burden Interview (ZBI) and the Center for Epidemiologic Studies Depression Scale (CES-D), respectively. Patients' cognition was assessed on the Mini-Mental State Examination (MMSE) and the AD Assessment Scale-Cognitive, function on the Disability Assessment for Dementia, behavior and depression on the Neuropsychiatric Inventory and the Geriatric Depression Scale. We carried out univariable analyses and multivariable analyses that adjusted for demographic variables, caregiver medical comorbidity, depression and burden, and patient cognition, function, behavior and depression.

Results: We analyzed 411 patient-caregiver dyads. Caregivers had a mean age of 72.2, 63% were female, 75% were spouses and 20% were children, and 86% lived with the patient. Patients had a mean age of 80.6, 50% were female, and their mean MMSE was 20.8. In univariable analyses: caregiver QOL significantly decreased with higher caregiver CES-D ($p<.0001$) and medical comorbidity ($p<.003$) scores for all 3 QOL measures, and with higher ZBI scores ($p<.002$) for the EQ-5D and SF-36. QOL did not significantly change with severity of the patients' cognitive impairment for any of the 3 QOL measures. In fully adjusted multivariable analyses, caregiver medical comorbidity ($p\leq.002$) and CES-D scores ($p\leq.001$) were the only significant independent predictors of caregiver QOL for all 3 QOL measures.

Conclusions: Caregiver medical comorbidity and depression, but not patient severity factors, were consistent independent predictors of caregiver QOL across all 3 QOL measures.

B122

Age Differences in Advanced Cancer Patient Treatment Preferences, Care Received, Goal Attainment, and Quality of Life at End-of-Life.

J. D. Parr,[1,4] B. Zhang,[1,2] M. Nilsson,[1,2] A. Wright,[1,2] T. Balboni,[1,5] S. Block,[1,3] E. Duthie,[4] H. Prigerson.[1,3] *1. Center for Psycho-Oncology and Palliative Care Research, Dana-Farber Cancer Institute, Boston, MA; 2. Medical Oncology, Dana-Farber Cancer Institute, Boston, MA; 3. Psychiatry, Brigham and Women's Hospital, Harvard Medical School, Boston, MA; 4. Medicine, Division of Geriatrics/Gerontology, Medical College of Wisconsin, Milwaukee, WI; 5. Radiation Oncology Program, Harvard, Boston, MA.*

Supported By: National Institute of Mental Health and Cancer, National Cancer Institute, the Center for Psycho-Oncology and Palliative Care Research, Dana-Farber Cancer Institute, AFAR Medical Student Training in Aging Research (MSTAR) Program

Purpose: Understanding age differences in advanced cancer patients' end-of-life experiences may inform interventions to increase a patient's likelihood of dying a good death. Methods: Coping with Cancer, a federally funded multi-site prospective cohort study, examined advanced cancer patients' end-of-life experiences. Differences in patients' treatment preferences, care, goal attainment, and quality of life were examined. Results: Of the 396 patients studied, 14.1% were 20-44 years old, 54.0% were 45-64 years old, and 31.8% were ≥65 years old. Compared to younger patients, middle aged patients wanted less life prolonging care (OR 0.32; CI 0.16-0.64). In the last week of life, older patients were less likely to undergo ventilation (OR 0.27; CI 0.07-1.00) than younger patients. Older patients also suffered less psychological distress (β -0.8; SE 0.3; $p< .01$) compared to middle aged patients. Middle aged patients who preferred life prolonging care were less likely to receive it than younger patients (OR 0.21; CI 0.08-0.54), but were more likely to avoid unwanted life prolonging care (OR 2.38; CI 1.20-4.75) than younger patients. Older patients were less likely to receive desired life prolonging care than younger patients (OR 0.23; CI 0.08-0.68), however, they were not significantly more likely to avoid unwanted life prolonging care than younger patients (OR 1.74; CI 0.87-3.47). Conclusions: The likelihood

of a patient having their treatment preference honored differed by age and treatment preference type. Advanced cancer patient autonomy may be compromised at end-of-life such that subsets of older patients preferring life prolonging therapies are less likely to receive them than the young; while middle aged patients who want to avoid life prolonging care are more likely to do so than the young. Both findings have implications for the quality of death in these patients, indicating a need for further research.

B123

Association between the presence of mild to moderate cognitive impairment and self-report of non-cancer pain: A cross-sectional analyses of a population based study.

J. Shega,[1] K. Rockwood,[2] W. Dale,[3] J. Paice.[1] *1. Hematology/Oncology, Northwestern University, Chicago, IL; 2. Division of Geriatric Medicine, Dalhousie University, Halifax, NS, Canada; 3. Section of Geriatrics and Palliative Medicine, University of Chicago, Chicago, IL.*

Supported By: National Palliative Care Research Center, National Institute On Aging K23AG029815, Canadian Institutes of Health Research (MOP-62823), and National Health Research Development Program (6606-3954-MC(S)).

Background: Research, guidelines, and experts in the field suggest that persons with cognitive impairment report pain less often and at a lower intensity compared to those without cognitive impairment. However, this presupposition is derived from research with important limitations namely inadequate power and lack of multivariate adjustment. Therefore, we sought to reevaluate the relationship between cognitive status and pain self-report by addressing these shortcomings.

Methods: This is a cross-sectional analysis of the Canadian Study of Health and Aging. Cognitive status was assessed using the Modified Mini Mental State Exam. Pain was assessed using the 5-point verbal descriptor scale (none, very mild, moderate, severe, and very severe pain) where responses were dichotomized into no pain versus any pain and pain at a moderate intensity or higher no versus yes. Additional predictors for analysis included participant demographics, physical function, depression, and co-morbidity.

Results: Of 5,703 eligible community-dwelling older adults, 306 (5.4%) did not meet inclusion criteria leaving a total of 5,397 of whom 876 (16.2%) were cognitively impaired. Significantly more cognitively intact (n=2,541; 56.2%) than cognitively impaired (n=456; 52.1%, P=0.026) participants reported non-cancer pain. There was no significant difference in the proportion of cognitively intact (n=1,623; 35.9%) and impaired (n=329; 37.6%, P=0.357) participants who reported pain at moderate or higher intensity. In multivariate analyses, cognitively impaired participants had neither a lower odds of reporting any non-cancer pain (OR=0.83 [0.68-1.01], P=0.068) nor pain at a moderate or higher intensity (OR= 0.95 [0.78-1.16], P=0.615).

Conclusion: In this population-based study, non-cancer pain was equally prevalent in people with and without cognitive impairment. These data call into question the assumption that people with mild to moderate cognitive impairment report pain either less often or at a lower intensity compared with those not impaired.

B124

Abnormal physical performance and frailty in older men with biochemical recurrence of prostate cancer on androgen deprivation therapy.

K. Bylow,[1] J. Hemmerich,[2] S. Mohile,[3] W. Stadler,[2] W. Dale.[2] *1. Medicine, Medical College of Wisconsin, Milwaukee, WI; 2. Medicine, University of Chicago, Chicago, IL; 3. Medicine, University of Rochester, Rochester, NY.*

Supported By: American Society of Clinical Oncology Young Investigator Award (Bylow)

Background: Choosing when to initiate androgen deprivation therapy (ADT) in older men with prostate cancer (Pca) with biochemical recurrence (BCR) is a major challenge. Earlier ADT initiation has not been shown to improve overall survival, and it contributes to sarcopenia (muscle wasting), weakness, slowed gait, and fatigue – suggesting that ADT contributes to the development of the recognized geriatric syndrome of frailty.

Methods: A case-control study of 119 men age 65+ with BCR on ADT ≥ 6 months with stable PSA (n=56) compared to controls with history of Pca status post radiation or surgery with no evidence of recurrence (n=63) was performed. Frailty prevalence per Fried's criteria, Short Physical Performance Battery (SPPB) scores and falls were compared between groups. In addition, an exploratory analysis of proposed biomarkers of frailty (CRP, ESR, hemoglobin, albumin, and total cholesterol) was performed.

Results: Age, ethnicity and socioeconomic status were not different between groups. As expected, mean testosterone and PSA values differed significantly (testosterone 18.4 vs. 385.1 ng/dl, p<.01; PSA 6.77 vs. 0.75 ng/ml, p = .03). 7.2% of men in ADT group met Fried's criteria for frailty compared to 3.2% in control group and 58.9% met criteria for "prefrail" in ADT group compared to 41.9% controls (p=0.03 for trend). Additionally, the total score on the SPPB is significantly lower in the ADT group (9.1 vs. 10.2, p = .01), indicating higher risk of incident morbidity and mortality. Incident falls were higher in ADT group (14.3% vs. 3.2%) although this did not reach statistical significance (p=.05). With the exception of hemoglobin (ADT 12.7 vs control 14.4 g/dl, p< .01), biomarkers were not significantly different between groups.

Conclusions: Men with BCR of Pca on ADT are more frail and have significantly worse physical performance than controls on formal measures. Prospective trial is needed to establish a temporal link between initiation of ADT and progression of frailty.

B125

Symptoms and Quality of Life in Older Breast Cancer Survivors.

R. A. Roiland, O. A. Perez, J. J. Egan, K. PeRomashko, S. M. Heidrich. *Nursing, University of Wisconsin- Madison, Madison, WI.*

Supported By: Supported in part by RO1AG022914 from the National Institute on Aging and the National Cancer institute.

Symptoms in cancer patients undergoing treatment have been found to be related to quality of life but this relationship has rarely been examined in cancer survivors or in relation to older age. As cancer survival rates continue to increase, more and more individuals with a history of cancer are living to older age. Older cancer survivors continue to experience symptoms years after completing treatments, and these symptoms may result from late effects of cancer and its treatment, comorbidities or normal aging. The purposes of this study were to describe symptom clusters in older breast cancer survivors and explore relationships among symptom clusters, demographic, health and cancer-related variables. Participants were 127 older breast cancer survivors (M age = 70) participating in a randomized clinical trial of a symptom management intervention. Baseline measures of demographics, symptom number and distress, health status, and quality of life (SF-36, depression, purpose in life, positive relationships) were used. Women reported an average of 18 symptoms. Factor analysis of symptom distress scores resulted in five factors: musculoskeletal aches and pains (6 symptoms), menopausal-type (10 symptoms), neuro-cognitive (5 symptoms), skin and hair (4 symptoms), and sleep disturbance (3 symptoms). Musculoskeletal symptoms were the most frequently reported. Musculoskeletal and sleep disturbance symptoms were the most distressing. Cancer treatments (surgery, chemotherapy, hormonal therapies) were not significantly related to any symptom factor. Number of health problems was significantly correlated with all 5 factors (r = .14 - .36). Quality of life was significantly related to all 5 factors

(r = .18 -.73). These findings indicate that older breast cancer survivors experience numerous symptoms that have not been assessed in previous quality of life research. Examining symptom clus-

ters, such as the five identified in this study, may help researchers and clinicians design interventions targeting clusters rather than single symptoms. A thorough assessment of symptoms in older cancer survivors may lead to greater positive effects on patient outcomes such as quality of life.

B126

Creating and Maintaining Relationships After Institutionalization for Dementia.

R. Balbino,[1] T. Allison.[2,3] *1. University of Illinois at Chicago, Chicago, IL; 2. University of California, San Francisco, CA; 3. Jewish Home, San Francisco, CA.*

Supported By: None to disclosure

Purpose: Aphasia and inability to provide self-care associated with late-stage dementia have long been recognized as burdens on caregivers. More recent research, however, suggests that caregivers seek out meaning in their relationships with those who have severe dementia. This qualitative study was designed to examine the ways in which such relationships are created and maintained after institutionalization.

Methods: 24 caregivers and 12 care-recipients were recruited for participation in an ethnographic study. Data collection included semi-structured interviews of caregivers and observations of the behavioral interactions between caregivers and care-recipients. Interviews were recorded either via audiotape or longhand fieldnotes, and observations recorded with longhand fieldnotes. Data was first analyzed for emerging themes. It was then independently coded by two researchers and compared in order to validate the findings. Themes were then brought back into the field site through the intentional recruitment of new participants and the discussion of thematic content with cognitively intact participants. The process was continued until a point of thematic saturation was reached.

Results: Four themes emerged which shed light on the ways in which caregivers create and maintain relationships with persons who have late stage dementia: (1) the concept of family as a guiding principle for professional caregivers as well as relatives; (2) the importance of talking to the often-mute resident; (3) the attempt to explore long-term memories with both verbal and mute residents; and (4) the exploration of sensory modalities as a way to create moments of meaning between caregivers and those who can no longer speak.

Conclusions: Through interviews and observation of caregivers and persons who have been institutionalized for dementia, it becomes clear that caregivers seek to create and maintain relationships through a number of beliefs which can be carried out in behavioral practice. By explicitly recognizing the importance of meaningful relationships to caregivers, we can begin to develop more humane models of dementia care, and to support the people who care for institutionalized residents who are verbally and physically incapacitated by dementia.

B127

A Closer Look at Agitation in a Nursing Home.

R. Lee,[2] D. L. Woods.[1] *1. School of Nursing, University of California, Los Angeles, Los Angeles, CA; 2. College of Osteopathic Medicine, Ohio University, Athens, OH.*

Supported By: Medical Student Training in Aging Research (MSTAR) program funded by the American Federation for Aging Research

Background: With an estimated 10 million baby boomers predicted to develop Alzheimer's Disease, the prevalence of agitated behavior will clearly rise and more attention must be focused on this phenomenon. Agitated behavior is a major concern for family and nursing home (NH) staff resulting in fear and avoidance in caregivers and others in close proximity, embarrassment for affected older adults. The most frequently exhibited behavior is restlessness and pacing. To date, most studies examining agitation in this population have used caregiver report, which is subject to recall error and staff bias. The purpose of this study was to describe agitation in NH residents with dementia using direct observation and longitudinal data.

Methods: Thirty-six elders with dementia were recruited from a NH in Los Angeles. The average age for the participants was 88.47 ± 6.76 years; 86.1% were female. The modified Agitated Behavior Rating Scale was used to record the frequency and intensity of agitation, including restlessness, escape restraints, searching/wandering, tapping/banging, vocalization, and pacing/walking. The modification consists of the additions of the behavior "pacing/walking" and intensity scores. Participants were observed and behavior was recorded every 20 minutes for 12 hours each day for 5 days.

Results: Restlessness (54%) and vocalization (26%) were the most frequently observed behaviors, with the highest mean behavior scores of M = 0.18 ± 0.15 and M = 0.10 ± 0.15, respectively. Taking a closer look at the mean scores (original scores calculated by frequency x intensity) over each time point demonstrated that the mean can be misleading related to the individual patterns of behavior. For example, two participants had the same mean behavior score for restlessness (0.19 ± 0.39 and 0.19 ± 0.46) yet their pattern of behavior was distinctly different over the 5-day period. Spearman's rho 0.257 ($p = 0.13$) indicated a non-significant relationship between the proxy reporting and direct observation of behavior.

Conclusions: Direct observation results in a more accurate determination of behavior and is recommended for future studies. Calculating the mean behavior score does not provide information about the difference in individual patterns, a significant issue when trying to understand these patterns and provide appropriate, personal interventions.

B128

Energy Cost of Walking Contributes to Physical Function in Older Adults.

D. M. Wert, J. Brach, J. VanSwearingen. *Physical Therapy, University of Pittsburgh, Pittsburgh, PA.*

Supported By: Pittsburgh Claude D. Pepper Older Americans Independence Center Grant #: P30 AG024827

Purpose: Older adults compared to young tend to display higher energy cost for a given speed of walking. Greater cost of walking performance may impact aerobic reserves, reducing the ability of older adults to perform day to day functions and remain physically active. The aim of this study was to assess the relation and contribution of energy cost of walking and self-report of function in older adults with mobility disability.

Methods: Forty-nine older adults (mean age 76.5, 68% female) with slow and variable gait participated. The energy cost of walking was derived from the mean oxygen consumption determined by analysis of expired gases (Medgraphics® VO2000) collected during 2-3 minutes of self-paced usual walking on a treadmill at physiological steady state, divided by the speed. The Late-Life Function and Disability Instrument (LLFDI) function component was used to assess self-reported function. Pearson correlation coefficients were calculated to assess the relation between energy cost of walking and function, and a test for linear trend was performed to describe mean function scores across tertiles of energy cost. Multiple linear regression models were fitted for the contribution of energy cost to LLFDI function, controlling for age and gender (model 1) and controlling for age, gender and gait speed (model 2).

Results: Energy cost of walking was negatively related to function, $r = -0.38$, $p < .01$, and mean LLDFI function decreased from the lowest to the highest tertiles of energy cost (test for linear trend, $F = 9.54$, $p < 0.01$). Energy cost contributed to LLFDI function scores when controlling for age and gender ($\beta = -0.354$, partial correlation = 0.12; $p = 0.012$; model adjusted $R2 = 0.176$). The association between

energy cost and function was attenuated by gait speed but energy cost remained an independent contributor to the variance in function (β=-0.258, partial correlation = 0.06; p=0.055; model adjusted R2 = 0.286).

Conclusion: Higher energy cost of walking is related to lower self-report of function in the older adults with mobility disability studied. Future investigations are needed to determine if interventions that reduce the cost of walking, yield improved report of function in older adults.

B129

The Compendium of Physical Activities Underestimates Walking Intensity in Old More so than in Young.

J. S. Brach,[1] D. Wert,[1] J. M. VanSwearingen,[1] S. A. Studenski.[2] *1. Physical Therapy, University of Pittsburgh, Pittsburgh, PA; 2. Medicine, University of Pittsburgh, Pittsburgh, PA.*

Supported By: Funding Source: NIH/AFAR(K23 AG026766-01); Pepper Center (P30 AG024827-01).

Purpose: The Compendium of Physical Activities, based primarily on research in young healthy adults, links specific activities performed with their respective MET levels. The Compendium underestimates intensity in young adults. We propose that age-related changes in walking make walking even more costly for older adults; thus the Compendium would underestimate the intensity of walking more for older than young adults. We examined the association between estimated and actual MET levels for usual walking pace in older and young adults.

Methods: Twenty seven older adults (≥65 years) and 26 young adults (mean age = 24.4 years) participated. Oxygen consumption was determined by open circuit spirometry and analysis of expired gases (Medgraphics VO2000) collected during self-paced usual walking on a treadmill. Subjects gradually increased speed to their usual walking speed which was then held constant for 5 to 9 minutes. Mean oxygen consumption was determined from 2-3 minutes of walking at physiological steady state. Usual walking Measured MET level = mean oxygen consumption divided by 3.5 ml of oxygen/kg/min. A paired t-test was used to compare usual walking measured MET level to Compendium estimated MET level.

Results: Measured MET level was greater than estimated MET level for older (mean difference 1.54 METs, 95% CI 1.07, 2.02; p<0.0001) and young (mean difference = 1.17 METs, 95% CI 0.72, 1.63; p<0.0001) adults. On average, the Compendium underestimated measured MET level by 35% in older and 25% in young adults. Greater discrepancies of estimated and measured MET levels were found for older adults at faster walking speeds (>2.0 mph) and for younger at slower walking speeds (< 2.0 mph).

Conclusion: The Compendium underestimates the intensity of usual-paced walking more in older than young adults. Gender, resting metabolic rate and body composition may partially explain the underestimation. The greater underestimation in older adults might be explained by age-related gait changes that may reduce movement efficiency, increase energy expenditure and subsequently increase the effort of walking. Future studies should examine the impact of gait alterations on the estimation of the metabolic costs of walking in older adults.

B130

Earlier morning rise time predicts better functional outcomes of post-acute rehabilitation for orthopedic patients.

D. Patel,[1] J. Martin,[2,3] K. Josephson,[3] C. Alessi.[2,3] *1. Western University, Pomona, CA; 2. University of California, Los Angeles, Los Angeles, CA; 3. VA Greater Los Angeles, North Hills, CA.*

Supported By: Supported by: NIH Medical Student Training in Aging Research, NIA K23AG028452,VA HSRD IIR04-321-2, VA Greater Los Angeles Healthcare System, Geriatric Research, Education and Clinical Center.

Purpose: To examine sleep-related predictors of functional recovery following elective orthopedic procedures (eg, hip replacement) or traumatic orthopedic events (fractures) among older adults.

Methods: Within a larger study, 98 subjects (mean age=80yrs; 54% male) were enrolled on admission to post-acute rehabiliation (PAR; 1 VA, 1 community site) following elective orthopedic procedures (n=47) or traumatic orthopedic events (n=51). Functional improvement was abstracted from medical records using admission and discharge Function Independence Measure–motor component (mFIM) scores. Sleep patterns were objectively assessed with 1 week of wrist actigraphy. Other measures included demographics, the Minimental State Examination (MMSE), and medications received for pain and sleep. Significant bivariate predictors of functional outcome (ie, discharge minus admission mFIM) were entered into a regression model to identify independent predictors of functional recovery.

Results: Mean MMSE=24, mean BMI=26 k/m2; mean PAR length of stay=20 days. On average, patients received 2.4 medications for pain and 0.6 for sleep. On average, subjects went to bed at 9:43pm (SD 1:05h), arose at 6:54am (SD 0:52h), slept 5.0 (SD 1.9) hours at night [55% (SD 21%) of time in bed at night], and 1.7 (SD 1.3) hours during the day. In bivariate analyses, higher MMSE score, male gender, elective (vs. non-elective) procedures, higher BMI, more pain medications received and earlier morning rise times were associated with better functional outcomes of PAR (mFIM change; all p<.05). In a regression model (R2=.31, p<.001), only earlier morning rise time remained a significant independent predictor of mFIM change (t=-2.54, p<.01).

Conclusions: Multiple factors are related to functional outcomes of PAR following orthopedic procedures; however, in a multi-variable model, only earlier morning rise time predicted better functional recovery. Since morning rise time is a strong indicator of underlying circadian rhythms, it is possible that circadian tendencies impact the functional recovery among orthopedic patients. Alternatively, early rise times may be a result of greater functional improvement. Implementing consistent morning rise times may be a useful non-pharmacologic intervention among orthopedic patients in PAR settings.

B131

Expectations of Aging and Mobility in Community-dwelling Older Adults.

R. Hess,[1] J. M. VanSwearingen,[1] D. Wert,[1] E. Hile,[1,2] S. Studenski,[2] J. S. Brach.[1] *1. Physical Therapy, University of Pittsburgh, Pittsburgh, PA; 2. Medicine, University of Pittsburgh, Pittsburgh, PA.*

Supported By: NIH, T32 AG021885, P30 AG024827, K23 AG026766

Purpose: Fifty percent of older adults consider decline in physical health and cognitive function to be an expected part of aging. A negative outlook on aging is associated with higher mortality rates, less physical activity, and quicker acceptance of health condition-related symptoms. We examined the association between aging expectations and self-report and performance-based measures of mobility, and if expectations regarding aging added to the description of self-report of mobility beyond mobility performance.

Methods: Participants included 120 community-dwelling older adults (≥65 years of age) independent in ambulation. Expectations were measured using the Expectations Regarding Aging Survey (ERA-12). Self-report measures of mobility included the Survey of Activities and Fear of Falling (SAFFE), the Falls Efficacy Scale (FES), the Late-Life Function and Disability Index (LLFDI), and a global mobility question (GmQ). Gait speed was the performance-based mobility measure. Spearman correlations were used to determine the relation of the ERA-12 to measures of mobility. To determine if expectations regarding aging added to the self-report of mobility, beyond the performance-based measure, a hierarchical linear regression was used: Model 1, self-report of mobility = gender, age, and gait speed; Model 2, self-repot of mobility = gender, age, gait speed and ERA-12.

Results: The ERA-12 was related to self-report of mobility; SAFFE (r=-.236, p = .010), FES (r=-.264, p= .004), LLFDI (r=.289, p= .022), and GmQ (r=-.262, p= .004), but not to performance-based mo-

bility, gait speed. Expectations regarding aging added to the self-report of mobility provided by gait speed alone, R2 change = 0.05 (p = 0.004), model 2 adjusted R2 =0.31 (p <0.001).

Conclusion: Expectations of aging may be an important factor in self-reported mobility assessment. Among community-dwelling older adults, outlook on aging adds unique information to the self-report of walking ability, independent of walking performance. Further research is needed to explore the role aging expectations plays in older adults' assessment of their mobility.

B132

Delirium and Functional Decline after Cardiac Surgery.

J. L. Rudolph,[1] E. R. Marcantonio,[2,3] R. N. Jones,[3,4] P. Shi,[3] S. K. Inouye.[3,4] *1. GRECC, Boston VA Medical Center, Boston, MA; 2. Div of General Medicine and Primary Care and Gerontology, BIDMC, Boston, MA; 3. Aging Brain Center, Hebrew SeniorLife, Boston, MA; 4. Inst for Aging Research, Hebrew SeniorLife, Boston, MA.*

Supported By: This work was funded by the Harvard Older Americans Independence Center AG08812-14, and NIH grants (AG029861, AG00949, AG027549, AG0265566, AG030618, AG028189). Dr Rudolph is supported by a VA Rehabilitation Career Development Award. Dr. Inouye is supported by the Milton and Shirley Levy Family Chair

Background: Postoperative delirium, an acute change in attention and cognition, is common, morbid, and costly. The purpose of this analysis was to determine if patients who developed delirium after cardiac surgery were at increased risk of functional decline.

Methods: Prospectively, 203 patients over age 60 were recruited prior to cardiac surgery. Beginning on postoperative day 2, patients were evaluated daily for delirium using a comprehensive battery including the Mini Mental State Examination (MMSE), digit span, and the Delirium Symptom Interview. Delirium was diagnosed according to the Confusion Assessment Method diagnostic algorithm. Prior to surgery and postoperatively at 1 month and 12 months, patients completed the Instrumental Activities of Daily Living (IADL) scale (range 0-14, 0-worst). Functional decline was defined as a decrease of 2 IADL points (1 full IADL impairment) at the follow-up timepoints relative to baseline.

Results: Delirium occurred in 46% (n=94) of the patients (mean age 74 ±7 years, 80% men). Thirty-five patients (17%) did not complete follow-up and of these 60% (n=21) developed delirium. At one month, 37% (n=58) had functional decline and at 12 months, 15% (n=25) had functional decline. Delirium was associated with increased risk of functional decline at 1 month (RR 1.8, 95% Confidence Interval (CI) 1.2, 2.8) and tended toward increased risk at 12 months (RR 1.9, 95% CI 0.9, 4.1). After adjustment for age, baseline MMSE, and comorbidity, delirium remained significantly associated with functional decline at 1-month (adjusted RR 1.62, 95%CI 1.1, 2.5), but not at 12 months (adjusted RR 1.5, 95%CI 0.6, 3.4).

Conclusions: In this prospective analysis delirium was independently associated with functional decline at 1 month and had a non-significant trend toward association at 12 months. Patients with delirium were also more likely to drop out, which might partially explain the loss of significance at 12 months. If confirmed, our findings suggest that interventions to prevent or treat delirium could improve functional recovery after cardiac surgery.

B133

Second episode of hip fracture: differences on characteristics of this fragile population and functional outcome and mortality after one year.

M. Álvarez-Nebreda, E. Marañón, A. Martínez, Y. Gracia, M. Toledano, J. Serra. *Geriatrics, Gregorio Marañón Hospital, Madrid, Spain.*

Objective: to study characteristics, in-hospital outcome, functional recovery and mortality after one year, of elderly patients with hip fracture and an antecedent of another hip fracture.

Methods: prospective longitudinal study including 1738 consecutive patients older than 64 years with a hip fracture, from October 2004 to April 2008. We studied all patients admitted with a second episode of hip fracture (Study Group, SG) (N=204, 11.7%) and compare with patients without this antecedent (Control Group, CG). Descriptive variables analyzed were: social-demographic characteristics, functional status (Katz), ambulation (FAC), complications, length of stay and mortality. We analyzed mortality and functional recovery (to recover previous FAC and Katz) after in-hospital rehab and 3, 6 and 12 months after discharge. We collected this information by telephone interview.

Results: mean age: 83.5±7.2 years. 82% female. 20% living in nursing facilities. 33% independent on all B-ADL. 81% walking independently. 31% demented. Patients admitted with a second episode of hip fracture (SG) were: older (85.8 vs 83.2, p<0.001), had worse functional scores (FAC: 3.8 vs 4.2, Katz: 3.3 vs 4, p<0.001), and more comorbid conditions (4.1 vs 3.5, p<0.001), the most important was dementia (38 vs 30%, p=0.013). They were placed more frequently in nursing facilities (30 vs 19%, p<0.001). 30% of SG had at least another fall on previous 2 months (vs 12% of CG, p<0.001). Only 17.6% of SG were on osteoporosis treatments (vs 6.2% of CG, p<0.001). There were no differences on medical or surgical complications between groups and also on percent of patients selected for in-hospital rehabilitation (60 vs 66%). There were no statistically differences neither in-hospital mortality nor at 3, 6 or 12 months (mortality after 12 months: 7.8 of SG vs 6.7% of CG) and also on functional recovery at these periods of time.

Conclusions: elderly patients with a second episode of hip fracture are an older and functionally dependent population, with more comorbid conditions and more frequency of nursing home placement. However, they don't differ on in-hospital and one-year mortality or functional recovery. Only 17% of them are on osteoporosis treatments although they had an antecedent of hip fracture.

B134

Surgery Residents Desire more Training in Geriatric Care.

R. P. Petersen,[1] M. T. Heflin,[2] L. Groban,[3] S. A. Lagoo-Deenadayalan.[1] *1. Surgery, Duke University Medical Center, Durham, NC; 2. Medicine, Duke University Medical Center, Durham, NC; 3. Anesthesiology, Wake Forest University, Durham, NC.*

Supported By: GSR grant, AGS

Introduction: A needs assessment survey was conducted among surgery residents to help outline a curriculum for geriatrics education aimed to improve care.

Methods: 46 surgery residents were surveyed ranging between PGY-1 & PGY-8. Residents were asked a battery of questions regarding their knowledge and skills in caring for geriatric patients(>65yrs). Confidence in performing and desire to learn more about specific tasks in geriatric patients were ranked on a scale of 1-5 (1=low;5=high). Data are presented as median values with range.

Results: Median PGY level was 3, and 89% desired an academic career. 59% of respondents devoted > 50% of time taking care of geriatric patients. Majority of residents felt addressing advanced directives intra-operatively (56.5%), length of stay, consumption of resources (54.3%), and access to information regarding community sources (52.2%) were challenging aspects of geriatric care. Topics considered critical were pre-operative cardiac evaluation (81.4%), benefits and pitfalls of anticoagulation (74.4%) and management of post-operative depression and delirium (72.1%). In addition, 35 residents responded to questions about specific knowledge and skills in caring for the elderly. Results are listed in the table below. Residents desired to learn more about managing polypharmacy, alternatives to standard care, palliation,

end-of-life care, and timing for referral for end-of-life issues. The resident's lack of confidence in a specific subject correlated with their desire to learn more about it, attesting to the internal validity of the survey.

Conclusion: Among geriatric patients, residents felt comfortable performing standard tasks such as history and physicals. They were able to identify subjects in which they perceived a need for additional instruction. Such information will be vital in providing an advanced curriculum in geriatric surgery.

Question	Confidence in performing task Median[min,max]	Desire to learn more Median [min,max]
History and Physical	4 [2,5]	3 [1,5]
Evaluate post-op delirium	3 [1,5]	4 [1,5]
Assess nutritional status	4 [2,5]	4 [1,5]
Pain and symptom control	3 [2,5]	4 [1,5]
Managing polypharmacy	3 [2,5]	4 [1,5]
Standard care alternatives	3 [1,5]	4 [2,5]
Palliation and end of life care	3 [1,4]	4 [1,5]
Timing for referral for end of life issues	3 [1,5]	4 [1,5]

B135

Emergent Presentation of Colorectal Cancer in the Elderly: Does Hospital Type Influence Outcome?

S. R. Matula, H. Kunitake, C. Y. Ko. *Surgery, UCLA, Los Angeles, CA.*

Purpose: To determine if hospital type influences mortality in pts ≥ 80 presenting emergently with complications from colon cancer.

Methods:

Patients undergoing colorectal cancer (CRC) resection for were retrospectively identified using the California Office of Statewide Health Planning & Development Patient Discharge Database (1994-2005) linked with the California Cancer Registry and 2000 US Census. Pts were stratified by age; 80+yr old pts were grouped by routine vs. emergent admission. 'Emergent' status was determined by nonscheduled admission and diagnosis of perforation, obstruction or hemorrhage. Univariate and logistic multivariate analysis were used to determine significant outcome predictors.

Results: Of 113,191 pts undergoing CRC resection, 24%(n=26,658) were ≥ 80. 16.6%pts ≥ 80 presented emergently compared with 9.5% of pts <65. 44% of the ≥ 80pts were admitted to low volume hospitals; 9% to high volume hospitals. Mortality rates for emergent admission were significantly higher than scheduled admission: 13.1% vs 4.5% in-hospital, 16% vs 7% at 30d, 45% vs 26% at 1yr (p=0.000). In comparison, emergent pts <65 had a 22% 1yr mortality. Multivariate logistic regression demonstrated an increase in inhospital death among emergent pts (OR 2.5, p=0.000) controlling for race, hospital volume, cancer stage and revised-Charlson score. Emergent pts had significantly higher revised-Charlson score (1.1 vs 0.8, p=0.000) and rates of distant disease (18% vs 12%, p=0.000). For emergent pts hospital volume did not significantly influence in-hospital or 1yr mortality; however, it was a significant predictor of mortality for non-emergent cases (p=0.000).

Conclusion:

Emergent CRC disproportionately afflicts the elderly with 70% higher incidence and 2.5 fold higher mortality than younger pts. While hospital volume is associated with lower mortality for elective CRC cases, a similar relationship is not seen in emergent cases. Although care in high volume hospitals does not improve outcomes for emergent CRC, continued colorectal screening may lower emergent presentation in the elderly.

B136

Outcomes of Patients with Congestive Heart Failure and Proximal Femur Fracture Treated in a Geriatric Fracture Center.

M. D. Hasenauer,[1] K. W. Bingham,[1] D. A. Mendelson,[1] S. L. Kates,[2] S. M. Friedman.[1] *1. Dept. of Medicine; Division of Geriatrics, University of Rochester, Rochester, NY; 2. Dept. of Orthopaedic Surgery, University of Rochester, Rochester, NY.*

Supported By: Hartford / AGS Geriatrics for Specialty Residents award

AO Foundation

Synthes unrestricted grant

Highland Hospital, Rochester, NY

Purpose: Congestive heart failure (CHF) and hip fractures in older adults are both serious and common events, associated with high mortality and morbidity. Each has been studied individually, but little has been published regarding patients with both conditions, and their post-operative outcomes. This study compares characteristics and outcomes of patients with and without CHF who present with a proximal femur fracture to a geriatric fracture center.

Methods: We reviewed all patients who underwent surgical repair of a proximal, native, low-impact, non-pathological, non-periprosthetic femur fracture from 7/1/07 to 6/30/08. All patients over 60 with DRG's 469, 470, 480, 481, who met these criteria underwent review for baseline predictors and outcomes. Information was gathered from a quality improvement database. Data analysis was performed using Statview software. We compared characteristics and outcomes of patients with and without a history of CHF, using Chi square and t-tests where appropriate. Logistic regression modeling evaluated independent contribution of CHF history to the outcome of developing a post-operative complication.

Results: Overall, 94.8% of the patients were white, 76.2% were female, and their average age was 84.3. 61 of the 252 patients (24.2%) had a history of CHF. There were no differences between hip fracture patients with and without CHF with respect to age, race, gender, or baseline functional status. Patients with a history of CHF had a worse Parker mobility score at baseline (4.9 vs. 3.6, p=0.002), and higher Charlson comorbidity score (4.6 vs. 2.9, p<0.0001). Patients with CHF were significantly more likely to suffer a complication following surgery than patients without this history (67.2% vs. 35.6%, p<0.0001), and experienced more complications overall (mean of 1.3 vs. 0.5, p<0.0001). After adjusting for age, baseline comorbidity, and mobility, patients with CHF were significantly more likely to experience a post-operative complication (OR 2.8, 95% C.I, 1.5, 5.5).

Conclusion: Individuals with a history of CHF are a high risk population among patients undergoing hip fracture repair. More investigation is needed to determine whether targeted pre- and post-operative interventions can change risk for patients with a CHF history.

B137

Geriatricians, Surgeons, and Anesthesiologists Differ in Treatment Timing Decisions for Abdominal Aortic Aneurysm Repair.

W. Dale,[1] J. Hemmerich,[1] A. Tung,[1] E. Moliski,[1] M. Schwarze.[2] *1. Medicine, Geriatrics & Palliative Medicine, University of Chicago, Chicago, IL; 2. Surgery, University of Wisconsin, Madison, IL.*

Supported By: NIA - Paul Beeson Career Development Award (K23)

Purpose: Even when established, evidence-based guidelines exist, physicians often fail to follow them. Caring for patients with asymptomatic abdominal aortic aneurysms (AAA) requires a series of choices between continuing watchful waiting(WW)or surgical repair. Published guidelines support delaying repair until AAA rupture risk exceeds the 5% surgical mortality risk when an AAA reaches 5.5cm in diameter. We have shown that vascular surgeons' timing decisions are strongly influenced by a preceding (bad) outcome. We tested the influence of preceding outcomes on physician decisions in

three specialties: geriatrics, surgery, and anesthesiology. Methods: A randomized field experiment was conducted at society meetings for geriatricians (n=67, surgeons (n=63), and anesthesiologists (n=92). Participants completed an incentive-compatible, computer-based simulation of an older patient with a AAA presenting serial CT-scan images of an expanding AAA. At each update, participants chose between continuing WW (and accepting the rupture risk), or doing surgery (and accepting the 5% operative risk). After completing a "practice" round randomly presenting either a AAA rupture, a surgical fatality, or a successful surgery, the participants completed the simulation. The dependent variable was the number of times participants continued WW. Time-to-event analyses were conducted. Results: All groups chose repair significantly earlier than the recommended 10 visits (surgeons - 7.0; anesthesiologists - 7.3; geriatricians - 7.7). Geriatricians in the successful surgery group waited longest, 8.0 +/- 0.7 visits. Surgeons in the WW group waited only 5.5 +/- 0.6 visits. After controlling for demographics, risk attitudes and anxiety, both geriatricians (OR = 1.59) and surgeons (OR = 1.99) exposed to the WW condition operated significantly sooner. Anesthesiologists were not influenced by prior experience.

Conclusions: We found specialty-dependenteffects on physician treatment choices. All specialties operated earlier than guidelines recommended. Prior experience most impacted surgeons, then geriatricians, and least anesthesiologists. Prior experience can effect treatment choices, even with clear guidelines.

Poster Session C

Friday, May 1
12:00 pm – 1:30 pm

C1

RARE CAUSE OF INFECTIVE ENDOCARDITIS PRESENTING AS DELIRIUM IN NH RESIDENT.

A. Bhargava, I. Dosani, A. Verma, S. Wartak, S. Haessler, M. Brennan, S. Bellantonio. *General Medicine and Geriatrics, Baystate Medical Center/Tufts Univ School of Medicine, Springfield, MA.*

Introduction: Alpha hemolytic strep, Strep bovis & enterococci are common causes of infective endocarditis(IE), beta hemolytic strep are not. Group G beta hemolytic strep (GGS) have been reported to cause serious infections & rarely IE with 72 cases reported. Delirium, an acute confusional state, is prevalent in 14-56% of hospitalized elders; is often multifactorial & precipitated by electrolyte imbalances & infections. We report the case of a 90 yo man with delirium due to GGS IE.

Case: 90 yo NH resident was hospitalized with altered mental status. PMH: CHF & HTN Exam: disoriented, tachycardic, tachypneic, 2/6 systolic murmur over precordium & subconjunctival hemorrhages; labs: neutrophilic leucocytosis & pre-renal azotemia. IE was suspected, BC's were obtained & empirical Abx's started. TTE showed structurally abnormal posterior MV leaflet with very irregular contour & dense calcification, suggestive of vegetations. CT brain: chronic small vessel ischemia. BC's grew GGS in 2 bottles & GGS IE was dx'ed; IV PCN G & Gent were started; pt continued to deteriorate, likely due to progressing septicemia & probable septic emboli. His family chose CMO & he died in the 2nd wk of hospitalization.

Discussion: GGS endocarditis is uncommon & most often a result of bacteremia due to cellulitis. In a 12 yr study, the incidence of GGS bacteremia was 0.0–0.2 cases/1,000 admissions. Over 90% of pts with GGS bacteremia have DM, malignancy, IVDA, alcoholism or skin breakdown. Our pt had none of these, but was a frail NH resident. Delirium, rather than typical signs of IE, was the presenting sx of GGS endocarditis. Delirium, associated with a mortality rate of up to 26%, may be misdiagnosed as dementia or depression & may lead to a delay in dx & tx of medical conditions. GGS endocarditis also has a high mortality rate of 35%. Despite early recognition of delirium & GGS endocarditis, & appropriate tx, our pt died, likely due to his advanced age & underlying frailty.

Conclusion: GGS endocarditis is a rare & elusive illness requiring a high index of suspicion. Although most common in pts with underlying medical conditions, frail older adults may also be predisposed to GGS bacteremia & IE. It may not present with typical signs such as fever, chills & joint/muscle aches. Thus, in the appropriate clinical setting, IE must be in the DD of altered mental status.

C2

Nonverbal Communication in a Patient with Severe Aphasia.

C. Kistler. *Geriatrics, UCSF, San Francisco, CA.*

Introduction: Aphasic patients have difficulty interacting with the medical system, but even severely aphasic patients may be able to communicate in nonverbal ways.

Case Report: Mr. JM, a 78 yo veteran with severe post-CVA aphasia, presented to geriatrics clinic to establish care. His aphasia led to confusion at his initial visit when he responded to the name of a different patient. He continued to show marked deficits in comprehension and expression, with phonemic substitution, word finding difficulties, and dysarthria, i.e. "company" for "hospital" and "shroke" for "stroke". However, he demonstrated pictographic skill when he developed an acute dermatitis. He left the following message with the clinic. Mr. JM continued to use pictography in further attempts at communication.

Discussion: Augmentations in communication with severely aphasic patients have been studied for decades. This approach initially used simple symbolic retraining. Recently, computers with personalized symbols and photographs have shown promise in further improving communication. These gains have been seen even in patients several years post-CVA. Unfortunately patients with severe aphasia acquire symbols slower than those less debilitated and have difficulty generalizing their improvements outside treatment settings. While not suitable for all patients with severe aphasia, augmentation may benefit those patients with some intact orthographic ability, such as Mr. JM. Providers should consider exploring alternative modes of communication with these patients.

C3

Recognition of Pituitary Disease in Long Term Care Residents.

N. Pandya, D. L. Sanders-Cepeda. *Geriatrics, Nova Southeastern University - College of Osteopathic Medicine, Ft. Lauderdale, FL.*

Background

Hypopituitarism, a condition with deficiency of one or more anterior pituitary hormones, is recognized in elderly patients. However, the prevalence and impact in Long Term Care residents has not been studied intensively.

Methods

In this study we report six cases of LTC residents found to have hypopituitarism (one with known resection of a Macroprolactinoma), and examined the presenting symptoms, diagnostic laboratory abnormalities, potential causes, and treatments.

Results:

Upon review of the cases 6 out of 8 had pituitary hypofunction presumably secondary to vascular insufficiency. In addition, 2 out of 8 cases were identified to have chronic opiod use, potential cause of pituitary dysfunction. Also, 2 out of 8 cases were also identified to have trauma as a potential cause. All patients were started on replacement therapy for partial or complete pituitary dysfunction.

Discussion

Hypopituitarism is a condition that is difficult to diagnose in patient in LTC facilities as the presentation and symptoms are often missed or attributed to other chronic conditions or age. This condition could present as life – threatening emergencies if hyponateremia or hypoglycemia occur. LTC practitioners need to have a high index of suspicion and appropriately interpret abnormal thyroid function test suggestive of secondary hypothyroidism. This could lead to early and accurate diagnosis. Although, replacement with growth hormone is controversial, replacement with thyroxine, glucocorticoids, and testosterone is feasible, and could potentially improve the quality of life of LTC residents.

Pituitary Disease in Long Term Care Residents

Cases	Presenting Symptoms/Findings	Endocrine Abnormality	Presumed Cause	Treatment
1. 56y/o male	Fatigue, Constipation	-secondaryHypothyroidism -secondaryHypogonadism	Vascular	Thyroxine replacement
2. 86 y/o male	Absent facial hair	-secondaryHypothryoidism -Relative Adrenal Insufficiency*	Vascular	Thyroxine & glucocorticoid replacement
3. 78 y/o female	Pallor, Weakness, Hypoglycemia, Empty Sella	-secondaryHypothyroidism -secondaryAdrenal insufficiency -Growth hormone deficiency -secondaryhypogonadism	Empty SellaSyndrome	Thyroxine& Glucocorticoid Replacement
4. 70 y/o male	Depression, Weakness, Fatigue, Somnolence	-secondaryHypothyroidism -secondaryAdrenal insufficiency -Growth hormone deficiency -secondaryhypogonadism	Pituitary Adenoma	Thyroxine, Glucocorticoid, & Testosterone replacement
5. 56 y/o female	Depression, Fatigue, Constipation, Somnolence	-Diabetes insipidus -secondaryHypothyroidism -secondary Adrenal insufficiency -Growth hormone deficiency -secondaryhypogonadism	Vascular, Trauma	Thyroxine, Glucocorticoid, & Vasopressin Replacement
6. 60 y/o female	Depression, Chronic opiod use	-secondaryHypothyroidism -secondaryAdrenal insufficiency	Vascular, ?Chronic Opiod use	Thyroxine replacement, Corticosteriod therapy
7. 82 y/o female	Depression, Chronic opiod use	-secondaryHypothyroidism -secondaryHypogonadism	Vascular, ?Chronic Opiod use	Thyroxine replacement
8. 84 y/o male	Fatigue, Weakness	-secondaryHypothyroidism	Vascular, Trauma	Thyroxinereplacement

C4

' When you hear hoofbeats, think of horses, but do not forget about zebras ! ': an unusual cause of dementia and cachexia.

I. Karkatzounis, D. Remolina, Z. Karmally, J. Olson. *Geriatrics, Rush University Medical Center, Chicago, IL.*

We describe a case of rapid-onset dementia with atypical features, accompanied by constitutional symptoms and hematological involvement. Diagnosis was attributed to two –rather rare- diseases, ie limbic encephalitis secondary to angioimmunoblastic lymphoma.

P.G. was a 77-year-old woman (retired accountant),who was admitted with a 4-month history of weight loss, forgetfulness, seizures, as well as sleep disturbances and visual hallucinations. She had a 30-pack-year smoking history, but otherwise, was healthy. Screening mammogram and colonoscopy done recently, were negative.

Clinical exam was significant for a body mass index of 18, with temporal wasting and palpable, non-tender lymphadenopathy in left mandible and left axilla. She scored 18/30 on Folstein's exam, with severe deficits in orientation, short-term memory and naming objects. The remainder of the exam was unremarkable.

Laboratory workup revealed severe pancytopenia and low albumin, while 'routine dementia screening' labs (including HIV-serology) were unrevealing. CSF-exam showed a moderately elevated protein level and a WBC-count of 10/mm3, with lymphocytic predominance. Serum antineuronal antibody screening was negative, while an MRI-brain with contrast established the diagnosis of limbic encephalitis, by showing increased signal on T2-weighted images in the mesiotemporal lobes bilaterally. A CT-guided left axillary lymph node core biopsy showed an angioimmunoblastic B-cell lymphoma.

Due to her rapid clinical deterioration and as per her wishes, no chemotherapy was given and she was transferred under inpatient hospice care, until she expired a few days later.

It is thought that up to 1 in 100 people with cancer have paraneoplastic limbic encephalitis, which is commonly misdiagnosed as a neurological disease, such as Alzheimer's dementia. In most cases, limbic encephalitis is a paraneoplastic disorder and indicates the presence of an underlying cancer.

Our case highlights the fact that although common things occur commonly, rare diagnoses should not be forgotten, especially in atypical clinical presentations. It lies upon the physician's clinical judgement to broaden the differential diagnosis and include rare causes on workup of common diseases (such as dementia), particularly whenever this is mandated by clinical circumstances.

C5

A rare presentation of lymphoma: primary pericardial lymphoma, without lymph node involvement and minimal bone marrow involvement.

I. Karkatzounis, M. Leiding. *Geriatrics, Rush University Medical Center, Chicago, IL.*

L.H. was a 76-year-old woman, who was admitted with a two-week history of dysphagia to solid food and dyspnea on exertion. Past medical history was significant for hypertension and a stable (for last 4 years) ascending aorta dilatation.

Clinical exam revealed BP=155/80 and muffled heart sounds. There was no paradoxical pulse, jugular venous distention or palpable lymph nodes. The remainder of the exam was unremarkable.

A chest X-ray raised a suspicion of pericardial effusion, while a transthoracic echocardiogram revealed a large, free flowing pericardial effusion, without features of tamponade physiology. A CT-chest/abdomen/pelvis showed a stable thoracic aorta dilatation, as well as a moderate-sized pericardial effusion, without though any evidence of thoracic or abdominal lymphadenopathy. Hemorrhagic pericardial fluid was drained (800 mls) and cytology was consistent with large B-cell lymphoma (CD-20 positive). Bone marrow biopsy showed only immunophenotypic evidence of low level involvement by lymphoma.

Patient was started on R-CHOP chemo, a few days after a pericardial window was performed, with initially good clinical response.

Our case is of particular interest, because of the unusual development of isolated pericardial involvement as the sentinel sign of lymphoma. Cytologic evaluation is of paramount importance, especially if the effusion is hemorrhagic, because such effusions are more likely to be malignant. Nevertheless, a negative cytology result can

not exclude the diagnosis of malignancy, particularly if the index of suspicion is high.

This case also illustates that 'atypical' presentations of 'common' diseases (ie absence of lymphadenopathy in a lymphoma patient) occasionally appear and mandate a high index of clinical suspicion to be recognized.

C6

Fever of Unknown Origin in a 91 Year Old Male.

J. B. Lopez,[1] M. R. Gonzalez,[2] A. F. Cole.[1] *1. Family Medicine Residency, Florida Hospital, Orlando, FL; 2. Family Medicine Residency, Florida Hospital East, Orlando, FL.*

Fever of unknown origin (FUO) in older adults presents numerous challenges compared to their younger counterparts. Atypical presentation and physiology of aging may complicate the diagnosis; therefore, it is crucial to follow a systematic approach incorporating a thorough history, physical exam and diagnostic tests geared towards possible infectious, inflammatory and malignant etiologies. In addition, quality of life is a key component in delivering care to older patients. The purpose of this report is to highlight the diagnostic approach and challenges of diagnosing FUO in the elderly. A 91 year old male presented to clinic with a 2-week history of low grade fevers, chills, worsening fatigue, weakness and shortness of breath. Initial exam presented a pleasant, well-kept, thin male without significant physical findings. A rectal temperature of 103.5 degrees Fahrenheit on the night of admission initiated empiric antibiotic treatment. Ancillary tests including leukocytes, sedimentation rate, tuberculin skin test and human immunodeficiency virus test were negative. Antibody titers for viral and bacterial diseases were negative. Initial blood culture was positive for slow growing gram negative rods but all other cultures were negative. Abdominal computed tomography (CT) showed non-specific liver findings and mild splenomegaly. Chest CT showed right lung nodule and small mediastinal lymph nodes. Consultants on the case included: infectious disease, gastroenterology, pulmonology and cardiology. Despite broad-spectrum antibiotics, the patient continued with evening fevers, chills and progressive functional decline. Antibiotics were discontinued and the patient was discharged to skill nursing facility after three days afebrile. The patient returned with similar symptoms three weeks later. Repeat chest CT showed enlarging lymph nodes. After fine needle aspiration of cervical node, the patient was diagnosed with mature T-cell lymphoma. The patient was discharged home with palliative care after oncology evaluation.

C7

Spontaneous Cervical Spine Fracture in an Elderly Woman.

L. P. Scheunemann, L. C. Hanson, N. Erdem. *Division of Geriatric Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC.*

History: An independent 88 year old woman with osteoporosis on bisphosphonate therapy developed acute localized neck pain after spending 2 hours paying bills. She was diagnosed with muscle strain as an outpatient and prescribed heating pads, muscle relaxants, and topical analgesics. On day 2, she presented to the E.D. where spine films were inconclusive, her pain was controlled with hydrocodone/APAP, and she was discharged home. The following day, caregivers found her in extreme pain that ran from her left ear down her neck on left rotation of the head. She denied radicular symptoms. She had never previously sustained a spontaneous fracture and had no history of trauma, rheumatologic disease or malignancy.

Physical: She had localized tenderness lateral to her cervical spine as well as mildly increased but symmetric patellar deep tendon reflexes and a positive Babinski on the left. Strength was normal except for mildly decreased hip flexion and sensation was grossly intact.

Lab/Imaging: Chemistries and CBC were unremarkable. Vitamin D 25-OH level was 36ng/mL. DEXA showed t-scores in the hip of -4.0 and spine of -2.8. TSH, SPEP and UPEP are pending. Cervical CT revealed fractures of the articular pillars bilaterally at C2 with widening of the atlantodental interval and mild basilar invagination of the dens. There was antero-listhesis of C3 on C4 with narrowing of the spinal canal. MRI did not reveal any compromise of the spinal cord. She was placed in a J-collar to immobilize her neck but continues to have non-union of the fracture. She has insufficient bone to consider surgical fixation. Despite consideration of recombinant PTH therapy and addition of calcium and vitamin D, the fracture is not expected to heal. She is to remain in the collar indefinitely.

Discussion: In the past 10 years, there have been 4 case reports of cervical spine fractures in fibrous dysplasia, 1 in plasmacytoma, 1 in renal osteodystrophy, and 3 in multiple myeloma. Cervical fractures in severe osteoporosis with minor trauma are well-described, but to our knowledge no one has reported spontaneous cervical fracture. In patients with severe osteoporosis with new neck pain even in situations of low musculoskeletal stress, consideration of fracture and prevention of complications including pain, functional decline, and exposure to the possibility of long-lie syndrome and serious neurologic sequelae are important.

C8

An Atypical Presentation of Fournier's Gangrene.

G. J. Manetti,[1] L. M. Walke,[2,3] C. N. Walker.[1,3] *1. Urology, Yale University, New Haven, CT; 2. Geriatrics, Yale University, New Haven, CT; 3. VA CT, West Haven, CT.*

Supported By: John A. Hartford Foundation

Introduction: Fournier's gangrene (FG) is a type of necrotizing fasciitis that usually affects the genitalia and/or perineum. Because FG is a rapidly progressive infection that is associated with a high mortality, it is considered a urologic emergency. Risk factors include diabetes mellitus, local trauma, and immunosuppressed state. Men aged 60-80 years with a predisposing factor are at highest risk. Causative organisms may be anaerobic or aerobic. Clinical presentation often involves significant pain, swelling, tenderness, and erythema.

Case: A 71 yo male with a h/o Prostate cancer s/p Radical retropubic prostatectomy presented to his doctor c/o a diffuse, pruritic rash x 24 hours plus 3 days right scrotal pain & swelling and penile swelling. He was treated with IV steroids then admitted to the MICU for treatment of anaphylaxis of unknown etiology. Lab tests revealed leucopenia, lactic acidosis, and worsening acute on chronic renal failure. Non-contrast CT scan of the abdomen/pelvis revealed a focal inflammatory process with streaking of the subcutaneous perineum fat and slightly prominent lymph nodes; no air was seen in the scrotum or perineum soft tissues. About 18 hours later he became hypotensive, tachycardic, and hypoxic requiring emergent intubation and pressor support. Due to his worsening clinical course, broad spectrum antibiotics were initiated and he was emergently taken to the OR for extensive surgical debridement and scrotectomy for presumed FG. Pathology of the tissue culture was positive for MRSA necrotizing fasciitis. During his hospitalization he underwent removal of his foreskin, dorsal penile skin, and right orchiectomy. He is recovering slowly and is awaiting discharge to a rehabilitation facility.

Discussion: In the literature FG has been associated with a mortality rate of 40% but in persons presenting with sepsis the mortality rate soars to 78%. Although imaging studies identifying subcutaneous air are helpful, the diagnosis of FG is based upon clinical suspicion. Patients with symptoms consistent with FG should emergently receive broad spectrum IV antiobiotics and GU evaluation, even if the common risk factors are not present.

Conclusion: Early recognition and treatment with aggressive debridement, broad spectrum antibiotics, and supportive care are essential to reduce the morbidity and mortality associated with FG.

C9

Bilateral Ureteral Obstruction Secondary To Pelvic Organ Prolapse.

L. A. Zaha, S. Sharma, H. Youssef, B. Zhu. *Internal Medicine, Mount Sinai (Jersey City) Medical Center, Jersey City, NJ.*

ABSTRACT BODY: Introduction:

Ureteral obstruction as a result of uterine compression is rare. Early clinical suspicion in increased age and parity patients is essential to diagnosis. We report a case of a 78-year-old woman presenting with bilateral ureteral obstruction as a result of pelvic organ prolapse.

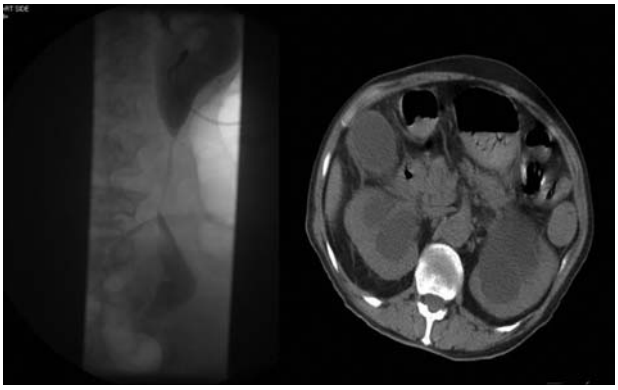
Case:

A 78-year-old woman with history of hypertension and Uterine Prolapse (UP) presented with shortness of breath for one week. The UP was treated 5 years ago with vaginal hysterectomy. Subsequently she developed a cystocele which was managed with pessary without much success.

The physical exam findings revealed bilateral basilar crackles and bilateral lower extremity pitting edema. On admission BUN was 17 and creatinine 1.37 with normal urinary output. After performing a cardiac catheterization the patient developed acute renal failure. CT abdomen revealed bilateral hydronephrosis and cystoscopy further showed bilateral ureteral strictures (Figure 1). A percutaneous nephrostomy tube was placed to relive the obstruction. The patient later developed end-stage renal disease. She was maintained on hemodialysis.

Discussion:

This case illustrates bilateral hydronephrosis developed secondary to bilateral ureteral obstruction as a result of longstanding pelvic organ prolapse. It is important to recognize and manage pelvic organ prolapse in elderly female before irreversible renal failure occurs.



C10

Venous Stasis Ulcer Treatment: Three layer sustained, elastic compression bandage combined with negative pressure wound therapy.

W. Butler,[2] D. Merkle,[2] M. L. Blagodatny.[1,2] *1. Geriatrics, Bridgeport Hospital, CT, Stamford, CT; 2. Wound Healing Center, Bridgeport Hospital, Bridgeport, CT.*

Presented are two case studies of leg wounds recalcitrant to standard treatments. When used alone, negative pressure therapy and compression wraps failed to heal the wounds. However, combining these treatments led to complete healing.

Case #1: 64 y/o male was admitted to the wound service with a leg ulcer of five months duration,underlying venous stasis disease, and recurring infection. The patient had steroid-dependent asthma. Prior treatment included surgical debridements, parenteral and oral antibiotics, negative pressure therapy, and compression bandages. During this admission he was again placed on parenteral antibiotics and an operative debridement was performed. However, the combination of a three layer sustained, elastic compression bandages and negative pressure therapy was initiated. The treatment continued after discharge. Wound closure took three months.

Case #2: 84 y/o female was admitted to wound service with a leg ulcer of three years duration. A wound developed ten months after the excision and irradiation of a B-cell lymphoma lesion on the right leg. She had a history of type 2 diabetes mellitus, peripheral vascular disease, and venous stasis disease. Previous treatments failed to heal the leg ulcer: hyperbaric oxygen, surgical debridements and biopsies, vascular stents, compression wraps, and negative pressure therapy. Finally, the patient underwent split thickness skin grafting, immediate negative pressuretherapy, and a compression bandage. Negative pressure and compression wraps were continued after discharge. Wound closure was achieved in five months.

C11

Esomeprazole as a cause of fever of unknown origin in an elderly patient with rheumatoid arthritis.

M. U. Perez Zepeda,[1] A. Gurza Jaime.[2] *1. Geriatrics, Instituto Nacional de Ciencias Médicas y Nutrición "Salvador Zubirán", Mexico, DF, Mexico; 2. Medicine, Compañia Luz y Fuerza del Centro, Mexico, DF, Mexico.*

Adverse drug reactions are more common in elderly, and drug fever is one of them. However, in a patient with rheumatoid arthritis other life threatening causes should be discarded. Therefore we present a patient with complex comorbidity and treatment, who was assessed for two years because of fever and abdominal pain, without any positive laboratory or radiologic findings.

A 68 year old man with history of rheumatoid arthritis, hypertension and dislypidemia, presented to emergency room with epigastric pain and vomiting, three years ago. His current medication at that moment was: leflunomide 20mg qd, ketoprofen 200mg bid, adalimumab 40mg every two weeks, atorvastatin 20mg qd, losartan 50mg qd and ASA 100mg qd. His arthritis was in remission at that time, and all the other comorbidities were under control. A NSAID induced dyspepsia diagnosis was made with endoscopic findings, for which esomeprazole 40mg qd was instituted as a treatment. After five months, with occasional arthralgias, he developed fever of 39.8°C (104°F), abdominal pain and vomiting in several acute attacks. A fever of unknown origin assessment was made during a two year period of time by an internist, infectologist and rheumatologist consultants, without a diagnosis. Rheumatoid arthritis activity was discarded, as it was tuberculosis, between other diagnosis (see table) including malignancies. Several urine and blood cultures were negative. He also had repeated normal hemograms. He was then referred to a geriatrician who withdraw the esomeprazole and the fever and abdominal pain disappeared, and he has been asymptomatic ever since. He is currently treated for dyspepsia with rabeprazole, without any adverse reaction. This is not the first case of esomeprazole associated fever, there is an italian report of a 64 year old man with fever, headache and myalgias. Adverse drug reactions should always be considered in elderly patients.

Laboratory and radiologic findings

Erythrocyte Sedimentation Rate	18mm/h
MycobacteriumPCR	Normal
Antinuclear antibodies	Negative
Prostatic USG, Abdominal CT	Normal
CA 19 9	10U/ml

C12

Epilepsia Partialis Continua in the Elderly.

M. Cumberland, A. Verma, S. Bellantonio, M. Brennan. *Department of Geriatrics, Baystate Medical Center, Sprngfield, MA.*

Supported By: No financial disclosure

Introduction: Epilepsia partialis continua (EPC), described in 1895, is characterized by continuous rhythmic muscular contractions

affecting a limited part of the body, lasting hrs to yrs, Risk factors include age, brain tumors, atherosclerotic CVD, and strokes; 56% of pts with EPC had prior stroke. We present a case of EPC 1 yr post stroke.

Case: 75y.o man with hx of CHF,CABG, R CEA and CVA one yr ago with residual LUE weakness, presented to ER after multiple generalized tonic clonic szs beginning with twitching in the L hand, moving towards the trunk and becoming generalized. This was associated with tongue biting but no loss of bowel/bladder. He remained alert throughout each seizure. Meds: antihypertensives and Coumadin. On exam pt was afebrile, hemodynamically stable, moving all extremities, with 4/5 strength in RUE, RLE LLE but 1/5 in LUE. The LUE continued to twitch despite repeated valium doses. CT brain: large area of encephalomalacia in distribution of R MCA c/w with prior infarct. EEG with LUE twitch: moderate disorganization of background and excessive background slowing, indicators of moderate degree of diffuse cerebral dysfunction. Ambulatory EEG: persistent slowing over the R with decreased beta activity c/w subacute or chronic abnormality involving subcortical regions. Pt continued to have twitching in LUE throughout admission despite loading dose and increasing dose of Keppra. Pt. was discharge on HD#9 with myoclonic jerks and weakness in left hand.

Discussion: The clinical presentation of EPC depends on the underlying cause, often a stroke, which may have resulted in an isolated sz or neurologic deficits prior to EPC. Our pt. had a hx of prior CVA with residual LUE paresis. The myoclonic jerks of EPC have a frequency of 1-2/sec, usually persist through sleep, and affect any muscle group, most commonly the face, upper limbs and trunk. About 60% of pts. will have other types of szs, muscle weakness, sensory loss or stretch reflex changes. EPC involves the motor strip of one hemisphere and has a clinically localized appearance. The absence of EEG abnormalities in some pts led to the hypothesis of a subcortical origin EPC. EPC usually respond poorly to antiepileptics but may resolve with time

Conclusion: EPC is uncommon but more likely in older pts. given the higher prevalence CVD and stroke. Clinicians should be aware of EPC and recognize this self limiting process and educate pts that the sxs may last hrs to yrs.

C13

Hypercalcemia in an Octogenarian: A case of hypervitaminosis D and newly diagnosed Sarcoidosis.

M. R. Shaikh,[1] M. Schulder-Katz,[2] E. Odierna,[1] E. Epstein.[2] *1. Geriatrics, Montefiore Medical Center, Bronx, NY; 2. Endocrinology, Montefiore Medical Center, Bronx, NY.*

Case:

An 83 year old Hispanic woman presented to the geriatric outpatient practice with diffuse joint pains, constipation and polyuria. Past medical history included hypertension, hypercholesterolemia, osteopenia and osteoarthritis. Medications included naproxen, atorvastatain, omeprazole, candesartan, and multivitamins. She denied using over the counter medications or other supplements. Vitals signs were stable and systemic examination was within normal limits. There was no thyromegaly or lymphadenopathy. Lab data showed normal CBC and liver studies. Basic metabolic panel including renal function was within normal limits, except for calcium of 11.6 mg/dl and phosphorus of 3.0 mg/dl. Further testing showed intact PTH level of 3.4 pg/ml (10-65), 25 OH vitamin D level (measured on two separate occasions) > 150 ng/ml with 1,25 OH vitamin D level of 115pg/ml (6-62). SPEP was negative for monoclonal spike. 24 Hour urine calcium was 243mg/TV (50-250). Chest X-ray showed ground glass opacities in both lung fields. CT of the chest showed similar findings in addition to sub-centimeter mediastinal lymphadenopathy. Abdominal and Pelvic CT was unremarkable. She was referred to a pulmonologist for further work up. PFT revealed restrictive lung disease with low DLCO and normal ACE level. Transbronchial lung biopsy showed non-caseating granulomas with negative fungal and mycobacterial stains and cultures. Thus with the diagnosis of Sarcoidosis and Hypercalcemia, she was started on corticosteroids and bisphosphonates Marked improvement in symptoms and normalization of in serum calcium, vitamin D and PTH levels were seen in a few months. The patient was successfully tapered off steroids within six months of initiation of therapy. The source of increased vitamin D intake remained elusive in this patient.

Discussion:

Hypercalcemia is a commonly encountered problem in Geriatric Practice. Though primary hyperparathyroidism and malignancy are the two most common causes of hypercalcemia,suppressed PTH with elevated 25 OH vitamin D level signifies Vitamin D toxicity or hypervitaminosis D,and elevated I, 25 OH Vitamin D suggests non-suppressible 1-alpha-hydroxylase activity of alveolar macrophages associated with granulomatous disease like Sarcoidosis. This case highlights the complex role of Vitamin D and its metabolites in calcium homeostasis.

C14

Methylphenidate—An Antidote for the Hypoactive Delirious Patient?

G. Chilakamarri,[1,2] N. Marsh,[1,2] E. Cobbs.[1,2] *1. Geriatric Medicine, Veterans Affairs Medical Center, Washington DC, DC; 2. Medicine, George Washington University, Washington DC, DC.*

History: An 82 y/o independent man with severe knee arthritis, hypertension, s/p aortic valve replacement was admitted for a left knee replacement. Postoperatively, he developed aspiration pneumonia, septic shock, and ARDS. He was intubated and admitted to the ICU where his course remained complicated. On post-op day 32 he was transferred to the inpatient ward where he was somnolent and confused. No additional cause of delirium was identified. He remained too somnolent to participate in physical or speech therapy or to take food by mouth. On post-op day 45, a Geriatrics/ Palliative Medicine Consultation was called, Physical exam revealed stable vital signs, a sleepy but arousable patient,who answered vaguely and fell back to sleep. NG tube present. Lung, heart, and abdominal exam were normal. Surgical wound was healing well. Skin breakdown noted on left heel. Labs were unremarkable and head CT scan normal. Impression: Hypoactive Delirium,likely multifactorial secondary to resolving sepsis,long ICU course, and possible anoxic brain injury.

Recommendations: Methylphenidate 2.5 mg po bid, can increase to 5mg bid in three days. Outcomes: After three days of methylphenidate treatment,there was a dramatic increase in his level of alertness. His cognition, communication, and mobility improved. Swallowing function improved and he was able to eat safely. Two weeks later, he was able to go to a subacute rehab facility.

Discussion: Methylphenidate has been reported in the palliative care literature most often in the context of alleviating depression and fatigue for advanced cancer patients. There have been very few reports however, of its use in the hospitalized non cancer patient with hypoactive delirium, for whom delirium often leads to a downward spiral of declining functional status, dysphagia, aspiration, deconditioning, and death. We report on a patient with several weeks of hypoactive delirium for whom methylphenidate dramatically improved swallowing, eating, mobility, and communication.

Conclusion: Selected patients with a hypoactive delirium may benefit from methylphenidate by improving level of alertness and functional status.

Ref: Otani M. Successful palliation of hypoactive delirium due to multiorgan failure by oral methylphenidate. Support Care Cancer. 2000 Mar; 8(2):134-7.

C15

Unusual Presentation Of Pulmonary Emboli. A case report.

H. Siddiqui,[1,2] N. Suchak,[2,1] M. Parulekar,[2] L. Tank,[2,1] A. Sarkar.[2] *1. Geriatrics, UMDNJ, Newark, NJ; 2. Geriatrics, Hackensack University Medical Center, Hackensack, NJ.*

A 74 year-old female with Parkinson disease, dementia, depression, osteoporosis, recurrent urinary tract infections (UTIs) was admitted to a sub acute rehab facility for rehabilitative care. Shortly

after admission she developed fever and hypotension. She was sent to the hospital where she was treated for resistant Klebsiella UTI and the possibility of neuroleptic malignant syndrome was entertained based upon psychoactive medication use. The patient returned to the rehab facility and remained stable for two weeks. Later, she started having low grade fever, hypoglycemic episodes and profuse sweating. Subsequent urine culture grew resistant Klebsiella. She was hospitalized again and received IV imipenem. The Infectious Disease consultant recommended obtaining cultures only if the patient had a temperature > 102 F. Soon after discharge to the rehab facility the patient's body temperature rose to101-102 F. The repeat urine analysis was unremarkable and the patient was not prescribed antibiotics. She continued to have decreased oral intake and became more withdrawn. After an extensive discussion with family, the patient was hospitalized for PEG placement. The Infectious Disease consultant evaluated the patient for fever of unknown origin (FUO). Autonomic dysfunction due to Parkinson's disease was considered in the differential diagnoses as a possible etiology for the patient's fever but this scenario seemed unlikely. CT chest/abdomen/pelvis that was obtained for evaluation of FUO revealed bilateral sub segmental pulmonary emboli (PE). The patient was treated with enoxaparin and subsequently warfarin. Lower extremity venous Doppler study did not reveal any deep venous thrombosis (DVT). The patient had been ambulatory with assistance. The patient was discharged to the rehab facility and remained alert and afebrile. Raloxifene was discontinued and its' contribution to the chain of events remains unclear.

Discussion: PE is associated with a mortality rate of approximately 30 percent without treatment, primarily due to recurrent embolism. However, accurate diagnosis followed by effective anticoagulant therapy decreases the mortality rate to 2 - 8 percent. The clinical presentation of PE may be variable and nonspecific, making an accurate diagnosis difficult. Elderly patients with fever of unknown origin should be evaluated for PE and DVT.

C16

"Missing the Boat"- Presentation of Migraine as Recurrent TIAs - a case report.

K. Doshi,[1,2] A. Sarkar,[2] M. Parulekar,[2] N. Suchak,[2,1] L. Tank.[2,1] *1. Geriatrics, UMDNJ, Newark, NJ; 2. Geriatrics, Hackensack University Medical Center, Hackensack, NJ.*

Introduction: Headache and transient neurological deficits can occur both in patients with migraine and in patients suffering a transient ischemic attack (TIA).

Case Presentation: An 88 year-old female with hypertension, hyperlipidemia, osteoporosis, and vit. D deficiency had a TIA in 1999. At that time the patient was treated with aspirin. In 2004, when the patient was hospitalized with episodes of TIA, MRA revealed moderate stenosis of intracranial right internal carotid artery. Stenting was deferred, as it was an investigational procedure. In Jan 2007, she was re-hospitalized for left sided weakness and numbness that lasted for 20 minutes. Patient was treated with aspirin/ dipyridamole. Within a few days, the patient again presented to the ER with left sided weakness that resolved completely in 25 minutes. Aspirin/ dipyridamole was discontinued and clopidogrel was started. In July 2007, she was re-hospitalized with transient right arm weakness and speech impairment and was treated with aspirin. In June 2008, she was again hospitalized with numbness of right side of her face and left upper and lower extremities. The patient had a complete stroke workup during each hospitalization that was non-revealing.

During a recent outpatient visit, the patient stated that she typically gets headache and pain at base of neck just prior to the transient neurological deficits. The headache is described as heaviness with a "cement like" sensation. Patient denied any pain while chewing or any visual disturbance. CNS vasculitis was considered in the differential diagnoses and work-up was unremarkable. At that time in Aug 2008, migraine treatment was considered and the patient was treated with sumatriptan for acute events and nadolol for prophylaxis.

The patient is clinically stable now on her current daily regimen that includes aspirin, clopidogrel and nadolol.

Discussion: There is abundant literature regarding complicated migraine presenting as TIA but it is noted primarily in a younger population. In the elderly, atherosclerotic vascular etiology is more common. As per our literature review, new onset migraine is less common in the elderly and odds are greatly increased for probable migraine rather than typical migraine. However, as was done in our patient, migraine should be considered in the differential diagnoses of recurrent TIAs.

C17

Unusual presentation of Acute Myeloid Leukemia in an elderly patient- a case report.

K. Doshi,[1,2] M. Parulekar,[2] N. Suchak,[2,1] L. Tank,[2,1] A. Sarkar.[2] *1. Geriatrics, UMDNJ, Newark, NJ; 2. Geriatrics, Hackensack University Medical Center, Hackensack, NJ.*

Introduction: We encountered an unusual presentation of Acute Myeloid Leukemia (AML) in an elderly female patient.

Case report: A 91 year-old nun presented to the hospital with generalized fatigue and diffuse maculopopular rash. Her medical history included heart failure, gastritis, anemia, hypothyroidism, renal insufficiency, and hemicolectomy for bowel obstruction.

An out-patient skin biopsy depicted small clue cells suspicious for cutaneous T cell lymphoma. At time of admission to the hospital patient's white blood cell count (WBC) was 184K with thrombocytopenia and anemia. Peripheral smear showed 50% mature neutrophils with 50 % atypical monocytes. Hematology/oncology evaluation led to an initial impression of Chronic Myelomonocytic Leukemia/ Acute Myeloid Leukemia (CMML/AML) or CMML with Sweet syndrome/leukemia cutis.

A subsequent skin biopsy depicted diffuse dermal infiltrate by monotonous population of atypical monocytic type cells suggestive of monocytic leukemia. During the hospital course, the patient had a bone marrow biopsy that was consistent with evolving acute monocytic leukemia in CMML background. The patient was treated with hydroxyurea. The patient developed acute renal failure secondary to tumor lysis syndrome that responded to intravenous fluids. Skin lesions resolved completely over time. Later the patient was started on 5-azacitabine chemotherapy for AML-CMML.

Conclusion: Usual median age of patients with AML is 65-70 years. Elderly patients with AML do not receive specific treatment secondary to overall poor performance status and prevalence of poor prognostic factors such as -5/-7 deletion, secondary AML and MDRD1 gene mutation. But newer biological agents such as tipifarnib, lestaurtinib, decitabine and azacitidine are better tolerated and more promising in the elderly. These agents are associated with improved quality of life. Our patient presented with rash and high WBC and was treated with hydroxyurea and azacitidine without use of traditional 7+3 regimen that led to remission. The patient tolerated this regimen with resultant remission.

C18

AMYLOIDOSIS CAUSING SMALL BOWEL OBSTRUCTION IN AN ELDERLY MALE.

S. Ramachandran, M. Hofmann, J. Yuschak, M. Cassin, K. Cole. *Medicine/Surgery, Abington Memorial Hospital, Abington, PA.*

A 77 y.o. man with a history of ESRD on hemodialysis, heparin-induced thrombocytopenia, Type II DM, and gout presented with a right femoral fracture and a subdural hematoma after a fall. Corrective hip surgery was performed; he underwent rehabilitation, experienced no complications and was discharged. The patient presented four days later with abdominal pain, nausea and vomiting and non-bloody diarrhea. On exam, he was febrile and the abdomen was dif-

fusely tender with decreased bowel sounds. Although his symptoms improved initially with conservative management for partial small bowel obstruction, he developed worsening abdominal pain, fever and bandemia (50%). A portion of hemorrhagic and thickened small bowel was removed during emergent laparotomy. The pathology demonstrated amyloidosis in the muscularis mucosa of the small bowel. An extensive workup for primary amyloidosis was negative. However, the beta-2 microglobulin was markedly elevated at 16500 (1010-1730) and dialysis-related amyloidosis was suspected. Postoperatively, the patient continued to have severe diarrhea thought to be related to malabsorption after bowel resection, amyloidosis or clostridium difficle infection. Although repeated testing for clostridium difficle toxin was negative, the diarrhea responded to empiric metronidazole therapy.

Amyloidosis affects the gastrointestinal tract and causes diarrhea, steatorrhea, occult blood in stools and pseudo-obstruction. Patients undergoing long-term hemodialysis are predisposed to beta-2 microglobulin derived systemic amyloidosis. In this case, amyloidosis seemed an unlikely differential cause of small bowel obstruction on initial presentation with recent initiation of narcotics in the postoperative period seeming more likely. Although relatively uncommon, amyloidosis should remain in the differential for an elderly patient presenting with small bowel obstruction/pseudo-obstruction especially in those undergoing chronic hemodialysis.

C19

Neuroleptic Malignant Syndrome.

P. Liu, V. Argento, S. Kwon, B. Skudlarska. *Medicine, Yale University/Bridgeport Hospital, Bridgeport, CT.*

Mr. T is a 70-year-old white male with a 12-year history of frontotemporal dementia. He presented to the ED with a 2-week-history of worsening agitation, confusion, unsteady gait, and oliguria. At that time, he was receiving rehabilitation after a brief hospitalization for seizures. Because of increasing agitation and restlessness, he was prescribed 2mg haloperidol q4h prn. Home medications contained depakote (for seizure), amlodipine, and lansoprazole. His initial vital signs in ED included a temperature of 100.2 F, tachycardia at 100-140 bpm, and hypertension at 140-180/70-100. Physical examination revealed muscle rigidity over all extremities. Sensation, muscle power, and deep tendon reflex were normal. Lab demonstrated a WBC of 12300, a creatinine of 3.03 (baseline 0.8), and a high CPK of 16396. Arterial blood gas revealed a non-anion gap metabolic acidosis. Urinalysis showed large blood, 2-5 RBC/HPF, and 1-3 WBC/HPF. Initial impression was severe inflammatory response syndrome with unknown infection source. Zosyn was started. Thorough skin exam, urine, sputum, blood culture, and CXR failed to disclose any infection site. EEG did not show any seizure activity. Aggressive hydration was begun to prevent worsening acute renal failure caused by rhabdomyolysis. His CPK went down and his renal function improved dramatically during the following 2 days. Nevertheless, the fever, hypertension, rigidity, and agitation persisted. Neuroleptic malignant syndrome (NMS) was thus suspected, so haloperidol was discontinued. Lorazepam was started for agitation. The patient's fever, hypertension, rigidity, and gait normalized gradually over the next 5 days. Hydration was stopped after CPK and creatinine came back to normal range. Zosyn was discontinued, as there was no evidence for infection. He was discharged back to the rehab unit and has since made a full recovery to his baseline. It is not uncommon to see NMS on geriatric patients. Physicians often miss the diagnosis of NMS because of its rarity, non-specific presentation, and lack of objective diagnostic tools. However, early recognition leads to substantial mortality decrease. NMS should be suspected in patients taking any class of antipsychotics, regardless of patient's age, dose, duration, and route of administration. Treatment includes removal of all neuroleptics, IV hydration, and use of benzodiazepines to control agitation. Reported mean recovery times are 7 to 11 days.

C20

Glossodynia: An Unsuspected Etiology.

R. K. Gopalraj, D. E. Antimisiaris, J. G. O'Brien, J. Smith. *Family And Geriatric Medicine, University of Louisville, Louisville, KY.*

MC was admitted to skilled nursing on 10/06/08 for rehabilitation post partial glossectomy for a recurrent carcinoma of the tongue. Her past medical history was significant for osteoarthritis, lupus, dizziness, syncope, falls, hypertension, osteoporosis and hypothyroidism. Her medications were: Levothyroxine 75mcg daily, Oyster-CalD 500mg BID, Senna-S daily, Alendronate 70mg weekly, Oxycodone/Acetaminophen prn, Acetaminophen prn, and Milk of Magnesia. On 11/03/08 the nursing staff notified MC's physicians of her complaints of a burning tongue and refusing food, resulting in weight loss and general decline. The team PharmD visited on 11/11/08 and when presented with the patient's complaint noted the patient was refusing medication and food due to "bad taste" and "burning". Otherwise, she was cognitively intact with excellent post surgical wound healing, absence of inflammation or exudates. Other common causes of glossitis had been excluded. Following a review of the nursing notes and medication record, a pattern of food refusal emerged. It appeared to be a weekly occurrence, coinciding with the scheduled dosing of Alendronate, which can be caustic to the gastric and esophageal mucosa.(1) The nursing staff confirmed adherence to appropriate Alendronate administration, i.e. before breakfast with 8oz of water and remaining upright for 30 minutes. But, then admitted that all tablets were being crushed, thus the Alendronate was directly irritating the patients buccal mucosa. The nursing staff were unaware and lacked training about crushing sustained release tablets which was done routinely and the dispensing pharmacy failed to provide any "Do Not Crush" labels. This is not surprising considering that one in every four doses administered in the nursing home setting contains an error, and the most common error was crushing medications inappropriatly.(2) Given the frequency with which patients in the Long Term Care setting have swallowing difficulties, coupled with the frequency of bisphosphonate use, this case is presented to alert others to this potentially life threatening scenario.

1. Gonzalez-Moles MA, et al. Alendronate-related oral mucosa ulcerations. Journal of Oral Pathology and Medicine. Nov 20 1999;29(10):514-518.

2. Haw C, et al. An observational study of medication administration errors in old-age psychiatric inpatients. International Journal for Quality in Health Care. June 2007; 1–7.

C21

"Primum Non Nocere (First Do No Harm)": A Prescription Error Resulting in a Near-fatal Fall.

R. K. Dhelaria, M. Brennan. *Internal Medicine, Baystate Medical Centre, Springfield, MA.*

Introduction: Drug-related adverse events threaten the quality of life and even the survival of geriatric patients. The authors present a case in which inappropriate prescribing nearly resulted in the death of a high-functioning elder.

Case: A healthy, cognitively intact 86 yr old man from the community went to the bathroom in the dark, lost his way and fell down a flight of stairs. In the ED, he was delirious and hallucinating. He had no focal neurologic deficits. Imaging revealed a clavicular fracture along with compression fractures of L4, T6, and T11. There was no acute intracranial pathology. Initially, staff attributed the delirium to opiates in the ER. A metabolic panel, CXR and UA were unrevealing. Subsequently, the geriatrics consultation team verified that the patient was confused even prior to opiate use. Two days before the fall, the patient was given orphenadrine for back strain in an urgent care clinic. Muscle relaxants were discontinued and he improved cognitively despite ongoing appropriate analgesia; he was discharged to a skilled nursing facility for further rehabilitation.

Discussion: Drug misadventures in older adults contribute to about 1/3 of ER visits and hospital admissions. It is uncertain how

many preventable geriatric deaths result from medication errors but the Institute of Medicine estimated that about 44,000-98000 deaths yearly are due to medical errors. This exceeds the number of Americans who die annually in automobile accidents. The current version of the Beer's List* represents expert consensus on drugs best avoided in elders. Orphenadrine, along with virtually all muscle relaxants, is included on the list due to a high incidence of delirium. Nonetheless, older adults are often given muscle relaxants by well-intentioned clinicians who are unaware of their risks.

Conclusion: Physicians need to be aware that appropriate analgesia may actually decrease the risk of delirium; this will prevent unnecessary suffering in geriatric patients. This case also highlights the benefits of collaboration between trauma and geriatrics teams. Adverse drug events are common and often preventable among ambulatory elders. Translational research should clarify how best to increase provider's awareness of the Beer's List and the common categories of drugs to be avoided.

*Fick DM. Updating the Beers criteria for potentially inappropriate medication Use in older adults. Arch Intern Med. 2003;163:2716-2724

C22

Geriatrician's Treatment Dilemma: Known Risk versus Questionable Benefit.

S. Crowder, H. Atkinson, F. Watkins. *Section of Geriatric Medicine and Gerontology, Wake Forest University Medical Center, Winston-Salem, NC.*

An 82 year-old man with history of embolic stroke, carotid endarterectomy, atrial fibrillation and hypertension was admitted to the Acute Care for the Elderly Unit for symptomatic anemia (Hgb=8.7). His Hemoglobin 12 months prior to admission was 14.3. The patient had been prescribed aspirin 325 mg daily and warfarin for known cerebrovascular disease (CVA) and atrial fibrillation. An outpatient esophagogastroduodenoscopy, ordered to investigate anemia and a 12-pound weight loss, revealed multiple duodenal ulcerations. After stabilization of his hemoglobin, we performed a review of the medical literature to determine recommended guidelines for management of atrial fibrillation and secondary prevention of CVA in the elderly. Unfortunately, there was not a clear recommendation for the combination of aspirin and warfarin as secondary prevention of CVA and primary prevention of coronary heart disease in elderly patients with atrial fibrillation. A clinical decision was made to initiate proton pump inhibitor therapy, discontinue aspirin and warfarin for 2 weeks, and arrange weekly follow-up with CBCs. If his hemoglobin remains stable, we plan to restart warfarin and re-evaluate the indication for aspirin at the dose of 81 mg daily in another 2 weeks in conjunction with reducing the INR goal to 2.0-2.5.

Discussion: Although numerous randomized controlled trials have proven the efficacy of aspirin therapy as secondary prevention of coronary heart disease and CVA in moderate and high-risk younger patients, the potential benefit of this medication in populations age 75 and older compared to the risk of bleeding is not well understood. Also, the optimal dose of aspirin therapy necessary to prevent a major vascular event without the added risk of major GI bleeding is not clear. With age, the upper GI tract loses many of the protective barriers to mucosal damage and is less able to repair damage once it has occurred. Our patient presents a unique clinical management dilemma, as he has a known history of CVA, atherosclerotic disease, and atrial fibrillation. Often, clinical guidelines neither specifically address treatment strategies for our population of patients, nor do they consider the age-related risks or concomitant therapies. This case report illustrates the ever-present need for further clinical research within the geriatric population in order to better guide clinical decisions.

C23

News Flash- A New Black box Warning.

W. K. Paik, S. Kamal, D. Asnis, T. Toronjadze, O. Batista, V. Kasiyan, A. Lodha, A. Vela, D. Dave, K. Patel. *Geriatrics, Flushing Hospital, Flushing, NY.*

Introduction: Fluoroquinolones (FQ) were introduced in the 1980s and have since become one of the most widely used antibiotics worldwide. Multiple case reports linking tendonitis with FQ were published: 1983-norfloxacin, 1987- ciprofloxacin and 1991- perfloxacin. In 1996, the US FDA issued a FQ class warning with tendon rupture/tendonitis after more than 200 case reports were printed. The PDR was updated in 1996 claiming the risk was higher in those on corticosteroids (CS), especially the geriatric patient. Finally July 8, 2008, the FDA request boxed warnings for this complication. The risk was higher in those greater than 60, on CS, and in kidney, heart and lung transplant recipients. FQ induced tendonitis develops suddenly, with sharp pain occurring with walking. Most ruptures occur after 2 weeks. Despite the numerous reports about this side effect and litigious cases throughout the internet, this new black box warning needs further discussion with physicians and patients need this awareness as well.

Case: 79 year old male with past medical history of BPH, HTN underwent transurethral needle ablation of prostate and post procedure was prescribed levofloxacin for 10 days. On day 5 while taking his daily walk, he felt sudden bilateral ankle pain and swelling. Ten days later the pain and swelling worsened, he went to a podiatrist who elicited severe tenderness and swelling in Achilles tendon area with + Thompson test on the left side. MRI confirmed the suspicion: high grade partial tear of the right Achilles tendon five cm from its insertion superimposed upon underlying tendonopathy, and complete tear of left Achilles tendon 5.4cm proximal to the insertion with a 2.2cm gap. The patient refused surgery and cast placement, three month later pain largely resolved; he receives physical therapy and uses a standard walker for balance.

Conclusion: FQ are increasingly found to affect the tendon. Patients must be told to call their physician if they develop pain and FQ should be stopped. If mild tendinitis occurs, restriction of weight bearing for 2-6 weeks is advised. Rupture can be treated surgically or conservatively and requires casting and rest. Immobilization can be especially devastating. We believe this may be the tip of the iceberg since many geriatric patients who are placed on FQ are demented, immobile and will not verbalize any adverse effects.

C24

Sporadic Creutzfeldt Jakob Disease Mimicking Stroke.

Z. H. Karmally, D. Remolina, I. Karkatzounis, M. Tareen. *Geriatric Medicine, RUSH University Medical Center, Chicago, IL.*

Background: Creutzfeld–Jakob disease, first described in 1920, is an unusual neurologic disease, with a prevalence of approximately 0.5-1 case per million population. The disorder is due to neuronal degeneration resulting from the accumulation of a pathologic isoform (PrP CJD) of the prion protein (PrPC), a normal cellular protein. 85% of cases of CJD are sporadic, with familial and iatrogenic cases accounting for the remainder.

Case: 65 year old male, smoker, of Philippine origin with diabetes and hypertension. Experienced nausea, vomiting, dizziness and blurring of vision while on the plane from Philippine to Japan. He saw an ophthalmologist two days after the symptoms and was told that his vision was fine. A week later his symptoms worsened. He began to stare, was less interactive and appeared to have worsening short-term memory. He was more somnolent and denied any motor or sensory symptoms. He was having difficulty dressing, getting organized and his speech was beginning to get delayed. CT scan and MRI of head were done to rule out stroke and infectious process. CT angiogram of head and neck showed no evidence of hemodynamically significant stenosis. EEG showed epileptiform discharges and

generalized slowing consistent with the diagnosis of Creutzfeldt-Jakob disease. Lumbar puncture was performed and revealed no evidence of infection or malignancy but elevated levels of protein 14-3-3 in CSF as compared to the normal control, this finding is seen with prion disease. A later MRI revealed hyperintense signals in cerebral cortex and basal ganglia.

His family took him for a second opinion at UCSF, where he was started on a new anti-malarial medication for a clinical trial.

Discussion: Creutzfeld Jacob Disease is a rare neurological disorder. The heterogeneity of the clinical presentation makes the diagnosis of CJD challenging. Additional confounding factors are lack of sensitivity and specificity of a single diagnostic test. The presence of hyperintense signals in cerebral cortex and basal ganglia on MRI, periodic sharp wave complexes on EEG and detection of protein 14-3-3, all facilitate diagnosis though definitive diagnosis is dependent on brain biopsy. The disorder is fatal in a short time, usually within 7 months, but a few people survive as long as 1 or 2 years after diagnosis of the disorder. The cause of death is usually infection, heart failure, or respiratory failure. There is no treatment that can cure or control CJD.

C25

The Impact of Pedometer use on Physical Activity in Older Adults.

A. A. Foltz, J. Gammack, B. Colvin. *Saint Louis University of Medicine, Saint Louis, MO.*

Gammack, JK; Foltz, A; Colvin B.

St. Louis University School of Medicine

Purpose: Pedometers have been shown to increase physical activity and decrease body mass index in middle-aged adults, however little research has been done on the effects of pedometers in an older population. It is hypothesized that the use of pedometers can be used to increase and sustain physical activity in a community dwelling elderly population.

Methods: Community dwelling, ambulatory adults age 65 and older in six senior living communities were recruited to wear a pedometer for four-weeks, followed by two weeks without the device and then a final week with the pedometer. During the first and last week, participants were not able to view the number of daily steps taken. Patient education materials and weekly meetings were used to encourage participants to increase their steps by five percent each week for four consecutive weeks. Functional parameters measured at baseline, weeks three, five, and study completion included: functional reach, two-minute walk, leg lift repetitions, timed Up and Go, Tinetti Gait and Balance, and grip strength. Target enrollment was thirty subjects in order to demonstrate a 20% increase in weekly steps over four weeks.

Results: Data collection has completed with a total of 32 participants enrolled. The average age is 92 years; 88% are female and 75% Caucasian. At baseline participants took an average of 3528 steps per day. After four weeks the average number of daily steps was 3908 (10.8% increase) and at study conclusion 3955 (12.1% increase). Between baseline and week four, the Timed Up and Go improved from 12.5 to 10.1 seconds and leg lift repetitions in 30 seconds increased slightly from 24.8 to 25.3. There were no improvements in functional reach, two minute walk distance or grip strength.

Conclusion: Pedometers provide an incentive for older adults to increase the average number of daily steps. This effect can be maintained in part, even when the number of steps is not revealed. Other markers of physical function including timed walking and leg lift repetitions are improved with the use of pedometers.

C26

The Safety Profile of Diclofenac Epolamine 1.3% Topical Patch in Elderly and Non-Elderly Patients: Pooled Analysis of 10 Studies.

C. Fuller,[1] J. Yanchick,[2] W. Zhao,[1] M. Magelli.[2] *1. MMS Holdings, Inc., Canton, MI; 2. Alpharma Pharmaceuticals LLC, Piscataway, NJ.*

Supported By: Alpharma Pharmaceuticals, LLC; Institut Biochimique SA (IBSA)

Purpose: To evaluate the safety profile of the diclofenac epolamine topical patch (DETP) in elderly and non-elderly patients during short-term treatment of pain associated with minor sports injuries or inflammatory pathologies.

Methods: The safety profile of the DETP, approved in the US for acute pain due to sprain, strain, and contusion, was evaluated across 10 clinical trials in elderly and non-elderly populations (multicountry, 1991-2004): 8 with twice daily treatment for 14-15 days and 2 with once daily treatment for 7 days. All adverse events (AEs) reported from these clinical trials were coded with MedDRA and data were pooled across trials. Frequency of AEs in elderly (≥60 years) and non-elderly patients (<60 years) was summarized by treatment (DETP vs placebo), age, and preferred term. Concomitant conditions and medical history that might have predisposed patients to increased AEs commonly associated with NSAIDs (eg, gastrointestinal [GI] bleeding, renal toxicity, and increased cardiovascular risk) were assessed. Analysis of patient-reported and investigator-rated tolerability also was performed for 8 studies with available data.

Results: In the 10 trials analyzed (N=1758), 17% of patients were elderly (n=304; mean age=69±7 years) and 83% were non-elderly (n=1454; mean age=35±12 years), with similar numbers of men and women irrespective of age group (p=0.11). Overall AE incidence was similar for placebo (n=880) and DETP (n=878) treatment (16% vs 14%, respectively), with local skin and subcutaneous conditions being the most frequently reported AE in DETP-treated patients (<7% in both populations). Elderly patients treated with the DETP (n=154) had an AE incidence rate of 5% compared with 15% for non-elderly patients (n=724). There was no indication that patients with comorbid conditions were more susceptible to experiencing AEs than patients without these conditions (p=0.88). Tolerability of DETP treatment was assessed (n=1636) as "excellent" by the majority of patients (60-68%) and investigators (65-70%), irrespective of age group.

Conclusions: The DETP is a generally safe and well-tolerated NSAID treatment option in patients with acute or chronic pain associated with minor sports injuries and inflammatory pathologies, irrespective of concurrent conditions.

C27

Increased Oxygen Consumption during Whole Body Vibration with Loading in Older Men.

D. Serravite,[1,2] S. Mow,[3,2] B. A. Roos,[2,4] J. Signorile.[1,2] *1. University of Miami, Miami, FL; 2. GRECC, Bruce W. Carter Dept Veterans Affairs Medical Center, Miami, FL; 3. University of Miami Miller School of Medicine, Miami, FL; 4. Stein Gerontological Institute and University of Miami Miller School of Medicine, Miami, FL.*

Sarcopenic obesity is a major problem facing aging populations, especially in industrialized nations. Whole body vibration (WBV) has been shown to be an effective tool for increasing strength and power in older persons, but its use as a training modality to reduce body fat in older persons is questionable. **PURPOSE**: To determine increases in oxygen consumption (VO2) due to variations in WBV training protocols in older persons. **METHODS**: Five untrained men, age 76.0 ± 5.4 y, participated in the study. Four different exercise protocols were tested on separate days after a 12-hour fast. VO2 was collected during rest (sitting; 15 min), exercise (squats; 8 min), and recovery (sitting; 15 min). Six 30-second sets of active squatting (3s/squat) were performed (1 min recovery between sets). WBV protocols used a combination of load and vibration: body weight with no WBV (BW-NV), BW with WBV (BW-V), BW plus 20% BW with NV (20%-NV), and 20%BW with WBV (20%-V). WBV was applied at 35 Hz and 2-3 mm amplitude, and loads were applied at the shoulder. Test days were separated by at least 48 hours and testing order was randomized. **RESULTS**: Repeated measures ANOVA revealed stage x vibration ($p = .003$) and stage x load ($p = .022$) interactions for VO2. Exercise produced significantly higher VO2 than rest ($p < .001$) or recovery ($p < .001$); also the recovery VO2 was higher than VO2 at rest ($p < .001$). Post hoc analyses by exercise stage revealed no significant

differences among conditions at baseline. During exercise, WBV produced a higher VO2 than NV (p = .056). Additional pairwise comparisons showed that 20%-V produced significantly higher VO2 than BW-NV (p = .047), while the 20%-NV condition did not increase VO2 above the BW-NV condition (p = .152). Additionally, the BW-V condition produced a higher, albeit nonsignificant, VO2 than the 20%-NV condition. **CONCLUSION**: WBV appears to be a more effective tool for increasing VO2 than resistance exercise alone. Also, at the moderate loads that are appropriate for interventions in older persons, the addition of WBV can increase VO2 above the use of external loading alone.

C28

The effect of intentional weight-loss on total mortality in older adults.

M. K. Shea,[1] C. C. Davis,[2] B. J. Nicklas,[1] D. W. Kitzman,[1] M. E. Miller,[2] K. Kennedy,[1] S. B. Kritchevsky.[1] *1. Gerontology, Wake Forest University Health Sciences, Winston-Salem, NC; 2. Public Health Sciences, Wake Forest University Health Sciences, Winston-Salem, NC.*

Background: The prevalence of obesity is increasing among older adults, but there is a reluctance to recommend weight loss as a strategy to deal with the disabling effects of excess body weight in this age group. One concern, based on observational studies, is that weight loss could lead to excess mortality. However, this weight loss is largely unintentional and data from randomized weight-loss trials have not been reported.

Purpose: To determine if randomization to a weight loss intervention is consistent with an increase in relative mortality risk of 1.3, for a 3-5 kg weight loss, as is reported in observational studies.

Setting: The Arthritis, Diet, and Activity Promotion Trial (ADAPT), a randomized intervention trial (n=305; mean age 69±6yr, BMI 34±5 kg/m2, 72%F) that assessed the influence of weight-loss and/or exercise on function in overweight adults with knee osteoarthritis. Weight-loss was achieved through dietary counseling and lifestyle modification [1].

Methods: ADAPT ended in December 1999. Participant deaths were ascertained through April 2008. We used internet sources and searched the social security death index using participant identifiers.

Results: The mean weight loss in the dietary weight-loss groups (4.9 kg) was significantly greater than the mean weight-loss in the non-weight-loss groups (2.3 kg) (p<0.05)[1]. In intent-to-treat analyses the mortality risk for those randomized to an 18-month weight-loss intervention (n=156, 16 deaths) did not differ from the mortality risk for those randomized to a non-weight-loss intervention (n=159, 26 deaths) (RR=0.63; 95%CI 0.36, 1.12). There was no difference in mortality risk between the randomized groups for those participants who were ≥ the median age of 67 yr (range 67-80 yr) (RR=0.61; 95%CI 0.31, 1.12) and for those who were <67 yr at baseline (range 60-66 yr) (RR=1.07; 95%CI 0.34, 3.34).

Conclusions: These results from a randomized weight-loss intervention trial are not consistent with the epidemiological reports that weight-loss is associated with an increased risk for total mortality. Observational studies may be unable to provide adequate information from which to ascertain the true costs and benefits of weight loss in older adults.

[1] Messier SK et al, Arth Rheum 2003: 50(5) p. 1501-10.

C29

Efficacy and Safety of Silodosin in Different Age Groups of Men With Symptoms of Benign Prostatic Hyperplasia.

M. C. Gittelman,[1] L. S. Marks,[2] L. A. Hill,[3] W. Volinn,[3] G. Hoel.[3] *1. South Florida Medical Research, Aventura, FL; 2. Geffen School of Medicine, UCLA, Los Angeles, CA; 3. Watson Laboratories, Inc., Salt Lake City, UT.*

Supported By: Watson Pharmaceuticals, Inc.

Pooled efficacy and safety data from 2 identical, randomized, placebo-controlled, double-blind studies in men with BPH symptoms were stratified by age group.

Men aged ≥50 years (y) with International Prostate Symptom Scores (IPSS) ≥13 and peak urinary flow rates (Qmax) of 4 to 15 mL/sec were randomly assigned to silodosin 8 mg or placebo once daily for 12 weeks. Changes in IPSS and in Qmax, from baseline to last observation carried forward, were primary and secondary endpoints, respectively. Treatment differences were assessed by analysis of covariance. Results for patients aged <65y and ≥65y were analyzed separately.

Of 923 study participants, 415 (45%) were aged ≥65y. Among patients who received silodosin (n = 466), 8.1% of those <65y and 4.3% of those ≥65y discontinued treatment due to adverse events. Depending on age and treatment group, the percentage of Caucasian patients varied between 82% (<65y, placebo) and 93% (≥65y, placebo, silodosin). In both age groups, silodosin-treated patients experienced significantly greater improvement in IPSS, including irritative and obstructive subscores, than placebo-treated patients, and improvement in Qmax was significantly greater with silodosin than with placebo (Table). The incidence (% patients) of the most common silodosin-related adverse event, retrograde ejaculation, was lower in the older age group (<65y, 38.6%; ≥65y, 15%). The incidence of drug-related orthostatic hypotension, although slightly higher in the older age group, overall was similar for silodosin vs placebo (<65y, 1.5% vs 1.2%; ≥65y, 2.4% vs 1.9%). No cardiac events occurred. The only serious drug-related event was a case of suspected syncope in a patient aged 85y who took a prohibited concomitant medication (prazosin).

Silodosin provided significant relief of BPH symptoms and was well tolerated, irrespective of age, with a placebo-like cardiovascular safety profile.

Table. Summary of Treatment Effects (Silodosin vs Placebo) by Age Group

	<65 years, n = 508		≥65 years, n = 415	
	LSM (95% CI)	*P*	LSM (95% CI)	*P*
IPSS Total	−2.9 (−4.0, −1.8)	<.001	−2.7 (−3.8, −1.6)	<.001
IPSS Irritative	−1.0 (−1.5, −0.5)	<.001	−0.9 (−1.4, −0.4)	<.001
IPSS Obstructive	−1.9 (−2.6, −1.2)	<.001	−1.8 (−2.5, −1.1)	<.001
Qmax, mL/s	1.0 (0.2, 1.8)	.020	0.9 (0.2, 1.7)	.014

LSM, least squares mean; CI, confidence interval

C30

Dimebon Improves Cognition, Function, and Behavior in Patients With Mild or Moderate Alzheimer's Disease: Results by Disease Severity of a 1-Year Double-Blind, Placebo-Controlled Trial.

R. Doody,[1] M. Sano,[2] P. Aisen,[3] L. Seely.[4] *1. Neurology, Baylor College of Medicine, Houston, TX; 2. Psychiatry, Mount Sinai School of Medicine, New York City, NY; 3. Neurosciences, University of California, San Diego, CA; 4. Medivation, Inc., San Francisco, CA.*

Supported By: Funding for this study was provided by Medivation, Inc.

Background: Dimebon is a novel investigational drug that enhances mitochondrial function in the setting of cellular stress with associated increases in cell viability and neurite outgrowth in preclinical studies. In a 1-year double-blind placebo-controlled study of patients with mild-to-moderate AD, Dimebon significantly improved cognition and memory, ability to perform activities of daily living, and behavioral problems compared with placebo (Lancet. 2008;372:207-215). The efficacy of Dimebon by disease severity is reported.

Methods: 183 patients (MMSE 10-24) were randomized to Dimebon, 20 mg three times daily or placebo for an initial 26 weeks. Of these, 134 were reconsented for an additional 26-week double-blind treatment period in their originally randomized group (total treatment, 1 year). Endpoints included the ADAS-cog, CIBIC-plus,

ADCS-ADL, MMSE, and NPI measured at baseline and weeks 12, 26, 39, and 52. Mild and moderate AD were defined, respectively, as baseline MMSE > 18 (n = 94) and ≤ 18 (n = 89). Data are presented by observed-case analysis.

Results: Dimebon-treated patients with mild AD were at or above baseline on all 5 outcome measures at 1 year. Mild AD patients on Dimebon were significantly improved on the ADAS-cog compared to placebo (5.4 points, p = 0.0027) and were numerically improved over placebo on all other endpoints. Patients with moderate AD demonstrated significant improvements compared with placebo on all 5 outcome measures at 1 year. The mean drug-placebo differences for moderate patients at week 52 were: ADAS-cog, 9.7 points, p < 0.0001; CIBIC-plus, 1.2 points, p = 0.0002; ADCS-ADL, 9.1 points, p = 0.0005; NPI, 6.8 points, p = 0.0073; and MMSE, 3.6 points, p = 0.0019. Common adverse events in the Dimebon group (>5% of patients and at least twice the incidence of placebo) included dry mouth, depressed mood/depression and hyperhidrosis. More placebo recipients reported at least one serious adverse event (12% vs 3%).

Conclusion: Dimebon was well-tolerated and improved the clinical course of patients with either mild or moderate disease.

C31

Optimal Loading for Power in Older Men.

S. Mow,[1,3] B. A. Roos,[1,4] D. H. Serravite,[1,2] S. Moore,[1] J. F. Signorile.[1,2]
1. Bruce W. Carter Dept of Veterans Affairs Medical Center, Miami, FL; 2. University of Miami, Coral Gables, FL; 3. Univ of Miami Miller School of Medicine, Miami, FL; 4. Stein Gerontological Institute and Univ of Miami Miller School of Medicine, Miami, FL.

Our earlier work showed that lower-body power improvements due to training are joint-specific. Given these findings, we hypothesized that the loads maximizing power development during upper and lower body high-speed training would vary due to the nature of muscle groups and joints targeted. **PURPOSE**: To determine the load that would maximize power development in older men for each of the muscle groups/joints exercised. **METHODS**: Eighteen men (80.2 ± 4.3 y) participated in the study. The protocol involved two days of maximal strength-testing and two days of power-testing using six pneumatic resistance machines. Power trials were performed using loads of 20-80% of the patient's maximal lift (1RM) for each machine. A two-minute recovery was allowed between loading conditions and loads were randomized, allowing us to determine the optimal load at which power occurred for each exercise. **RESULTS**: The optimal loads that elicited peak power varied according to the joints/muscles being trained. Isolated upper body exercises, triceps pushdown and biceps curls, produced maximal power at the lowest training loads, 30-50%1RM (>20%, 70%; p<0.048) and 40%1RM (>20%, 70%-80%; p<0.032), respectively. Both of these exercises use joints designed for velocity, rather than strength, because of their longer lever systems and smaller musculature. The leg press developed power at a slightly higher load (50%<20%, 70%-80%; p<0.016), most likely due to the larger muscle group and longer lever system associated with the knee joint. The chest press (50%>20%-40%, 70%-80%; p<0.006) and upper-body rowing (50%>20%, 70%; p<0.048) exercise also produced their highest power at 50% 1RM, probably due to the fact that these were multi-joint movements employing a series of levers and accessory muscle groups. Finally, as we expected, the heel raise exercise produced its highest power at a higher load (60%1RM) than any other exercise (60%>20%; p=0.033), because the ankle joint is a short lever designed for force production rather than movement speed. **CONCLUSION**: These results indicate that joints and muscle groups critical to maintaining independence and preventing falls require different loading patterns if their power development during preventative exercise and rehabilitation is to be maximized.

C32

The ACE I/D genotype and improvement in 400-meter walk performance with exercise training in the Lifestyle Intervention and Independence for Elders Pilot (LIFE-P).

T. E. Brinkley,[1] F. Hsu,[1] G. A. Hawkins,[1] S. B. Kritchevsky,[1] M. Pahor,[2] B. J. Nicklas.[1] *1. Wake Forest University School of Medicine, Winston-Salem, NC; 2. University of Florida, Gainesville, FL.*

Supported By: This research was supported by the WFU Claude D. Pepper Older Americans Independence Center (P30 AG21332), and NIH grants R01 AG022376 (LIFE-P) and R01 AG027529-01A1S1.

Background – Prior studies show that the angiotensin converting enzyme (ACE) insertion/deletion (I/D) gene variant interacts with physical activity to affect physical performance in young individuals, with the I allele associated with enhanced aerobic capacity and the D allele associated with enhanced muscular strength. However, data from clinical trials are needed to assess whether this genotype influences functional responses to physical activity in older persons. Purpose – We determined whether the ACE I/D genotype influenced improvement in walking endurance in response to a physical activity intervention in older adults at risk for disability. Methods – Walking endurance, as assessed by a 400-m walk test, and ACE I/D genotype were measured in 267 Caucasian participants (mean age 77 yrs, 66% female) in LIFE-P, a multi-site, randomized controlled trial of a 12-month physical activity (PA) intervention, comprised primarily of walking (~150 min/week), versus a Successful Aging (SA) intervention consisting of stretching, education and social support. Multiple regression was used to determine the association between ACE I/D genotype and change in 400-m walk time after adjusting for gender, clinical site, baseline 400-m walk time, and ACE inhibitor use. Results – The ACE I/D genotype frequencies were 38% II, 42% ID, and 20% DD. At the 6-month visit, 400-m walk time was faster in the PA, compared to the SA, group (p=0.08), and there was a significant interaction between intervention and ACE I/D genotype (II+ID vs. DD, p=0.03). In the PA group, improvement in 400-m walk time tended to be greater in II+ID compared to DD individuals (-37 vs. -14 secs, p=0.14), while in the SA group, 400-m walk time tended to be slower in DD compared to II+ID individuals (+20 vs. -6 sec, p=0.18). Conclusion – These data indicate that the I allele of the ACE I/D gene variant may be a marker for greater improvement in walking performance with exercise training in older adults. These results are consistent with findings in younger adults showing enhanced aerobic capacity in those with the ACE I allele.

C33

A comparison of four screening instruments to detect older patients at risk for short term functional decline, hospitalization and recurrent visits to the Emergency Department.

B. Buurman,[1] J. C. Korevaar,[2] S. E. de Rooij.[1] *1. Geriatrics, Academic Medical Centre, Amsterdam, Netherlands; 2. Clinical epidemiology and biostatistics, Academic Medical Centre, Amsterdam, Netherlands.*

Objectives: to compare four screenings instruments to detect older patients in the Emergency Department (ED) at risk for recurrent visits to the ED, hospitalization and short term functional decline.

Methods: In this prospective cohort study, patients of 65 years and older discharged after a visit to the ED, between December 1st 2005 and December 1st 2006 were included. At admission, four screenings instruments were completed: the Identification of Seniors At Risk (ISAR), Triage Risk Stratification Tool (TRST), Runciman and Rowland. Premorbid functioning was measured with the Katz ADL index and again two weeks after discharge from the ED. Physical functional decline (PFD) was defined as a loss of at least one point on the Katz ADL index two weeks after discharge compared with premorbid functioning. Recurrent visits and hospitalization within one year after the index visit were collected from the hospital information system. Of all patients baseline characteristics and reason of admission were collected.

Results: In total, 381 patients were included with a mean age of 79.1 years. Within one year 24.4 % of discharged patients returned to the ED, 19.2 % of patients were hospitalized and 13.1 % of the patients experienced functional decline two weeks after the ED visit. The TRST and Runciman showed highest sensitivity and Rowland the lowest sensitivity for PFD (0.92; 0.72; 0.38), recurrent visits (0.80; 0.99; 0.24) and hospitalization (0.78; 0.97; 0.23) respectively. The Rowland had highest specificity and the Runciman the lowest specificity for PFD (0.84; 0.07), repeat visits (0.83; 0.04) and hospitalization (0.84; 0.03). The ISAR showed modest sensitivity and specificity for FD (0.66;0.54), recurrent visits to the ED (0.60; 0.54) and hospitalization (0.62; 0.54).

Conclusion: The TRST seems to be the best screening instrument to detect patients at high risk for adverse outcomes. The results also indicate that instruments developed in one country can not be implemented directly in other countries possibly due to differences in organisation of care. The results also suggest, that due to low specificity, further screening of at risk patients might be required before interventions are initiated.

C34

A Comparison of Two Brief Screening Instruments to Detect Cognitive Dysfunction in Older Emergency Department Patients.

C. R. Carpenter, R. W. DesPain, T. N. Keeling, M. P. Rothenberger, M. P. Shah. *Division of Emergency Medicine, Washington University in St. Louis, St. Louis, MO.*

Supported By: Washington University Center for Aging (Goldfarb Patient Safety Grant)

Background: Brief tests to detect occult cognitive impairment in geriatric emergency medicine patients are needed. Prior studies have failed to validate sufficiently sensitive screening instruments in the emergency department (ED).

Objective: To validate and compare the diagnostic test performance of two dementia screening instruments: the AD8 and the Six Item Screener (SIS).

Methods: A cross-sectional convenience sampling was conducted at one urban medical center ED. Eligible subjects were consenting English-speaking patients over age 65-years who had not received potentially sedating medications including anti-emetics, sedative-hypnotics, or narcotic-analgesia. A research assistant administered the criterion standard Mini Mental Status Exam (MMSE) and the AD8. At least 30-minutes later, an emergency physician collected the SIS. When possible, the AD8 was completed by a caregiver rather than the patient. This study was powered to detect a 94% sensitivity with 5% confidence intervals and a 35% cognitive dysfunction prevalence when 247 subjects were enrolled.

Results: Among the 255 enrolled subjects, 46% were male with mean age 76-years and 66% were admitted. Cognitive dysfunction (MMSE ≤ 23) was identified in 36%. The SIS demonstrated superior diagnostic performance with sensitivity 74%, specificity 73%, and AUC 0.813 (95% CI 0.753-0.874) compared with the AD8 sensitivity 49%, specificity 81%, and AUC 0.720 (95% CI 0.651-0.789). Caregivers completed the AD8 in 39% with AUC 0.754 (95% CI 0.652-0.856) in that subset.

Conclusions: Cognitive dysfunction is common among one urban ED geriatric population. Although the SIS appears to be the superior screening tool overall, caregiver administered AD8 may augment the rapid detection of dementia or delirium in non-communicative patients.

C35

Perceptions of Emergency Department Decision Making Among Elderly Patients.

J. H. Han,[1] Z. J. Ramsey,[1] J. D. Pitts,[1] L. Pam,[2] S. F. Simmons,[2] J. F. Schnelle.[2] *1. Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN; 2. Department of Internal Medicine, Vanderbilt University Medical Center, Nashville, TN.*

Background: In recent years, there has been a growing emphasis on soliciting active involvement of patients in the medical decision making process. However, no study has ever characterized elderly patients' role in medical decision making in the emergency department (ED). We sought to determine the extent in which older patients are involved in the decision making process regarding disposition (admission versus discharge) compared to younger patients in the ED setting.

Methods: This pilot study using survey methodology conducted at single tertiary care ED from August 2007 to August 2008 using convenience sampling. ED patients who were ≥65 years old were categorized as the older group and those < 65 years old were categorized as the younger group. Comparisons between the older and younger groups were performed using the Wilcoxon Rank Sum Test for continuous variables and chi-squared analysis for categorical variables.

Results: During the study period, 157 patients were enrolled and of these, 74 (47.1%) were in the older group. The older group were more likely to white (90.5% versus 68.7%, p-value<0.05) compared to younger ED patients. No significant differences in the proportion of females (59.5% versus 49.4%) or admission rates (74.3% versus 68.7%) were observed. Older were less likely to be involved in the disposition decision (52.9% versus 66.3%, p=0.14) compared to younger patients. However, when asked if the emergency physicians could have done a better in providing information regarding why they chose to admit or discharge the patient, only 8.6% and 12.2% responded yes (p = 0.47) in the older and younger groups, respectively. When asked if the physician should be the sole decision maker for dispositions, 35.2% of the patient group and 39.8% of the younger group stated responded yes (p=0.56).

Conclusion: In this pilot study, we observed a trend towards a lower proportion of older ED patients who were involved in the decision making process in regards to disposition compared to younger patients. Though the vast majority of the older and younger groups were satisfied with the information provided by the emergency physician regarding why they were being admitted or discharged, both groups felt that the patient and family members should be involved with the physician in the decision process.

C36

Primary Care Utilization of Frequent Geriatric Users of the Emergency Department.

L. Torres,[1] U. Hwang,[2,3] S. Yang,[1] L. DeCherrie,[3] K. Ornstein,[4] T. Soriano,[4] A. Wajnberg.[4] *1. Mount Sinai School of Medicine, New York, NY; 2. Emergency Medicine, Mount Sinai School of Medicine, New York, NY; 3. Geriatrics, Mount Sinai School of Medicine, New York, NY; 4. Internal Medicine, Mount Sinai School of Medicine, New York, NY.*

Supported By: MSSM Center for Multicultural & Community Affairs Summer Health Services Research Program

Background: It is projected that ED utilization by older adults will increase in the next two decades. Geriatric psychosocial and functional issues frequently go unrecognized in the ED and older patients are at risk of decreased health-related quality of life after an ED visit. Prior studies have shown that lack of access to primary care may influence ED utilization. Objective: To determine factors associated with frequent ED utilization by older adults. Methods: Prospective telephone survey of older adults with ≧4 visits to an urban, tertiary care ED from 12/07-5/08. Inclusion criteria were ≧65 years of age, non-nursing home resident, English/Spanish speaking, and having a working telephone. All patients were screened for cognitive impairment using the Short Portable Mental Status questionnaire; if positive (≧5/10), a surrogate was identified to complete the survey. Data gathered included patient demographics, living situation and support systems, insurance status, self reported health and functional status, and access to primary care providers (PCPs). Results: 105 older adults met inclusion criteria:

40% were interviewed, 25% refused, and 35% were unreachable. Of the 42 interviewed, 67% were female, 55% spoke Spanish, 52% had Medicare/Medicaid, 48% had education ≦8th grade, and 43% lived alone. Participants reported a history of chronic pain (55%), congestive heart failure (24%), stroke (24%), heart attack (22%), and dementia (17%). 64% of participants left their homes 0-4 times/week, usually for medical appointments. The majority (88%) reported having a PCP; 52% of these reported seeing their PCP ≧10 times in the last year; 35% contacted their PCP before a visit to the ED. Of those who did not contact their PCP, 37% reported it was due to problems accessing their PCP (e.g. at night, did not have number), while 32% reported it was an emergency (e.g. no time to wait, called 911). Conclusion: Factors associated with ED use are multifaceted. These results are contrary to previous studies suggesting that frequent ED users may lack access to primary care. Future studies may include surveying geriatric infrequent ED users and having focus group studies to better understand reasons why geriatric patients use the ED.

C37

Using Chief Complaint to Identify a Subset of Elderly Emergency Department Patients with a Very High Admission Rate.

M. A. LaMantia,[1,2] T. F. Platts-Mills,[3] C. M. Khandelwal,[1] C. B. Cairns,[3] J. Busby-Whitehead,[1,2] J. S. Kizer.[1] *1. Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC; 2. Institute on Aging, University of North Carolina, Chapel Hill, NC; 3. Department of Emergency Medicine, University of North Carolina, Chapel Hill, NC.*

Supported By: Supported by: NIA Grant # 2T32AG000272-06A2 and the Hartford Center of Excellence in Geriatric Medicine and Training

Purpose: Prolonged Emergency Department (ED) stays are a common complaint voiced by elderly patients and their families. Shortened ED stays for admitted patients would help address this concern and also decrease ED crowding. We examined admission rates for patients ≥ 75 years sorted by chief complaint, in an attempt to identify a subset of patients for whom an expedited admission process starting at triage might be appropriate.

Methods: We reviewed all ED visits by patients 75 years or older during calendar year 2007. Chief complaints were coded according to the Reason for Visit Classification used by the National Center for Health Statistics. Data on patient disposition was obtained and tabulated for each chief complaint. The 10 most common chief complaints were evaluated to obtain mean admission rates with 95% confidence intervals.

Results: Of 4,874 visitors age 75 or older seen in the ED, 3,189 were admitted (65.4%). For the chief complaints of shortness of breath, chest pain, and stroke, admission rates were 87.3% (95% CI .84 to .90), 87.8% (95% CI .84 to .91), and 93% (95% CI .89 to .97), respectively. Patients with these 3 chief complaints accounted for 19.7% of total ED visits and 26.7% of admissions to the hospital for this age group.

Conclusions: Several common chief complaints identify elderly patients whose admission rate approaches or exceeds 90%. Analysis of additional information available at triage may allow for a more powerful tool for the identification of patients with a very high admission rate. Prospective study of a triage based instrument which could be used to initiate admission for highly likely to be hospitalized patients is needed to determine if such an approach can decrease length of stay for this subset of elderly ED patients.

C38

Characteristics of Frequent Geriatric Users of the Emergency Department.

S. Yang, A. Wajnberg, L. Torres, L. DeCherrie, K. Ornstein, T. Soriano, U. Hwang. *Emergency Medicine, General Internal Medicine & Geriatrics, Mount Sinai School of Medicine, New York, NY.*

Supported By: Mount Sinai Summer Research Fellowship

Background: Emergency Department (ED) crowding is a growing problem and is associated with adverse health outcomes and reduced quality of care. As the population ages, it is projected that older adults will increase ED utilization and crowding. Characteristics of older adults that frequently use the ED have not been well studied. **Objective**: To describe characteristics of frequent geriatric ED users. **Methods**: Retrospective descriptive cohort study of geriatric patients (≥65 years) at an urban, academic, tertiary care ED between 12/08-7/08. "Frequent" use was defined as ≥ 4 visits over a 6-month period. Demographic (age, gender, race) and clinical (time of visit, emergency severity index (ESI), chief complaint, diagnosis, if admitted, death in the ED) data were extracted from the ED medical record system. ED diagnoses were categorized into sixteen diagnostic systems: allergic, cardiac, dermatologic, endocrine/metabolic, gastrointestinal, urogenital, hematologic/oncologic, infectious, musculoskeletal, neurological, ophthalmologic, psychiatric, pulmonary, renal, trauma, and other. Univariate descriptive statistics and bivariate analyses were completed. **Results**: Between 12/24/07-7/21/08, a total of 8,520 geriatric ED visits were made by 5,718 unique patients. Mean age was 78 years (sd 9); 61% were female; 42% were White, 24% Black, 29% Hispanic, and 2% Asian. Of all geriatric ED patients, 4.7% were frequent users, and these patients accounted for 17.3% of all geriatric visits. A comparison between frequent and infrequent users found no significant difference in age, gender, admission and death rate. Frequent users were significantly more likely to be Black [OR point estimate =3.75 (95% CI 2.66, 5.27)] or Hispanic [OR point estimate =4.21 (95% CI 3.05, 5.82)] (when compared to White), and less acute on the ESI [2.79 vs. 2.68, p=0.02]. Frequent users were also more likely to have problems related to cardiac [OR point estimate =1.45 (95% CI 1.05, 2.01)] or pulmonary conditions [OR point estimate =1.92 (95% CI 1.35, 2.71)] when compared to infrequent users. **Conclusions**: Frequent geriatric users account for a disproportionate number of ED visits. Identifying characteristics of frequent geriatric ED users and studying reasons why patients use the ED may help target interventions or identify areas for future research to improve patient care or alleviate ED crowding.

C39

Correlates of physical disability in older Taiwanese adults: a population-based study.

F. Lu,[1,2] Y. Lee,[1] D. Chan.[1,3] *1. Department of Geriatrics and Gerontology, National Taiwan University Hospital, Taipei, Taiwan; 2. Institute of Health Policy and Management, National Taiwan University, Taipei, Taiwan; 3. College of Medicine, National Taiwan University, Taipei, Taiwan.*

OBJECTIVE: To identify factors associated with physical disability in older Taiwanese adults.

METHODS: Cross-sectional analysis of data from a nationally representative sample of 2,021 community-dwelling adults age 65 or older who participated in the Taiwan Health Interview Survey in 2001. Data of basic demographics (age, gender, marital status, education, and living area), medical comorbidities (heart disease, hypertension, stroke, Hyperlipidemia), and common geriatric problems (chronic pain, depression, and visual impairment) were collected by trained interviewers. Physical disability was defined by self-reported difficulty with activities of daily living (ADLs), or with two mobility-related tasks (walking one kilometer and climbing one flight of stairs). Multiple logistic regression was used to estimate the association between risk factors and physical disability.

RESULTS: Of the study population, 48.6% were female. Mean age of the subjects was 73.4 years. Prevalence of ADL disability and mobility disability were 15.1% and 50.2%, respectively. Older age, stroke, and diabetes were associated with ADL and mobility disability. Female gender and living in urban area were associated with greater risk of mobility disability but not ADL disability. Hypertension and hyperlipidemia were not associated with higher risk of disability. Heart disease was associated with 50%- increased risk of mobility disability but not ADL disability. After adjustment for demographics and medical comorbidities, visual impairment was associated with a 2-fold increased risk of ADL and mobility disability ($p<0.0001$). Chronic pain was associated with a 2.5- to 4.5-fold increased risk of ADL and mobility disability ($p<0.0001$). Depressed mood was associated with a 6- to 8-fold increased risk of ADL and mobility disability ($p<0.0001$).

CONCLUSIONS: Geriatric problems were associated with greater risk of physical disability than most medical comorbidities. Clinicians should be aware and address these problems when caring for disabled elders. Additional studies to test the causal relationship are warranted.

C40

Incidence of Potentially Inappropriate Medication Use Among Indiana Medicaid Nursing Home Population with Dementia.

J. Thomas ,[1,2] X. Yang,[1,2] A. Modi,[1,2] M. Weiner,[3,4] B. Craig.[2,5] *1. School of Pharmacy, Purdue University, West Lafayette, IN; 2. Regenstrief Center for Healthcare Engineering, Center for Health Outcomes Research and Policy, Purdue University, West Lafayette, IN; 3. School of Medicine, Indiana University, Indianapolis, IN; 4. Regenstrief Institute, Inc, Indianapolis, IN; 5. Department of Statistics, Purdue University, Indianapolis, IN.*

Supported By: Investigator Initiated Grant, IIRG-07-60074, Alzheimer's Association

OBJECTIVE: Prevalence of potentially inappropriate medication (PIM) use among older adults has often been examined. Yet, rates of new PIM use over time, or incidence, which better reflect dynamics of prescribing, have rarely been determined. The 2003 Beers criteria included specific criteria related to cognitive impairment but reports applying the criteria to populations with dementia are rare. One-year incidence of PIM use among Indiana Medicaid beneficiaries with dementia, aged 65 years or older and residing in nursing homes was determined.

METHODS: A retrospective cross-sectional analysis was conducted using Indiana Medicaid claims and enrollment files. Sample inclusion criteria were 65 or more years of age, with dementia, continuous Medicaid eligibility from October 2004 through December 2005, and receiving nursing home services from January 2005 through December 2005. Individuals were excluded if they received any PIM in the 3 months prior to January 2005. Dementia was identified using 26 ICD-9 diagnosis codes determined in a prior study as specific for dementia. PIM use was identified based on each of four categories in the Beers 2003 criteria, i.e., inappropriate drug choice, drug and disease interaction, excess dosage, or excess duration. One-year incidence of PIM use and days of PIM use were determined.

RESULTS: A sample of 3,027 individuals passing inclusion and exclusion criteria were identified. The sample was 78% female, 88% white, and had a mean age of 84 years. One-year incidence of any PIM use was 47%, 95% C.I. 45.5 – 49.1. The mean duration of PIM use was 97 days, 95% C.I. 91.1 – 102.7 and 25% of individuals took PIM for at least 180 days.

CONCLUSIONS: Incidence of PIM use was high among older Indiana Medicaid beneficiaries with dementia residing in nursing homes. Assessing quality of care would require more information about indications for each drug, but the data may reflect need for dissemination of best practices. Active decision support, not just lists of explicit criteria for PIM, may be needed to assist clinicians in long-term care environments.

C41

Falls Risk Factors Differ Among Prior Fallers and Non-Fallers.

K. A. Faulkner,[1] S. A. Studenski,[1] M. C. Nevitt,[3] D. P. Landsittel,[2] K. E. Ensrud,[4] M. G. Donaldson,[3] J. A. Cauley.[1] *1. University of Pittsburgh, Pittsburgh, PA; 2. Duquesne University, Pittsburgh, PA; 3. SF Coordinating Center, San Francisco, CA; 4. VAMC & University of Minnesota, Minneapolis, MN.*

Supported By: This work was funded by NIH grants: AG05407, AR35582, AG027576-22, AG05394, AG005394-22A1, AR35584, AR35583, AG027574-22A1, including the Pittsburgh Claude D. Pepper Center (AG024827).

Purpose: To compare risk factors for falls among prior fallers and non-fallers.

Methods: Participants were 8,378 community-dwelling women (mean age=71 years, SD=3) enrolled in the Study of Osteoporotic Fractures, including 2,462 who had fallen in the past 12 months and 5,916 who had not fallen. Potential risk factors were assessed—geriatric conditions, medications, physical function, and lifestyle factors. Number of falls (dependent variable) was self-reported prospectively every four months over four years. Relative Risks (RR) were estimated using Poisson regression with Generalized Estimating Equations. Step-wise building of a multivariate model was performed. All factors were minimally adjusted for age and clinic. A $p<0.05$ denoted significance. Population Attributable Risk (PAR) was calculated.

Results: Prior fallers fell more than twice as often as prior non-fallers (776 vs. 328 per 1,000 woman-years). Risk factors common to prior fallers and non-fallers included short height (RR=0.87 and 0.90, per 5 inches), fear of falling (RR=1.15 and 1.20), benzodiazepine use (RR=1.15 and 1.12), antiepileptic use (RR=1.92 and 1.41), and self-reported number of IADL impairments (RR=1.10 and 1.11, per item). Risk factors unique to prior fallers included: orthostatic hypotension (RR=1.21); poor visual acuity (RR=.86, per 2SD); fair/poor self-rated decline (RR=1.26); spending 0-2 (RR=1.21), 6-10 (RR=1.21) and 11+ hrs/wk (RR=1.18) on household chores vs. 3-5; being in the fourth quartile physical activity (RR=1.25) vs. first; and good balance vs. poor (RR=.79). Risk factors unique to non-fallers included age 85+ years (RR=1.32) vs. 65-69, trouble with dizziness (RR=1.14), fast walking speed (RR=1.24 per 2SD), and slow chair-stand time (RR=1.20 per 2SD). In prior fallers, fair/poor balance (24%), fear of falling (18%), few (0-2) or many (10+) hrs/wk doing household chores (17%), had the highest PAR. In prior non-fallers, fear of falling (13%), self-reported IADL impairment (13%), and dizziness (5.7%) had the highest PAR.

Conclusion: Poor physical function is a risk factor for falls in both fallers and non-fallers. Most falls in prior fallers are associated with poor physical function and activity. In prior non-fallers, most falls are associated with fear of falling.

C42

Identifying Community-living ADL-disabled Adults who need Full-time Help.

H. Xu,[2,3] L. P. Sands.[1,3] *1. School of Nursing, Purdue University, West Lafayette, IN; 2. Department of Statistics, Purdue University, West Lafayette, IN; 3. Regenstrief Center for Healthcare Engineering, Purdue University, West Lafayette, IN.*

Supported By: Regenstrief Center for Healthcare Engineering at Purdue University and investigator-initiated grant(IIRG-06-27339)from the Alzheimer's Association.

Purpose: Older adults living in the community with activities of daily living (ADL) disabilities rely on human help to complete these

basic activities needed for health and survival. We classified ADL disabled older adults to differentiate those who require part versus full-time help. The classification was validated using actual amount of help received and self or proxy reports of insufficient ADL care.

Methods: Using interviews from the 1994, 1999, and 2004 National Long-term Care Survey, we conducted a latent class analysis of 6511 subjects to determine classifications of older adults based on number of ADL disabilities (1-5) and level of cognitive impairment (none to mild, moderate and severe) as determined by a mental status screen or need for proxy respondent. We compared the weekly hours of help between classes. Using logistic regression with an autoregressive correlation structure to account for repeated observations, we adjusted for potentially explanatory demographic, economic, and health characteristics to determine class differences in risk for reporting insufficient ADL help.

Results: Two classes of individuals were identified. Those in Class 1 had five ADL dependencies, proxy respondents, or four ADL dependencies and mild to severe cognitive impairment. Class 2 included all others. The average weekly hours of human help received by subjects in Class 1 was 57.1 (95% CI=54.1-60.0) compared to 12.7 (95% CI=11.9-13.4) for those in Class 2. Class 1 subjects who reported they received no ADL or IADL help were 5.8 times (95%CI=3.9-8.4) more likely than Class 2 subjects to report insufficient help for ADL disabilities. Class 1 subjects who received part-time help were 2.3 times (95% CI=1.8-2.7) more likely, and those receiving full-time help (40 + hours per week) were only 1.4 times (95% CI=1.0-1.9) more likely to report insufficient help for their ADL dependencies compared to those in Class 2.

Conclusion: Community living disabled older adults who have no cognitive impairment, but 5 ADL dependencies, or mild to severe cognitive impairment and 4 ADL dependencies apparently need full time help. Informing caregivers of the amount of help typically required by these patients may help caregivers plan ADL care and may prevent unmet need for ADL disabilities and its health consequences.

C43

Is long-term use of Anticholinergics a Risk factor for developing MCI and Dementia?

M. A. Boustani,[1] N. Campbell,[2] W. Tu.[1] *1. Medicine, Indiana University, Indianapolis, IN; 2. Wishard Health Services, Indianapolis, IN.*

Supported By: The study was supported by the Paul A. Beeson Career Development Award in Aging (K23 AG 26770-01) from the National Institute on Aging, the Hartford Foundation, The Atlantic Philanthropy, and the American Federation of Aging Research.

BACKGROUND: Despite that older Americans are facing two devastating epidemics of chronic diseases and dementia and are thus exposed to anticholinergics that might negatively affect their dementia risk, there have been few studies that evaluate the association between chronic exposure of anticholinergics and the development of dementia or mild cognitive impairment (MCI).

OBJECTIVE: Evaluate the association between previous exposure to anticholinergics and the development of dementia or MCI.

DESIGN: We created a nested Case-Control study by merging the cognitive assessment of more than 3600 older primary care patients enrolled in the Indianapolis dementia screening and diagnosis study with their one year-drug dispensing data captured by the Regenstrief electronic medical record system, one of the first and the most comprehensive electronic medical record in the world.

CASE: 129 persons with dementia and 93 persons with MCI who were identified via active dementia screening and diagnostic processes.

CONTROL: 3128 persons who screened negative for dementia.

EXPOSURE: at least three month with a total Anticholinergic Cognitive Burden (ACB) score of at least 3 points.

RESULTS: The mean age of our entire cohort was 73.4 year, 67% were female, 65% were African Americans, and the mean ACB score was 1.9 (SD 2.4).

After Adjusting for age, race, gender and number of chronic conditions, the odd ratio (OR) for having MCI was 2.44 (95% CI; 1.46, 4.09) and the OR for having dementia was 1.27 (95% CI; 0.76, 2.13)among primary care patients who were exposed to at least three months of medications with at least a total ACB score of 3 points.

CONCLUSION: Exposure to medications with a high anticholinergic cognitive burden may be a risk factor for developing MCI.

C44

Nocturia prevalence and association with chronic medical illness, 2-year mortality in older Puerto Rican men.

A. L. Davila Ramon,[3] A. Garcia,[3] M. P. FitzGerald,[1] A. Palloni,[3] L. Tong,[2] R. Durazo.[1] *1. Loyola University Medical Center, Maywood, IL; 2. Loyola University Chicago, Chicago, IL; 3. University of Puerto Rico, San Juan, PR.*

Supported By: National Institutes of Health

Purpose: Epidemiological surveys from several countries have established that the prevalence of nocturia increases with age, is associated with several chronic medical illnesses, and may be a predictor of increased risk of death within 5 years. No population-based studies have described these variables in Latino men, in whom diabetes and hypertension are highly prevalent. Our objectives were to determine whether similar relationships between nocturia, chronic medical illness and mortality were present in a population of older Latino men.

Methods: We used data from the Puerto Rican Elderly: Health Conditions (PREHCO) study, a multi-stage, stratified representative sample of Puerto Rican adults aged 60 and older in 2002. 5,336 interviews were carried out, with 93.9% overall response rate. The second wave of the study initiated in 2004, completed in the summer of 2008. A multistage probabilistic sample by clusters was used and a weighting factor for each individual was calculated based on a post-stratification by gender and age group. Respondents indicated history of fall in prior year and whether or not they usually urinated 3+ times nightly. Both univariate and multivariate logistic regression models were used to study the effect of chronic medical illness on the prevalence of nocturia after adjusting for age and BMI. We explored the effect of nocturia on 2-year mortality using both univariate and multivariate logistic regression models.

Results: 1496 men were included, of whom 586 (37.9%) urinated 3+ times nightly. Multivariate logistic regression indicated that after controlling for covariates, in contrast to other studies nocturia prevalence increased with age and with diagnosis of DM (OR 1.55 (1.21, 2.00)) or history of heart attack (OR 1.42 (1.02, 1.99)) but not with diagnosis of HTN, depression or with increasing BMI. 220 (12.9%) were deceased at the time of 2nd survey: the presence of nocturia at baseline increased the odds of mortality at 2 years by 59% (OR 1.59 (95% CI: 1.16-2.17; p= 0.003).

Conclusion: As found in other population-based studies, nocturia (3+ nightly) is highly prevalent in older Puerto Rican men and predicts significantly increased 2-year mortality. The presence of nocturia (3+) may be a clinically useful marker of frailty.

C45

Falls predict 2-year mortality in older Puerto Ricans.

M. P. FitzGerald,[1] A. Garcia,[3] A. L. Davila Ramon,[3] A. Palloni,[4] L. Tong,[2] R. Durazo.[1] *1. Loyola University Medical Center, Maywood, IL; 2. Loyola University Chicago, Chicago, IL; 3. University of Puerto Rico, San Juan, PR; 4. Northwestern University, Chicago, IL.*

Supported By: National Institutes of Health

Purpose:

Falls continue to be a major concern in older adults, both because of their immediate morbidity and also as a marker of frailty. We studied the relationship between falls, chronic medical illness and 2-year mortality in a population-based representative sample of older Puerto Ricans.

Methods: We used data from the Puerto Rican Elderly: Health Conditions (PREHCO) study, a multi-stage, stratified representative sample of Puerto Rican adults aged 60 and older in 2002. 5,336 interviews were carried out, with 93.9% overall response rate. The interview consisted of a series of questionnaires on health behaviors, cognition, health status, socioeconomic and demographic characteristics, as well as anthropometric measures. The second wave of the study initiated in 2004 and was completed in the summer of 2008. A multistage probabilistic sample by clusters was used and a weighting factor for each individual was calculated based on a post-stratification by gender and age group. This weighting factor is used in all analyses. Respondents reported whether they had been diagnosed with diabetes mellitus (DM), hypertension (HTN), heart attack, stroke, chronic pulmonary disease; had fallen in the last year, had previously fractured their hip.

Results: There were 3974 respondents, of whom 1327 (weighted percent: 31.4%) had at least one fall in the prior year and . Multivariate logistic regression found significant predictors of falls included female gender, increasing age, diagnosis of DM (OR 1.39 (1.19, 1.63)), prior heart attack (OR1.38 (1.11, 1.72)), depression (OR 1.78 (1.49, 2.12)) and current smoking (OR 1.78 (1.49, 2.12)). Respondents who had a fall within the prior year had 42% increased odd of death within 2 years (95% CI 1.17 - 1.71). History of hip fracture was associated with a tripling of the odds of death within 2 years (OR 3.45, 95% CI 2.37-5.02). Other significant predictors of death within 2 years included increasing age, BMI <25, diabetes, depression and history of heart attack.

Conclusion: We confirm the association between falls, hip fracture and mortality in a sample of older Puerto Ricans.

C46

Life-Space as a Predictor of Severe Disability.

R. M. Allman,[1,2] P. Sawyer,[2] C. J. Brown,[1] J. M. Roseman.[2] *1. Birmingham/Atlanta VA GRECC, Birmingham, AL; 2. University of Alabama at Birmingham, Birmingham, AL.*

Supported By: National Institute on Aging

Background: Most gerontological research has focused on disability related to specific activities, such as bathing or transferring. Life-space assessments may reflect early changes in mobility that precede development of disability in specific activities of daily living (ADLs).

Purpose: To assess the ability of life-space mobility to predict severe disability over 6 years.

Methods: Life-space mobility reflects distance, frequency and independence of movement during the month prior to the assessment. Scores range from 0 -120, higher scores indicate greater mobility. Using data from the UAB Study of Aging, we examined the association of four baseline life-space categories (1=0-29; 2=30-59; 3=60-89; 4=90-120) with subsequent severe disability, defined as self-reported inability to perform two or more activities of daily living (ADLs) (bathe, dress, transfer, eating, toileting) or nursing home placement. In-home baseline interviews assessed life-space and ADLs with follow-up status determined annually through telephone follow-up interviews. Persons without severe disability at baseline and with at least one follow-up interview were eligible for the analysis. Cox Regression analysis was used to predict the time to development of severe disability. Participants were censored at the first report of severe disability or death.

Results: 937 persons provided data for analysis (average follow-up=5 years). Mean age of the sample was 75.2 (SD=6.6); 50% African American; 49% male; 2.2 comorbidities. Over 6 years, 128 (13.7%) developed severe disability. Of these 62/128 (48.4%) died after development of the disability. Of 732 never reporting severe disability, 189 (25.8%) died. There was a strong association between baseline life-space category with subsequent incident severe disability: 45.6% in category 1; 23.1% in category 2; 5.4% in category 3; and 2.1 in category 4 (p<.001). Cox regression analysis controlling for age, race, gender, comorbidity, and ADL difficulty at baseline showed hazard ratios of severe disability of 29.3 for Category 1 (p<.001); 12.5 for Category 2 (p<.001) and 2.9 for Category 3 (p=.05).

Conclusions: Life-space mobility predicts severe disability over six years.

C47

How Late Is Too Late For Change?

R. E. Meyer,[1] A. B. Newman,[2,3] S. A. Studenski,[3] C. Rosano.[2] *1. University of Pittsburgh School of Medicine, Pittsburgh, PA; 2. Epidemiology, University of Pittsburgh Medical Center, Pittsburgh, PA; 3. Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA.*

Supported By: The Health ABC Study was supported by NIA contracts N01-AG-6-2101, N01-AG-6-2103, and N01-AG-6-2106. The research reported on this abstract was supported by NIH grant T35 AF026778.

Background: Numerous studies have examined the associations between behavioral risk factors and functional decline and disability with aging. Few studies have focused on the effect of late-life changes in behavioral risk factors on subsequent functional decline and development of disability.

Goal: Investigate the association between late-life changes in smoking behavior and changes in gait speed over a five year period.

Methods: The Health, Aging and Body Composition Study (Health ABC) is an on-going, eleven-year, prospective cohort study of 3,075 community-dwelling elders (48% male, 41% black) aged 70-79 years at study entry (baseline). Based on smoking habits reported at baseline and at year five, participants were grouped into three risk groups: smokers (including relapsed smokers), past smokers who had changed their smoking habits and were not smoking by year five, and those who had never smoked. Gait speed change was examined as continuous (annualized change calculated by subtracting the baseline value from the year five value, divided by five) and as dichotomous, using previously published cutoff for poor function: low gait speed (<1.0m/sec). Multivariable regression models were adjusted for age, race, gender, education, baseline level of the outcome, baseline level of the risk factor, and other relevant confounders indicating health status (pulmonary disease, cardiovascular diseases, diabetes, and osteoarthritis).

Results: A total of 2,315 participants (80.0% of initial sample) remained in the study through the 5-year follow-up. Compared to those who had never smoked, the probability of walking at slow gait was 44% greater for those who had previously smoked and had stopped smoking by year 5 (OR [95%CI] and p value: 1.44 [1.11-1.88], p=0.006) and 89% greater for those who had continued to smoke: (1.89 [1.099-3.250], p= 0.021). Estimates were independent of age race, gender, other confounders and of baseline gait speed. Results were similar when gait speed was used as a continuous variable.

Conclusions: Our results suggest that late-life changes in smoking habits could impact changes in function in very old adults and highlight the relevance of life-style habit modification even late in life.

C48

SPEED REGULATION IN A COHORT OF OLDER DRIVERS.

R. Marottoli,[1,2] K. Araujo,[1] P. Peduzzi.[2] *1. Internal Medicine, Yale University, New Haven, CT; 2. VA Cooperative Studies Program Clinical Epidemiology Research Center, VA CT, West Haven, CT.*

Supported By: Supported By: Claude D. Pepper Older Americans Independence Center at Yale University

Background: The common perception is that older drivers tend to drive too slowly. However few studies have commented upon speed regulation.

Methods: Participants were drawn from a cohort of older drivers who agreed to undergo an on-road assessment in a dual-brake equipped vehicle on a route with a range of low, medium, and high traffic density roads. Assessments were performed by specially trained evaluators and rated on a 36-item scale derived from the Connecticut Department of Motor Vehicles on-road evaluation. One of the items assessed was speed regulation.

Results: Of 518 participants with complete data, 319 (62%) were rated as having problems with speed regulation. Of the 319, 291 (91%) were deemed too fast (at least 10 miles per hour above the posted speed limit for road type), whereas only 7 (2%) were driving too slow (≥ 10 mph below posted speed limit). Evaluators did not specify speeds for the remaining 21 (7%) participants.

Conclusions: While the common perception is that older individuals drive too slowly, in this community-living cohort most individuals were noted to have speed regulation problems on a road test and the vast majority of these were rated as driving too fast. Further investigation is needed to determine possible explanations for the findings (such as keeping up with the flow of traffic), as well as whether drivers were exceeding their capabilities or road conditions.

C49

Influence of Nursing Home Characteristics on Prescription of Osteoporosis Medications in Patients with Fractures.

S. Parikh,[1,2] J. Avorn,[1] H. Mogun,[1] S. H. Daniel.[1,3] *1. Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women's Hospital, Boston, MA; 2. Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, MA; 3. Division of Rheumatology, Brigham and Women's Hospital, Boston, MA.*

Supported By: Dr Parikh supported by T32 AG023480-05

Dr. Solomon is supported by NIH grants (AR-055989 and AR-047782).

Purpose: Osteoporosis is highly prevalent in nursing homes (NHs). Medications that increase bone mineral density have low rates of utilization in this population. Furthermore, prior research finds few patient characteristics predictive of treatment. Organizational characteristics have been shown to influence the use of other medication classes in NHs, such as antipsychotics, and benzodiazepines. The influence of organizational characteristics on prescribing of osteoporosis medication with often complex instructions has not been well characterized. We studied the NH predictors of elderly patients admitted to a NH after a fracture.

Design: Cohort study

Method: Pharmaceutical claims data from a state-run drug assistance program were linked to Medicaid and Medicare data from 1999-2004. We identified patients with hip, wrist and humeral fractures and followed for a 12 month period. These data were then linked to individual nursing homes from the Online Survey, Certification and Reporting (OSCAR) database of CMS. We restricted the analysis to NH's with at least 10 patients in the cohort. Possible NH level correlates of receiving osteoporosis treatment (bisphosphonates, raloxifene, oral and transdermal estrogen-containing hormone therapy or calcitonin) were assessed in a multivariate logistic regression model using the generalized estimated equation to account for clustering within individual NHs.

Results: Of the 3204 post-fracture patients identified from 180 nursing homes, 12% were prescribed an osteoporosis medication during the period of interest. There was a wide variation in treatment between individual nursing homes (0-65%). Nursing home characteristics that did not significantly associated with treatment included: for profit status versus not-for-profit (OR 1.07 95%CI 0.80, 1.43), low occupancy rate (≤ 75% vs. > 75%) (OR 1.46 95%CI 0.92, 2.31), smaller bed size (≤ 250 versus >250) (OR 1.46, 95%CI 0.53, 4.03) and being a member of a chain (OR 0.96 95%CI 0.72, 1.28)

Conclusion: Nursing home characteristics do not predict pharmacological treatment of osteoporosis. Further studies of osteoporosis prescribing in the NH need to consider other types of variables (i.e., quality measures) as possible correlates of prescribing.

C50

Prevalence of and Comorbidity Associated with Chronic Kidney Disease (CKD) in the Nursing Home (NH) Population.

W. M. McClellan,[1] J. G. Ouslander,[2] L. Lei,[3] B. D. Bradbury,[3] A. Sciarra,[3] B. Resnick.[4] *1. Emory University, Atlanta, GA; 2. University of Miami Miller School of Medicine at Florida Atlantic University, Boca Raton, FL; 3. Amgen, Inc., Thousand Oaks, CA; 4. University of Maryland School of Nursing, Baltimore, MD.*

Supported By: Amgen Inc

<bold>Purpose:~~<\>> CKD is common in older people, and has important implications for management of many conditions. Comorbidity can further complicate clinical management. This study was designed to describe the prevalence of CKD and associated comorbidity among NH residents.~~

~~<bold>Methods:~~<\>> This was a cross-sectional study of residents of 82 geographically representative NHs. Residents for whom consent was obtained underwent a record review, clinical assessment, and blood and urine collections. Stage of CKD was based on the MDRD equation: no CKD (eGFR > 60 mL/min/1.73m^2), Stage 3a (45-59), Stage 3b (30-44), and Stage 4 (< 30).

<bold>Results:~~<\>> Consent was obtained from 847 of 1,626 residents screened; 32 were ineligible and 21 dropped out; complete data were available for 794. CKD was present in 393 (49%). Key results are illustrated in the Table.~~

~~<bold>Conclusions:~~<\>> CKD was present in close to half of the NH population studied. Cardiovascular comorbidity was very common in residents with CKD, and increased in prevalence with increasing severity of CKD. These findings have important implications for primary care clinicians in the NH setting for evaluation, monitoring, and consideration of various therapeutic interventions.

resident Characteristics	Overall (N=794)	No CKD (N=401)	Stage 3a CKD (N=185)	Stage 3b CKD (N=156)	Stage 4 CKD (N=52)	p-value
Age, mean (SD)	83.1 (8.3)	82.0 (8.3)	83.5 (7.8)	84.8 (8.5)	84.9 (8.8)	<0.001
Female	558 (70%)	260 (65%)	144 (78%)	112 (72%)	42 (81%)	0.005
Caucasian	687 (87%)	344 (86%)	165 (89%)	135 (87%)	43 (83%)	0.7
African American	68 (9%)	44 (11%)	11 (6%)	7 (5%)	6 (12%)	
Creatinine clearance (mL/min), mean (SD)		64.6 (27.5)	43.6 (14.8)	33.4 (12.2)	23.7 (8.3)	<0.001
Hemoglobin (g/dL), mean (SD)		12.5 (1.4)	12.1 (1.4)	11.7 (1.6)	11.7 (1.6)	<0.001
Anemia	397 (50%)	169 (42%)	94 (51%)	103 (66%)	31 (60%)	<0.001
Cancer	128 (16%)	64 (16%)	30 (16%)	32 (21%)	2 (4%)	0.6
Congestive heart failure	257 (32%)	94 (23%)	61 (33%)	75 (49%)	27 (52%)	<0.001
Coronary heart disease	385 (49%)	179 (45%)	83 (45%)	90 (58%)	33 (64%)	<0.001
Diabetes Mellitus	274 (35%)	113 (28%)	66 (36%)	72 (49%)	23 (44%)	<0.001
Dementia	383 (48%)	189 (47%)	98 (53%)	71 (46%)	25 (48%)	0.9
Depression	480 (61%)	236 (59%)	104 (56%)	108 (70%)	32 (62%)	0.09
Dyslipidemia	283 (36%)	138 (34%)	57 (31%)	70 (46%)	18 (35%)	0.14
Hypertension	667 (84%)	328 (82%)	158 (85%)	135 (87%)	46 (89%)	0.06
Stroke	203 (26%)	111 (28%)	41 (22%)	37 (24%)	14 (27%)	0.4
5+ comorbidities	517 (65%)	227 (57%)	120 (65%)	125 (81%)	45 (87%)	<0.001

C51

Caregivers of Elderly with Cancer: Can Intervention before Hospice affect Quality of Life?

A. Diller,[1] S. Sanchez-Reilly,[1,2] E. Wittenberg-Lyles.[3,1] *1. The University of Texas Health Science Center at San Antonio, San Antonio, TX; 2. GRECC, South Texas Veterans Health Care System, San Antonio, TX; 3. University of North Texas, Denton, TX.*

Supported By: Geriatric Academic Career Award (GACA), Medical Students Teaching in Aging Research (MSTAR) Program (NIA, AFAR)

Background: The increasing incidence of cancer in the elderly creates a burden on family caregivers (FCG), especially as patients approach the end-of-life. FCG provide care to terminally-ill elders with little emotional or psychological support, often leading to negative consequences. Early and continuous palliative care (PC) intervention throughout the duration of a chronic illness, such as cancer, may assist FCG transitioning to the terminal stages of cancer when their elderly loved ones are placed under hospice care. However, there has been little research that documents the effectiveness of PC services as an early end-of-life intervention.

Objective: To evaluate if early PC preceding hospice improves outcomes in older advanced cancer patients and FCG when compared to subjects and FCG with no previous PC exposure.

Methods: Prospective study of FCG of hospice-enrolled elders with two arms: previous exposure to PC vs. not. All FCG cared for subjects >65 with primary diagnosis of advanced, terminal cancer. Previously validated instruments assessed caregiver quality-of-life (QOL), overall satisfaction with patient care, and risk for complicated bereavement. FCG were followed for 2 weeks.

Results: 26 caregivers surveyed, with 8 (31%) exposed to a PC consultation prior to hospice and 18 (69%) with hospice care only. The mean age for patients was 76.2 years; FCG was 56.9 years. 88% of FCG were female. FCG who received PC consults before hospice reported higher QOL than FCG who did not have PC (6.9 vs. 5.3, highest is 10; p=0.05). The bereavement risk index correlated significantly with age (p=0.01).

Conclusions: This study demonstrated significant difference in QOL between caregivers of elders who had exposure to PC prior to hospice and caregivers with hospice care only. While the results are limited by small sample size, significant findings suggest that caregivers are impacted when elders receive PC prior to hospice. Future multi-site and larger sample studies are needed to evaluate the impact of early PC in caregivers of terminally-ill older adults.

C52

Preferences for Palliative Care Among Older Adults and Their Proxy Decision Makers: The Tipping Point.

S. M. Parks,[1] L. Winter,[2] M. Rose,[2] R. Myers,[3] A. Santana,[1] B. Parker,[2] J. Diamond.[1] *1. Family and Community Medicine, Thomas Jefferson University, Philadelphia, PA; 2. College of Health Professions, Thomas Jefferson University, Philadelphia, PA; 3. Department of Medical Oncology, Thomas Jefferson University, Philadelphia, PA.*

Supported By: NINR/NIH, R21 NR010263-02

Proxy decision makers are often called upon to make difficult end of life decisions on behalf of a family member or friend. The choice for palliative care is often made late in the course of illness. The purpose of this study was to help clarify when older people and their proxies would chose a palliative care treatment option. A 40 minute telephone survey was conducted first with 100 older participants and next with a proxy they named. Characteristics of the older participants were: 73% female, mean age 78.8, 62% white, and 36% African American. The proxies were: 73% female, mean age 60.2, 57% white, and 34% African American. Both the older participant and proxy were presented hypothetical illness scenarios using a modified version of the Life Support Preferences Questionnaire. Both were asked to indicate whether palliative care would be their preferred treatment option for each illness scenario. (See Table 1)

The average number of older persons and proxies who selected palliative care for the first three illness scenarios vs. the last three illness scenarios was compared. For the older persons, there was no statistical difference in selection of palliative care between the two illness scenario groups. (p=0.14) For the proxies, there was a statistically significant difference between the two illness scenario groups. (p=<0.0001) Thus, the tipping point for proxy decision makers occurs at the last three illness scenarios, cancer with or without pain and coma. This tipping point appears to be when the illness scenario is something more commonly thought of as a terminal condition. Perhaps education targeting proxy decision makers regarding the terminal nature of serious, chronic conditions, such as Alzheimer's dementia, would improve the acceptability of palliative care for proxy decision makers.

Table 1. Percentage selecting palliative care as treatment option

Hypothetical Illness Scenario	% of older persons selecting palliative care for themselves	% of proxies selecting palliative care for their named elder
COPD	72%	63%
Moderate stroke	78%	68%
Alzheimer's disease	80%	69%
Cancer without pain	78%	80%
Cancer with pain	83%	86%
Coma for 6 weeks post stroke	84%	93%

C53

EFFECT OF OXIDATIVE STRESS ON COX2/PGE2 EXPRESSION AND SURVIVAL IN OSTEOBLASTS.

A. P. Edwards,[1] X. Liu,[2] S. Yao,[2] A. Kirschenbaum,[3] A. C. Levine.[2] *1. Mount Sinai School of Medicine, New York, NY; 2. Endocrinology and Metabolism, Medicine, Mount Sinai School of Medicine, New York, NY; 3. Urology, Mount Sinai School of Medicine, New York, NY.*

Supported By: AFAR (MSTAR program)

Age-related bone loss correlates with oxidative stress, and is a significant cause of morbidity and mortality in older adults. COX2 and its end product PGE2 mediate bone formation and remodeling in response to stress. Clinical studies demonstrate that COX inhibitors may increase bone density in post-menopausal women, but decrease bone density in older men. Our lab demonstrated that low levels of COX-2/PGE2 stimulate osteoblast (OB) growth, whereas high levels inhibit this parameter. We hypothesized that oxidative stress increases COX2/PGE2 in OB, thereby inhibiting their growth, and that COX2 inhibitor treatment would prevent this effect. Experimental Methods: MC3T3 OB cells in culture were pretreated with the COX-2 inhibitor Meloxicam or medium as control and stressed with varying doses of peroxide (H2O2) to simulate aging-related oxidative stress. Cells were counted and PGE2 levels determined by ELISA assay. Results: Low dose (50 and 100microM) peroxide treatment of MC3T3 OB cells decreased PGE2 secretion slightly but had no effect on cellular proliferation. High dose (200 and 400microM) peroxide treatment increased PGE2 secretion and decreased cell counts. Meloxicam decreased PGE2 secretion and cell counts in the presence or absence of oxidative stress. Discussion: Even toxic doses of peroxide were unable to stimulate MC3T3 OB to secrete PGE2 at high enough levels to inhibit OB proliferation. In the setting of persistently low levels of PGE2, further COX-2 inhibition by Meloxicam was harmful to osteoblasts. Conclusions: Low levels of PGE2 are beneficial to osteoblasts. Inhibitors of PGE2 may be harmful to bone in the setting of basal COX/PGE2 levels in both oxidatively stressed and relatively unstressed bone. Future studies will determine whether

the primary source of increased PGE2 levels in stressed bone are the osteoclasts and whether COX-2 inhibitors improve osteoblast survival in H2O2-stressed co-cultures of osteoblasts with osteoclasts.

C54

Sequential Bilateral Grasp Force Coordination is Impaired in Aging.

G. E. Conti,[1] S. H. Brown.[2] *1. Wayne State University, Detroit, MI; 2. University of Michigan, Ann Arbor, MI.*

Purpose: Healthy older adults preferentially use both hands rather than a single hand approximately 54% of the time (Kilbreath, 2005). A common bimanual strategy is to provide a static supportive grasp with one hand and a transient manipulative force with the other hand. However, little is known about the coordination of bimanual sequential force. As hand grasp and coordination decline with aging, and are associated with the need for additional assistance in self care activities (Falconer, 1991; Jette, 1990), study of bilateral grasp is warranted. The purpose of this study was to examine maintained (static) submaximum grasp force characteristics in one hand before, during, and after transient grasp force production in the contralateral hand.Methods: Twelve young (22-27y) and twelve old (75-87y) healthy community-dwelling adults participated in the study. Participants were seated at a table with the elbow flexed and supported on a table. Using instrumented grasp force devices, participants produced isometric submaximum grasp forces of the same or different magnitudes during bilateral sequential tasks.

Results: A significant temporary decline in static force occurred at the time of transient force onset and relaxation in both young and old adults. The decline was greater in old compared to young adults during both transient onset ($F(1,23) = 6.03$, $p < .05$) and transient relaxation ($F(1,23) = 8.71$, $p < .01$). This result was found whether the dominant or nondominant hand was used for static grasp or the submaximum force magnitudes in the two hands were the same or different.

Conclusion: Attention reallocation may at least partially account for the decline found during transient force onset and relaxation, with greater decreases found in old than young adults. Functionally, this greater inability to decouple bilateral sequential grasp force with aging may result in hand incoordination during object manipulation, such as opening bottles, and may contribute to well-known declines in self care skills.

References:

Falconer, J. (1991). Self report and performance-based hand function tests as correlates of dependency in the elderly, JAGS, 39, 695-699.

Jette, AM (1990). Musculoskeletal impairments and physical disablement among the aged. J Gerontol, 45, M203-208.

Kilbreath, SL (2005). Frequency of hand use in healthy older persons. Australian J of Phys Ther, 51, 119-122.

C55

The dying process: An educational imperative.

A. D. Herman,[1,2] J. M. Flacker.[2] *1. Birmingham/Atlanta GRECC, VA, Atlanta, GA; 2. Division of Geriatric Medicine and Gerontology, Emory University, Atlanta, GA.*

Supported By: Funded by: Birmingham/Atlanta VA GRECC; John A. Hartford Foundation; The Donald W. Reynolds Foundation.

Background:

Medical students are often apprehensive about discussing end-of-life (EOL). Communication apprehension may lead to non-disclosure. Moving students from fear to comfort in discussing death and dying with patients requires education on death and dying and communication skills.

Emory University first year medical education curriculum begins with the "The Healthy Human" block (6 months), the final portion of which is an aging module (1 week) that introduces the basic science and clinical aspects of normal aging. Part of this module incorporates learning about the dying process.

Methods:

Selected survey questions from a previously validated instrument were used to measure the success of the death and dying program in reducing communication apprehension. The survey was administered on the first day of the aging module and after the completion of the module. The educational program had four parts: 1) physical changes at EOL (lecture delivered during the aging physiology section); 2) individual and cultural preferences at EOL (faculty led small group activities using card sort, facilitated discussion, adapted use of Go Wish™ cards, and modified standard gamble methods); 3) effective communication at EOL (lecture/simulated patient interview with stop-action to highlight key communication points); and 4) a panel discussion (with two hospice directors and the family of a recently deceased patient) to address student apprehension concerning communication with the dying patient.

Results:

The survey (11 items - 5 point likert format) was completed by 101 (75% of) first year medical students prior to, and 112 (85% of) students after the program, > 80% were aged 20-24, and over 50% had a previous experience of a personal loss. Significant changes in 3 items were identified. First year medical students felt less awkward in starting a conversation with ($p < 0.001$), felt less strained or unnatural talking to ($p < 0.001$), and more comfortable developing an intimate conversation with ($p = 0.03$) a dying patient.

Conclusion:

Medical student communication apprehension with the dying patient can be improved using a novel educational program specific to death and dying. Reinforcement over time should help solidify these changes. Reduced apprehension may lead to improved patient physician communication. Further research will help clarify the key components that result in successful palliative care educational interventions.

C56

For and By the People: Interdisciplinary Group Writing of Team Curriculum.

A. Pomidor, K. Brummel-Smith, D. Jacobi, S. Baker. *Geriatrics, Florida St Univ College of Medicine, Tallahassee, FL.*

Supported By: HRSA GEC grant D31HP08843

Purpose: To create curricula for use by multiple disciplines in settings modeling interdisciplinary geriatric team care.

Background: Interdisciplinary team care (ITC) is the paradigm for quality geriatrics care, but few resources have been created by interdisciplinary teams of faculty for interdisciplinary use. Learners and faculty from different disciplines have distinctive roles and objectives which need to be created by the home discipline to learn how to participate in actual ITC with learners from other disciplines.

Methods: 20 university and community faculty from 3 universities and 7 disciplines attended a day-long conference on Falls in the older adult. Five presentations by different health care providers detailed how each discipline teaches their perspective on Falls to their learners. Interdisciplinary team function background was also presented. Participants received core advance reading selected by the presenters about Falls from their own literature (medicine, nursing, social work, pharmacy, allied health) and about ITC as resources. Faculty were assigned to 4 groups with members from at least 3 disciplines. Each group was assigned to create a prototype case scenario about an older adult who falls in 1 of 4 health care settings (home, nursing facility, hospital, assisted living) with all the elements needed for each discipline to learn how to provide ITC.

Results: Each group created a case scenario with features unique to each care setting facilitating teaching for each discipline. Slides and scripts for 2 of the 4 cases have been completed for large/small group teaching. Script roles are assigned for the appropriate disciplines for each case, typically medicine, nursing, pharmacy,

social work and allied health. Two of the 4 case scenarios have been used and well-received in large and small group settings with learners from medicine, physical therapy, occupational therapy, nursing, case management and pharmacy.

Conclusions: Participating faculty have requested opportunities to develop more ITC materials in interdisciplinary groups on geriatric topics such as dementia/delirium. Curricula developed in a team are well-suited for ITC teaching and also meet necessary content objectives for individual disciplines. Cases can be used in single discipline settings where learners play different roles or roles can be played by the actual discipline in settings where interdisciplinary learners are available.

C57

An Innovative Program for Interdisciplinary Student Training in Geriatric Assessment.

A. Curtin,[1] A. Hume,[2] K. Salloway,[1] N. McMackin,[1] P. Clark.[2] *1. Division of Geriatrics, Memorial Hospital of RI, Pawtucket, RI; 2. Rhode Island Geriatric Education Center (RIGEC), Kingston, RI.*

Supported By: Supported by HRSA Grant No.D31HP08802

PURPOSE OF STUDY: Much attention has focused on the benefits of an interdisciplinary team approach to geriatric care. However there are limited educational opportunities for health care students to learn the process and appreciate the need for multiple perspectives in caring for older adults. To meet these challenges, the Division of Geriatrics of the Department of Family Medicine in collaboration with RIGEC faculty developed an innovative educational program to train health care students in interdisciplinary team work.

METHODS: The educational program included four monthly, one hour seminars followed by a two hour comprehensive geriatric assessment focused on a community-dwelling older adult identified at risk. The educational seminars included topics regarding interdisciplinary team formation and values, communication, conflict resolution, and leadership styles. At each session the interdisciplinary student team participated in the clinical presentation, patient evaluation, and development of the care plan for the older adult. The team consisted of students from pharmacy, nursing, medicine, social work, and dietetics. An interdisciplinary clinical faculty team served as student mentors. Pre and post attitudinal assessments of interdisciplinary teamwork were collected as well as a student evaluation of the program.

RESULTS: Students overwhelmingly reported that the educational experience changed their way of thinking. The different perspectives of the interdisciplinary team members were seen as an effective approach providing insights into obstacles faced by older adults and greatly benefiting the quality of patient care. In addition students liked the open communication and collaboration of the interdisciplinary team members which maximized their interaction and participation in the process. Students were eager to seek out other opportunities to participate in teams to improve patient care. The only significant barrier was coordinating student schedules for ongoing participation in the education program.

CONCLUSIONS: Developing educational opportunities for interdisciplinary student team building is instrumental in assisting students in understanding the process and appreciating the function of the interdisciplinary team in caring for frail older adults.

C58

Using the Humanities to teach clinical Geriatric Medicine.

B. Struck, J. Vannatta. *DWR Dept Geri Med, University of Oklahoma Hlth Sci Ctr, Oklahoma City, OK.*

Supported By: Health Resources Service Administration - Geriatric Academic Career Award

Medical schools are increasing the use of the humanities to teach students about clinical concepts, which complements Geriatric Medicine (GM). This presentation describes a humanities enrichment project and its impact on student learning during a 3rd year GM rotation. Since July 2008,2 humanities sessions were implemented to teach students about Frailty & Function (F&F)and about the Older Patient – Physician relationship (OPPR). Before each 2 hour session, students wrote an essay and read a selection of literature or patient narrative. Students discuss their essays during the first half of the session. Students discuss the readings and compare them to their essays during the second half. In the F&F session, students write about an activity they do now and how it will change when they are 80. This leads to a discussion about functional assessment and ways to prevent frailty and loss of function. The students then discuss the reading assignment which is selected from If I live to be 100 by Neenah Ellis. The readings describe the lives of two 100 yr old women, one very independent and functional and one with functional limitations but living independently with assistance. Students then contrast and compare the women's stories with their own. The second session on OPPR begins with the students writing about a difficult or challenging encounter they had with an older patient. They then discuss the factors that made the encounter difficult. The reading assignment consists of two stories: The Safety Deposit by Isaac Singer, which describes an 80 yr old man's frustration as he tries to navigate New York City while his memory and concentration have started to fail and Water for Elephants (excerpts) by Sarah Gruen, which describes a 93 yr old man's experiences in the nursing home. Students then reflect how the physician can effectively interact with these "patients". Students like the interactive nature of the session, the creative writing, and clinical discussion in context of the humanities. When asked about the humanities project as a teaching method, 77% of students (n=40)agree or strongly agree that it promotes understanding of GM. Students report improved understanding of Frailty & Function and improved understanding of the Older Patient-Physician relationship after completing the exercises compared to befor the exercises (n=40, $p<0.001$; T-test and Chi –Squared, as appropriate).

C59

Curriculum for Care Managers: Expanding Skill Sets.

L. Widmier,[1] R. Burdon,[3] C. P. Brunker,[2,1] D. A. Dorr,[3] S. Butterworth.[3] *1. Intermountain Healthcare, SLC, UT; 2. U of U Center on Aging, SLC, UT; 3. OHSU, Portland, OR.*

Supported By: John A. Hartford Foundation

BACKGROUND. Providing care for individuals with chronic illness can be costly and complex. It requires trained and prepared health care teams supported by organized, efficient systems/processes. The population of older Americans is disproportionately affected by chronic illness and is growing, increasing the need for age and culturally appropriate quality care. In the primary care setting, where most of these individuals seek care, a skilled, educated and prepared care manager can effectively help patients and providers manage complicated chronic health conditions. Care Management Plus (CMP) offers a geriatric-rich, comprehensive curriculum (ANCC 35 hrs) which is updated and modified in response to learners' needs. CMP includes a two day seminar followed by eight weeks of online training.

METHODS. The educational backgrounds and needs of care managers are assessed prior to training; the curriculum is adjusted accordingly. We collected course evaluations from 72 CM.

RESULTS. Implementation of the program has resulted in several positive outcomes for both CM and patients. Qualitative data reveals patient satisfaction with the CM's learned skill set, moreover, CM reported that training contents were highly worthwhile. Revisions of the curriculum to meet goals led to high success meeting objectives (N=72; 4.4/5) and increased relevance of training over successive offerings (N=72; 4.6/5). Participants who successfully complete CMP gain skills to 1)Teach patients with multiple chronic diseases to organize, prioritize, and implement suggested self-management strategies 2)Identify barriers to care and intervene to overcome or eliminate these when possible 3)Coordinate resources to ensure that

necessary services are provided at the most appropriate level of care and at the appropriate time 4)Identify patient situations at-risk for destabilization and intervene 5)Gather, interpret and use data to demonstrate outcomes and cost-effectiveness. CONCLUSION. Care Management Plus transports the learner from care manager roles and responsibilities to the synthesis and practice of evidence-based care in real-life settings. Content leads the Care Manager in improving knowledge of chronic illnesses and associated physiologic changes, in gaining skills to perform assessments and teach self-management, and in creating and coordinating treatment plans - all to meet the multi-faceted needs and goals of patients and their families.

C60

Steps Towards Improved Learning: Enhancing students responsibility for learning on a Geriatric clerkship.

J. J. Lloyd, L. Granville, S. Baker, D. Newsome. *Geriatrics, Florida State University College of Medicine, Tallahassee, FL.*

Supported By: Florida State University

"This work was supported by a grant from the Donald W. Reynolds Foundation."

Description: FSUCOM has identified geriatrics as a theme integrated throughout the 4 year curriculum. In the 4th year required geriatrics clerkship, students were asked to write personal educational goals to be achieved by the end of the 4 week clerkship. Each student identified at least three personal educational goals. Example goals were provided; content was required to be relevant to geriatrics.

Purpose: Educational aims of the assignment were for learners to take personal responsibility for their learning processes during the clerkship through assessment of their perceived deficiencies in geriatric care. The importance of learners becoming familiar with the principles of self directed learning and educational goal setting is critical to their future success as physicians yet it is a concept uncommonly practiced in medical education. Clerkship faculty aimed to discover the degree of alignment of students' goals with defined clerkship competencies, and to improve the overall teaching/learning experience on the clerkship.

Results: Fifty-seven students in the class of 2008 submitted a total of 200 goals. Review of these goals revealed topics in 18 categories. The top five categories identified for enhanced learning included: therapeutics (18.5%), delirium (10.5%), communication skills (10%), dementia (10%), and functional assessment (8%). These categories accounted for over half (58%) of the areas of learning desired by students and aligned with one or more of the AAMC competencies and stated FSUCOM geriatric clerkship competencies. Therapeutics was the most popular area of interest. Specifically students desired to learn how to avoid polypharmacy, balance risks and benefits of treatment, and discontinue adverse medications. Areas of learning not explicitly included in either of the referenced curricular competencies but desired by several students included managing medically complex patients and managing "non-team" multidisciplinary care.

Implications: More formal and specific assessment of goal achievement and follow-up of student derived methods to fill their gaps in geriatric knowledge / skills are needed to fully assess the impact of this educational strategy. The alignment of student needs with national competencies suggests lessons learned from FSUCOM may have relevance to other institutions.

C61

Teaching Geriatrics Outside the Clinics: Integrating Geriatrics into Basic Science.

K. Denson,[1] D. Brown,[5] R. Sabina,[3] S. Twining,[3] A. Derse,[4] E. Duthie,[1] J. Liard.[2] *1. Med, Medical College of Wisconsin, Milwaukee, WI; 2. Physio, MCW, Milw., WI; 3. Biochem, MCW, Milw., WI; 4. Pop Hlth, MCW, Milw., WI; 5. Ed Svces, MCW, Milw., WI.*

Supported By: Advancing Healthier Wisconsin

Purpose: Constrained curriculum, limited faculty time and competing educational priorities set a difficult stage for integrating geriatric medicine content into the basic sciences. Crucial geriatrics content has been identified through the AAMC/John A. Hartford Foundation sponsored "Consensus Conference in Geriatrics" which identified 26 educational competencies published as "Minimum Geriatric Competencies for Medical Students". These competencies span 8 domains for improved care of the elderly. Seeking to incorporate these competencies into the basic science curriculum, we formed a basic and clinical science faculty collaboration to identify opportunities, design and implement competency-driven geriatrics education using multiple educational methods.

Methods: The work group completed a needs assessment of basic science courses looking for difficult topics resulting in gaps in students' knowledge. Faculty then identified educational strategies to close "gap" areas using geriatrics content linked to competency domains. Next, teaching methods were chosen based on competency performance and instructional time. 50% of domains were addressed through on-line curriculum (e.g., Bioethics: Medical Errors & Conflict of Interest; Biochemistry: Patient & Micronutrient Metabolism). These modules contain cases, text, video and external resource links. On-line quizzes and course evaluations provide competency linked assessment. A third module reframed the traditional "Physiology of Aging" lecture to include a case presentation and caregiver interview emphasizing cognition and function competencies to address an additional 10% of geriatrics competencies.

Results: The Biochemistry module was rated "helpful/very helpful" by 88% of students. The Bioethics module question "what are your thoughts about online learning vs. traditional lecture methods" indicated 62% of students preferred on-line learning, citing self-pacing and a mixture of learning styles as key factors. Collaborating basic science faculty have enthusiastically endorsed the curriculum and "integration" strategy.

Conclusions: Minimum Geriatric Competencies for Medical Students can be incorporated into basic science curriculum through a collaborative faculty approach utilizing geriatrics to illuminate and reinforce difficult basic science concepts.

C62

Communication Training for Medical Students: Informing Family of a Death.

K. M. Zaw,[1,2] A. S. Bagri,[1] M. H. van Zuilen,[1,2] J. C. Palacios,[1,2] M. J. Mintzer.[1,2] *1. Bruce W. Carter Dept of VAMC, Miami, FL; 2. Univ of Miami Miller School of Med, Miami, FL.*

INTRODUCTION: As part of our 4-year longitudinal curriculum in Geriatrics, Pain Management, and Palliative Care, we implemented training on informing family of the death of a loved one during a mandatory geriatrics clerkship for 3rd- or 4th-year medical students (MS3/4). The training builds on communication skills (breaking bad news) from preclinical years. **METHODS**: During a clerkship on the Geriatric Evaluation and Management/Hospice Unit at the Miami VAMC, 3-5 MS3/4s participate in two 1-hour small-group sessions: the last 48 hours of living and communicating the death of a loved one. During the second session each student notifies a simulated family member by telephone of the death. Students complete a self-reflection questionnaire on the components of a good death before the first session. A 14-item checklist is used to rate student performance for the second session. Students evaluate both sessions. **RESULTS**: Preliminary data on self-reflection show that students (men 42%, women 58%) believe adequate control of pain, symptoms, care for human dignity and cleanliness, and retained decision-making are very important components of good death. More than 80% believe practical preparation for death, life completion, and affirmation of the whole person are very important; over 60% considered contributing to the well-being of others as very important. Results from the performance checklist show that most students were able to engage with family members and deliver bad news; however, they frequently had difficulty saying the words "died" and "dead,"

often using instead terms such as "passed away" or "expired." There was occasional use of medical jargon and a lack of pauses during the conversation. Students who went last performed better than those who went first because of the learned experience and formative feedback. Students admitted the emotional response was stressful. Student evaluations of both sessions reflect an overall positive experience. **DISCUSSION**: Our curriculum was designed to build on students' preclinical training by providing the opportunity to apply their knowledge during a telephone simulation. Preliminary data suggest that although students can generally relate to the components of a "good death," they feel an emotional response and have some difficulty with finding the right words and applying interviewing techniques during a simulated experience.

C63

Needs Assessment for a Curriculum in Postoperative Pain Management for Orthopedic Residents.

L. E. Brandt,[1] S. C. Mears,[2] M. Grant,[3] G. Cordts.[1] *1. Division of Geriatric Medicine and Gerontology, Johns Hopkins, Baltimore, MD; 2. Department of Orthopaedic Surgery, Johns Hopkins Bayview, Baltimore, MD; 3. School of Nursing, Johns Hopkins, Baltimore, MD.*

Purpose: Inadequate pain relief after surgery has been reported in 50 to 75% of patients. Poor pain management contributes to morbidity, increased length of stay, readmissions, patient dissatisfaction, and delirium in the elderly. Orthopedic housestaff manage postoperative pain in many elders who undergo hip fracture repair or joint arthroplasty, as well as in younger patients and those with a history of substance abuse. Utilizing the focused, intensive, and iterative six-step curriculum development method, we are developing a curriculum to improve postoperative orthopedic pain management. We present our needs assessment of orthopedic housestaff in the area of pain management.

Methods: 20 orthopedic housestaff were interviewed in groups by year of training. A 13-item questionnaire was given at the beginning of each interview. 30-minute focus groups were then conducted to identify knowledge and attitudes about postoperative pain management, as well as perceived barriers to optimal pain management. Focus groups were recorded and transcripts were analyzed.

Results: Survey data showed varying levels of training, knowledge, and comfort. 4 of 20 residents reported formal training in pain management. Despite this, 12 of the 20 felt they had received adequate training in prescribing opioids. 3 of the 4 first year residents were not confident converting from IV to oral opioids. Only 11 of the 20 residents believed a basal rate for patient controlled analgesia is needed for patients taking long-term opioids. Discomfort treating patients with substance abuse was expressed by 7 of the 20 residents. 17 of the 20 believed that if pain control is inadequate on one opioid it should be switched to another agent. Qualitative data from the focus groups include themes involving trust, communication, comfort using opioids, and need for multimodal approach to pain management.

Conclusions: Our data supports a need for improved training in pain management among orthopedic housestaff. This information will be combined with data from a needs assessment of orthopedic attendings, pharmacists, nurses, physical therapists, and patients to design a multidisciplinary curriculum. We will study the impact of this curriculum on prescribing habits, self-efficacy for pain treatment, and clinical outcomes.

C64

Physician Assistant Students' Attitudes Towards Geriatric Patients After Completion of A Week-long Structured Long Term Care Experience.

C. Fowler, R. Wallace, M. Dunstan, M. C. Galicia-Castillo. *Internal Medicine/Glennan Center for Geriatrics and Gerontology, Eastern Virginia Medical School, Norfolk, VA.*

Objective: Evaluate changes in Physician Assistant (PA) students' attitudes towards Geriatrics patients after completing a week-long structured long term care (LTC) experience.

Design: Single cohort with a pre- and post- rotation attitudinal survey.

Setting: PA students are required to have a one-week experience in LTC. Several of these students were involved with the Glennan Center for Geriatrics and Gerontology with the PA-C and Gerontological Nurse Practitioner (GNP).

Participants: PA students

Intervention: The week-long structured LTC experience is composed of required readings, a didactic session in Geriatrics, 5 structured days in a variety of LTC settings with established goals in each setting, and a daily journaling exercise.

Measurement: PA students completed an attitudinal survey at the beginning and at the end of the rotation. This survey, consisting of 14 questions regarding attitudes about geriatric patient care, has been validated in a previous study (Reuben, et al, 1998). Student responses were based on a Likert scale and ranged from strongly disagree to strongly agree.

Results: A total of 10 PA students participated in the structured LTC experience so far. The average age was 26. 60% had prior professional experience in LTC. Only 10% had both personal experience and professional experience in long term care. After analysis of a pre- and post- attitudinal survey, there did not appear to be any statistically significant changes in attitudes towards geriatric patients.

Conclusions: A week-long LTC experience does not appear to impact attitudes towards the care of older patients. The sample size was small but the experience continues throughout the academic year. During this experience, students were also asked to maintain a journal about their reflections on Geriatrics. Further qualitative research may yield different results. Other areas to examine include re-evaluation of the structured experience including the length of the experience and content taught during the experience. With the growing population of people anticipated in a LTC setting, there will be a need for more practitioners in this setting. It is important to find educational tools that may help develop an interest in this field for the growing number of physician assistants.

C65

"Speed-dating": An efficient process for aligning potential mentors with mentees within a geriatrics training program.

M. McNabney, N. Fedarko, S. Durso. *Johns Hopkins University, Baltimore, MD.*

Purpose: Excellent mentorship is critical to a successful fellowship training experience. However, identifying an appropriate mentor in a timely manner can be challenging for first-year fellows and a delay in establishing this relationship can impact productivity. In response to a creative suggestion by fellows in the spring 2008, we established a program of "speed-dating" to improve opportunities for fellows to efficiently align with faculty mentors.

Methods: Four 1.5 hour sessions in August 2008 were designated mentorship "speed-dating" sessions. To each of these, we invited "clusters" of faculty members representing different focus areas, as well as all geriatric medicine fellows and other trainees interested in geriatrics. The 4 faculty clusters included: basic science/lab researchers, clinicians/educators, epidemiology/biostatistics, and clinical & health services research. During each of these sessions, faculty members were dispersed around the large conference room and fellows rotated to each faculty member's "station" for approximately 10 minutes. The goal of these 1:1 encounters was for faculty to briefly summarize their work and personal history of working with fellows, and for fellows to share their own interests and background/skills. Fellows were encouraged to attend all four sessions. Internal medicine residents and medical students interested in geriatrics were also welcome.

Results: Faculty and fellow/trainee attendance at these sessions was, respectively: basic science/lab research (3 and 5), clinician-educator (4 and 2), epidemiology/ biostatistics (4 and 6), and clinical/health services (8 and 8). Feedback on these sessions from faculty and fel-

lows/trainees has been universally positive, with great appreciation for the efficiency of the new process and the higher rate of direct contact between potential mentors and mentees.

Conclusions: This "speed-dating" format was successful at bringing together a wide range of faculty members and new trainees. It appears to be an efficient and enjoyable way to launch critical mentorship relationships early in fellowship training. Follow-up data on the establishment of sustained mentoring relationships is needed.

C66

The Chronic Care Medicine Internship: A Pilot Project for Undergraduate Pre-professional Students.

M. A. Paniagua,[1] R. O. Sanker,[2] M. Waldron .[3] *1. Internal Medicine, Division of Gerontology & Geriatric Medicine, Saint Louis University School of Medicine, Saint Louis, MO; 2. St. Louis University Pre-Professional Health Studies, Saint Louis University, Saint Louis, MO; 3. Saint Louis University, Saint Louis, MO.*

Supported By: Dr. Paniagua is funded by the Bureau of Health Professions Health Resources and Services Administration Geriatric Academic Career Award.

PURPOSE: The demographic imperative for preparing the physician workforce to care for increasing numbers of elder Americans is looming. Although various studies have aimed to improve knowledge, skills and attitudes of medical students and housestaff towards elder patients, little has been attempted targeting pre-professional students.

METHODS: With the Pre-professional Health Office at Saint Louis University, we are creating a "Chronic Care Medicine Internship" based at a local skilled nursing facility. This elective is being developed utilizing pre-professional student focus groups in a deliberative curricular needs assessment process. Learning objectives for the course focus on specific geriatric knowledge, skills and attitudes, with student input. The semester long elective will involve three foci of activities: 1) Weekly Elder Companion and Volunteer Program visits focusing on identification of functional limitations & adaptations, quality-of-life, frailty and learned helplessness, 2) Weekly Geriatric Medicine rounds focusing on disease influence on functionality, and 3) A Quality Improvement project, a self-directed student-initiated project to improve the

quality-of-life for facility residents. Pilot group data collection includes qualitative methodology in the needs

analysis phase of course objective creation as well as use of pre- and post-course attitudinal surveys, online journal and reflection assignments, 360 degree evaluations of students, and evaluation of the quality improvement projects.

RESULTS: Pilot group qualitative analyses of 44 student responses revealed specific themes for curriculum concentration including: 1) Patient experience, 2) Medical school application enhancement, 3) Experience with

doctors, 4) Overall Experience, 5) Specific Geriatric Medicine Experience, 6) Ethics exposure and 7) Other. Data collection in other domains is underway.

CONCLUSION:Involvement of pre-professional students in curricular creation may enhance buy-in to the program. By further targeting improvements in knowledge, skills and attitudes of learners towards elder patients, we will aim to determine if significant and sustained improvements in these domains is affected by student involvement in program creation.

C67

Students' Perceptions of Site and Preceptor Characteristics in Rehabilitative Care Training in a Geriatrics Clerkship.

M. K. Bautista,[1,2] J. R. Meuleman,[1,2] R. I. Shorr,[1,2] R. J. Beyth.[1,2] *1. GRECC, NF/SG VHS, Gainesville, FL; 2. Dept of Aging, University of Florida, Gainesville, FL.*

Purpose: Since the LCME mandates U.S. medical schools provide rehabilitative care in the core curriculum, there is a need to identify site characteristics associated with optimal educational experiences of medical students. This study aims to: 1) Compare students' experiences between academic and community-based settings; and 2) Describe their preferred site characteristics in rehabilitative care in a geriatric clerkship.

Methods: A quantitative and qualitative study of 4th-year medical students from July 2007 through October 2008 at a state-university medical school. This clerkship consists of a 2-week clinical sub-internship at one of 5 clinical sites (3 in academic centers and 2 in community nursing homes) and 3 didactic learning activities: 1)Interactive online learning modules; 2)Small group sessions with geriatric faculty; 3)Geriatric Interdisciplinary Care Summaries(GICS), a grid that students use to formulate interdisciplinary care plans. Students' evaluations on the overall clerkship, usefulness of patient care experience, and didactic learning activities (5-point Likert scale: 1=Poor to 5=Excellent) were compared using the chi-square test. Students' narrative comments on their both good and bad experiences were also analyzed using an inductive exploration of similar and divergent characteristics within themes.

Results: Among 156 students who completed the clerkship, 117 (75%) completed the evaluations. Ninety-one (78%) completed the clinical rotation in academic-based and 26 (22%) in community-based settings. Their rating of overall clerkship (Mean ± SD:3.8 ± 1.0), patient care experience (4.1 ± 1.1), and didactic activities (Learning modules:3.7 ± 0.9; Small group:3.8 ± 0.9; GICS:3.3 ± 1.0) did not vary between academic and community-based settings(P-value≥0.33). Students valued clinical preceptor's knowledge, professionalism, teaching skills, feedback on students' performance, and interdisciplinary experience at the clinical sites. Overall, students wanted more teaching time with their clinical preceptor, clear and realistic expectation of their performance, and autonomy in making clinical decisions.

Conclusion: Educational experiences in rehabilitative care did not vary between academic and community-based settings. Narrative comments identified themes for improving the educational experiences in rehabilitation settings.

C68

Strengthening Psychosocial Programming in Geriatric Fellowships.

P. Ansell, R. Breckman, R. Adelman, J. Breznay, D. Greeenberg, B. Raik. *Division of Geriatrics and Gerontology, Weill Cornell Medical College, New York, NY.*

Supported By: Jarvie Commonweal Foundation

PURPOSE: Geriatric psychosocial problems are complex and significantly impact the health and well-being of older adults. Geriatric fellows require psychosocial education and yet to date, geriatric fellowship programs have not established core geriatric psychosocial content, competencies or curricula. The NY Metropolitan Area Consortium to Strengthen Psychosocial Programming in Geriatric Fellowships was developed in 2007 to address these shortfalls. METHODS: Comprised of 16 NY metropolitan area geriatric fellowship programs, faculty members from these programs have shared psychosocial curricula, resources and other materials to improve geriatric fellowship psychosocial education. In 2008, Consortium faculty collaboratively designed and implemented a psychosocial conference for geriatric fellows. Taught by a multidisciplinary faculty, the aim of the conference was to provide the Consortium's fellows with: 1) practical and relevant psychosocial content; 2) exposure to expert faculty from other academic institutions; and 3) opportunities for interacting with fellows from other programs in a shared learning environment. RESULTS: Eighteen Consortium faculty representing nine fellowship programs held five conference planning phone meetings to determine the conference focus and format. The conference topics were cho-

sen by the Consortium's fellowship program directors utilizing an electronic survey method. Forty-seven geriatric fellows attended the conference, representing 77% of the 61 fellows currently enrolled in the Consortium's fellowship programs. Faculty instructors were recruited based on expertise in the chosen topics. Eleven faculty, from diverse fields, taught at the conference, representing six academic institutions. Seventy-one (82%) workshop evaluations were completed by geriatric fellows. (Each fellow attended two workshops.) Of the completed evaluations, 58 (82%) fellows rated the workshop content as relevant to their work; 43 (61%) reported an appreciation of a learning experience with geriatric fellows from other programs; and 46 (65%) reported an appreciation of the exposure to diverse faculty. CONCLUSIONS: We conclude that psychosocial education greatly benefits from a collaborative approach. Sharing resources and designing group events is a valuable method for strengthening geriatric fellowship psychosocial programming. This educational model may be replicable in other localities.

.

C69

Evaluating Geriatric Residents' Transitional Care Education.

W. L. Lyons,[1] A. Hulbert,[1] K. J. Jones.[2] *1. Internal Medicine, Univ NE Med Ctr, Omaha, NE; 2. Physical Therapy Education, Univ NE Med Ctr, Omaha, NE.*

Supported By: Supported by Geriatric Academic Career Award, DHHS/BHPr/HRSA.

Purpose: To evaluate effectiveness of resident transitional care education and discharge planning; to explore faculty knowledge, skills, and attitudes about transitional care education.

Methods: Mixed-methods study design included: quantitative chart audit of evidence-based elements of effective transitional care found in the 1st and 4th quartile of discharge summaries dictated by each of 24 geriatrics residents June 2006–May 2008; survey of faculty transitional care attitudes and practices; qualitative, structured interviews of 7 geriatrics faculty addressing knowledge, skills, and attitudes about transitional care and transitional care education.

Results: Review of the first and last 25% of 238 discharge summaries completed by 24 residents during the 24-month period showed statistically significant increases ($p<.05$) in documentation of key elements: functional diagnosis in discharge diagnosis list, problem-based hospital course, transfer information given to family, rehabilitation orders, and functional status at transfer. All 7 faculty rated discharge planning and transitional care as an important or very important curricular item. Faculty discussed residents' need to know what transitional care is, topics to be passed on to the next provider, and differences between various care settings and what each provides. They discussed residents' need to determine the next site of care, communicate with patients and families, and compose appropriate discharge summaries. Faculty perceived that some residents regard transitional care as tedious and unrewarding and had scant motivation to acquire these skills and knowledge. While faculty discussed both "positive" and "negative" feedback, some expressed discomfort with giving feedback. Another barrier is that transitional care is not included in the summative feedback instrument used to evaluate Geriatrics rotation residents.

Conclusions: Statistically significant improvement was demonstrated in 5 key elements of discharge summary over the course of the month, suggesting effectiveness of transitional care education. Chart review revealed the need for additional improvement. Faculty stress importance of transitional care, rating it an important curricular priority. Time constraints and lack of a summative evaluation tool specifically addressing transitional care skills are barriers to providing instruction.

C70

An interdisciplinary approach to teaching delirium prevention and treatment to teams caring for hospitalized older adults in a community hospital.

S. L. Oakes,[1,2] C. Alford,[1,2] A. Burns RN, MBA,[1,2] J. Riley- Baker RN.[1,2] *1. Family and Community Medicine, University Of Texas Health Science Center at San Antonio, San Antonio, TX; 2. Nix Hospital, San Antonio, TX.*

Supported By: Geriatric Academic Career Award HRSA-07-GACA

CFDA 93.250

ACE (Acute Care of elderly) program is a state-of-the-art clinical environment wherein professionals from various disciplines work together as a team utilizing evidence base geriatric principles to reduce recovery time and loss of function in the elderly. A two hour learning session was offered on site 3 times to RNs, LVNs, Physical and Occupational Therapists and their assistants, nutrition workers, case managers, Social Workers and CNAs at a small community hospital. The educational sessions were designed to be case based and participatory to provide for maximum interaction between workers of different disciplines.

Learners from different disciplines work in groups to give tips on the case from their discipline learn from each other and work together in discussing and planning the changes needed to improve the care and prevent delirium.

The case was lead by a geriatrician and a co-teacher, an RN from the institution. An education specialist was also invited to help to develop the activity and help with the evaluation process. A total of 24 workers took the course. 5 CNAs, 3 LVNs, 3 Nutrition Assistants, 1 PT Asst, 1 performance improvement, 11 RNs,(1 nursing administrator, 3 RN case managers, 7 clinical RN). Each completed pre and post tests.

Findings: Knowledge assessment: 7 participants made a perfect score on both pre and post tests: 3 RNs, 1 CNA, 1 Compliance officer, 1 LVN, 1 PT asst. Only 1 other participant made no gains from pre to post test. A nutrition asst scored 3 on both pre and post. After eliminating those who scored 100% on pre test: Average pre test score: 2.4Average Post test score: 4.2 Average Gain: 1.8

Skill assessment: In Progress- each participant was given a laminated educational fast use CARD with delirium pearls. We will evaluate with a subjective test how much the card has improved clinical practice.

Attitude assessment: the nurses received CEU credits and evaluated the program as helpful and high quality. A – National Average

Key Lessons /BARRIERS 1. attendance. Workers needed to be released from work to attend or come on their own time.2. Achieving cross discipline mixes in each class. Turnover in staff.

C71

From Doughnut Holes to Nursing Homes—The U.S. Healthcare System in Aging, Ethnically Diverse America.

S. Limaye,[1] P. Podrazik,[1] S. Reddy,[1] M. Vela,[1] J. Hickner.[2] *1. Medicine, University of Chicago, Chicago, IL; 2. Family Medicine, University of Chicago, Chicago, IL.*

Supported By: HRSA Geriatric Academic Career Award

Introduction: Anticipated demographic changes in the next decade demand that healthcare professionals develop skills to provide culturally competent care for America's minority older adults. Many medical schools and residency programs have found systems-based practice, in the context of racial health care disparities, to be a challenging topic to teach and evaluate.

Educational Innovation: To develop a two-week, twelve-hour elective experience for 13 interdisciplinary learners including social work interns, medical students, and Internal Medicine residents to identify the difficulties frail, minority older Americans face as they navigate the US healthcare system.

Educational Goals include: 1) understand the basic structures of Medicare and LTC in America, 2) define ethnogeriatrics, 3) identify local and regional safety nets for older adults, and 4)develop an in-depth understanding of a select issue in geriatric health care "systems".

The following teaching methords were utilized: 1) selected readings and videos, 2) short lectures, 3)workbook and computer-based assignments, 4) interviews with health care experts in the University of Chicago community and 5) 30-minute small group presentations on a specific aspect of geriatric health care systems to the entire group.

Results: All 13 learners completed pre and post-course surveys. Knowledge tests revealed an increase of correct answers from 48% pre-course to 65% post-course. Utilizing a paired t-test, learners attitudes and self-reported skills about ethnogeriatrics and effectively utilizing geriatric health care systems increased significantly in 7 of 11 areas ($P<0.05$). Qualitative analysis revealed students valued the practical applicability of the course, the "real-world" interdisciplinary setting, and multi-modal educational format.

Conclusions: This pilot curriculum provided a novel and effective way to teach interdisciplinary healthcare professionals-in-training about the U.S. healthcare systems and racial health care disparities that America's minority older population faces It appealed to a variety of learners, and was effective in improving knowledge, attitudes and self reported skills regarding ethnogeriatrics. Future curriculum development will attempt to focus on interventions to narrow racial health disparties in order to improve the U.S. healthcare system.

C72

Increasing Geriatrics Visibility: Creation of a Virtual ACE Service.

S. Denson, E. Duthie, J. Roznowski-Olson. *Medicine, Medical College of Wisconsin, Wauwatosa, WI.*

Supported By: Geriatric Academic Career Award through HRSA

Purpose: Small faculty size, decreased inpatient presence and lower reimbursement may lead to geriatrics as a "hidden" specialty in a busy, tertiary care hospital. However, inpatient geriatric care presents a unique opportunity to provide excellent medical care, consistent with the Assessing Care of Vulnerable Elders (ACOVE) criteria, to older adults while teaching geriatric principles of care to multi-disciplinary healthcare team members. Seeking to increase visibility of geriatrics in an academic tertiary referral hospital, we created and implemented an inpatient geriatrics consultation team. This Virtual Acute Care of the Elderly (vACE) service offers residents a venue for exposure to geriatric principles and management in an acute care setting.

Methods: After site visits to regional geriatric units, we developed a virtual Acute Care for the Elderly service at Froedtert Hospital, the primary teaching affiliate for the Medical College of Wisconsin. We chose a consultation and co-management model to provide greater flexibility in accessing vulnerable elders in what a decentralized facility. Team members include a geriatric nurse practitioner and geriatrician hospitalist. Patients are identified through direct resident/faculty consultation and through a geriatrics initiated screening process, utilizing an electronic nursing Outcome Measurement Tool (OMT) to flag a patient as a "vulnerable elder" based on age, admitting diagnosis, co-morbidities, and frequency of hospitalization.

Results: The ACE service provides education in geriatric assessment skills and syndrome management to medical and surgical housestaff and medical student learners through consultation exposure. While the majority of consults are from medical services, an increasing number are coming from surgical specialties. The number of hospital consults increased from n=12 in 2006-2007 to n=206 in 2007-2008. Consult requests include: assessment and management of delirium, dementia, falls, functional decline, failure to thrive, decisional capacity and geriatric care planning. The vACE has improved access to community resources and facilitated safer discharges for vulnerable adults as housestaff attend to geriatrics issues in vulnerable patients.

Conclusions: Implementation of a vACE service has increased geriatrics visibility in a tertiary care academic hospital, leading to increased geriatric education of housestaff in the care of vulnerable elderly patients.

C73

AGS Resident Chapters: First Year's Progress.

T. M. DuVal, G. Luciano, S. Bellantonio, M. Brennan. *Internal Medicine, Baystate Medical Center, Chicopee, MA.*

Supported By: 0

With the establishment of Resident Chapters in 2007, The American Geriatrics Society is working to increase the visibility of geriatrics and recruitment into the field among residents. In their first year 4 Resident Chapters have raised awareness of careers in geriatrics, provided educational activities and have enhanced community outreach.

Baystate Medical Center/ Tufts University School of Medicine in Springfield, MA has 10 members. Monthly meetings have included a guest speaker who discussed nursing home careers and a CV workshop. Members presented geriatric articles at a CME noon conference. Residents have been active in community outreach. Several have spoken to a Mall Walkers group on topics such as immunizations and falls prevention, and one member has developed a falls prevention brochure for PCP offices.

The Boston University Medical Center Chapter in Boston, MA has 12 members and meets quarterly. This chapter fosters interest in a geriatric career with their Geriatric Career night dinner in collaboration with Tufts University. Educational programs include geriatric morning report and a board review session.

The Brody School of Medicine Chapter at East Carolina University in Greenville, NC has 26 members and has met 10 times this past year. Each meeting featured a geriatric presentation from a resident or guest speaker on topics such as dementia and geriatrics as a career.

Huron Hospital, a Cleveland Clinic Hospital has 4 members who meet monthly. The group is actively involved in geriatric research, particularly in underprivileged groups. At the 6th Men's Minority Health Center annual Health Fair, they conducted surveys of topics such as end-of-life decisions.

Members of all chapters have been active in the AGS yearly meetings with poster presentations, participation in the quiz show, planning meetings of the Resident Section and assisting with the Get Up and Go falls risk assessment program in Washington DC.

Barriers to success have included difficulties planning meetings due to resident schedules and insufficient funds to provide meals for all meetings; food encourages participation. Residents desire more resident-focused events at the national AGS meetings such as clinical skills workshops, panels on jobs available to geriatricians and CV workshops. The authors believe that the formation of further resident AGS chapters will enhance recruitment into the field, and increase the visibility of geriatrics in teaching hospitals and their communities.

C74

Impact of Geriatric Education on Staff Nurses' Perceptions of Resource Availability to Care for Hospitalized Older Adults.

V. I. Wendel,[1] A. I. Arbaje,[1] D. Cayea,[1] E. Tanner,[1,2] S. C. Durso.[1] *1. School of Medicine, Johns Hopkins University, Baltimore, MD; 2. School of Nursing, Johns Hopkins University, Baltimore, MD.*

Supported By: John A. Hartford Foundation and Johns Hopkins Hospital

Purpose: Assess the impact of geriatric education interventions on nurses' perceptions of the environmental factor, Resource Availability (RA), an 8 item subscale of the Geriatric As-

sessment Profile (GIAP). RA refers to obstacles to caring for hospitalized older adults (e.g., lack of specialized equipment and communication skills). Previous work has found an association with a positive geriatric environment and positive geriatric care delivery.

Methods: Pre-/post-survey design using a modified version of the GIAP to assess staff nurses' attitudes before and after implementing geriatric education interventions on 3 nursing units with a fourth unit serving as a comparison group. Education interventions included a case-based presentation illustrating geriatric care principles, a handout of community resources, geriatric nursing pocket cards with assessment and intervention tools for common geriatric syndromes, and self-guided web-based education modules on delirium, continence and sleep. We analyzed nurses' responses to the RA items, and defined improvement as an increase in post-survey score of > 35% from pre-survey scores.

Results: Seven nurses in the intervention group and one in the comparison group completed both the pre and post survey. The total mean pre-survey RA score for the intervention group was 24.60 (SD=7.30) and increased to 31.80 (SD=5.67) after the intervention. The pre-survey score for the control was 13 and increased to 27. Of those who showed improvement of >35% in total mean RA score, all were in the intervention group.

Conclusions: In this pilot study, nurses initially reported that RA items greatly interfered with care of hospitalized older adults. Nurses' perception of RA improved after geriatric education interventions, and they reported lack of resources as interfering less with care of older adults. Nurses who are more knowledgeable about geriatric care principles may feel empowered, and thus perceive fewer obstacles to caring for hospitalized older adults. The survey may also have served as a teaching tool and made nurses more aware of available resources. Raising nurses' awareness of geriatric care principles may translate into a more senior-friendly hosptial environment for older adults. Further study is needed on impact of geriatric education on nurses' behaviors and patient outcomes.

C75

Chemokine CXCL-10 Expression and Regulation by TGF-beta In Vitro and its Relevance in the Pathogenesis of the Geriatric Syndrome of Frailty.

A. Mehta,[1] T. Qu,[2] S. Leng.[2] *1. The George Washington University School of Medicine and Health Sciences, Arlington, VA; 2. Division of Geriatric Medicine and Gerontology, Johns Hopkins School of Medicine, Baltimore, MD.*

Supported By: Naitional Institute on Aging and American Federation for Aging Research

Frailty, an important geriatric syndrome with decreased functional and physiologic reserve and increased vulnerability to stressor, is characterized by chronic inflammation. In our recent pathway-specific gene array and real time quantitative reverse transcriptase polymerase chain reaction (RT-PCR) analyses, frail older adults, identified by the validated 5-item Fried's screening criteria, have shown significant upregulation in lipopolysaccharide (LPS)-induced ex vivo expression of chemokine CXCL-10 and other pro-inflammatory molecules as well as tumor necrosis factor (TGF)-beta by purified CD14+ monocytes than age-, race-, and sex-matched non-frail controls (1). CXCL-10 is a potent pro-inflammatory chemokine that has been implicated in several inflammatory conditions, while TGF-beta is an anti-inflammatory cytokine known to regulate inflammation. The purpose of this study is to investigate monocytic expression and regulation of CXCL-10 in vitro. To accomplish this objective, RAW.264 cells, a well established mouse monocytic cell line, were cultured in the presence or absence of LPS. TGF-beta or IL-6 was added to the culture as potential regulatory cytokine. Cells were harvested after 4 hr culture, mRNA was extracted, and CXCL-10 expression was assessed by RT-PCR. The results showed that LPS was a potent stimulant that induced CXCL-10 expression at the concentration of 1ng/ml or above. TGF-beta at the concentrations of 2.5ng/ml or above showed some level of inhibition on LPS-induced CXCL-10 expression, while IL-6 had no effect. Consistent with our findings from pathway-specific gene array and RT-PCR analysis in humans, these preliminary results have shown significant LPS-induced monocytic expression of CXCL-10 and further suggested the potential regulatory role of TGF-beta. They provide a basis for more in-depth molecular investigation into the role and regulation of CXCL-10 in the pathogenesis of frailty.

1. Qu T, et al. Upregulated ex vivo expression of stress-responsive inflammatory pathway genes by LPS-challenged CD14+ monocytes in frail older adults. Mechanisms of Aging & Development (in press).

C76

PREVALENCE OF GERIATRIC SYNDROMES IN OLDER PATIENTS HOSPITALIZED FOR ACUTE CARDIAC DISEASES IN A DEPARTMENT OF CARDIOLOGY.

E. M. Sanchez,[1,2] H. Bueno,[2] C. Gonzalez,[1] R. Barrera,[1] F. Flores,[1] J. Serra,[1] J. Ortiz,[1] M. Vidan.[1] *1. Geriatrics, H.G.U.Gregorio Marañon, Madrid, Madrid, Spain; 2. Cardiology, H.G.U.Gregorio Marañon, Madrid, Spain.*

BACKGROUND: The influence of age and comorbidity in cardiovascular outcomes has been studied. However the prevalence and implications of geriatric syndromes in older patients hospitalized for acute cardiac diseases are not known.

AIM: To describe the coexistence of common geriatric syndromes among older patients hospitalized for acute diseases in a cardiologic department and their distribution according to admission diagnosis.

Design and Setting: Prospective cohort study of patients ≥70 years old consecutively admitted in the Cardiology Department of a university hospital in Madrid, Spain, between January and March, 2008.

METHODS: We evaluated the following geriatric syndromes: visual and hearing impairment, disability in any activity of daily living (ADL), mobility disability (need of assistance to walk 400m or climb one floor), cognitive impairment (MMS<22), and depressive symptoms (Yessavage test >6). We also analyzed the incidence of delirium during in-hospital stay.

Results: 260 consecutive patients were included, with a mean age of 80±5 years. Causes of admission were heart failure (44%), acute coronary syndrome (38%), arrhythmias (8%), and other (9%). More than 80% of the patients had at least one of the previously described geriatric syndromes, with similar rates among diagnosis groups. Disability for any ADL was found in 59%, cognitive impairment in 32%, mobility disability in 22%, and depressive symptoms in 14%. The incidence of delirium during hospitalization was 17%. Patient with heart failure were older and had higher rates of ADL or mobility disability. Nevertheless the prevalence of cognitive impairment, depression, and visual and hearing impairments was similar among different diagnosis groups. Delirium was more frequent in patients with heart failure or with ST-elevation myocardial infarction than in those with arrhythmias or other coronary syndromes.

CONCLUSIONS: Most older patients hospitalized for acute cardiac diseases have a concomitant geriatric syndrome or disability that may modify their treatment and prognosis. A multidisciplinary approach for early detection and treatment of these clinical situations may be useful in Cardiology Departments.

C77

FUNCTIONAL DECLINE DURING HOSPITALIZATION FOR ACUTE CARDIOLOGIC DISEASE IN OLDER PATIENTS: INFLUENCE OF COMORBID GERIATRIC SYNDROMES.

E. M. Sanchez,[1,2] H. Bueno,[2] R. Barrera,[1] C. Gonzalez,[1] J. Serra,[1] J. Ortiz,[1] M. Vidan.[1] *1. Geriatrics, H.G.U.Gregorio Marañon, Madrid, Madrid, Spain; 2. Cardiology, H.G.U.Gregorio Marañon, Madrid, Madrid, Spain.*

Aim: To describe the rate of in-hospital functional decline (FD) and the influence of different comorbid impairments in older patients hospitalized for acute diseases in a cardiologic department.

Design and Setting: Prospective, cohort study of patients ≥70 years old consecutively admitted in the Cardiology Department of a university hospital in Madrid, Spain.

Methods: We evaluated the following geriatric syndromes: visual and hearing impairment, disability in any activity of daily living (ADL), mobility disability, cognitive impairment (MMS<22), and depressive symptoms (Yessavage test >6). FD was considered when punctuation in ADL independence scale was lower at discharge than on admission. Demographic and clinical characteristics, cause of admission and length of stay were also studied.

Results: Between January and March 2008, 260 patients were included, with a mean age of 80±5 years. Causes of admission were heart failure (44%), acute coronary syndrome (38%), arrhythmias (8%), and other (9%). FD during hospitalization occurred in 16% of patients, with differences according to admission diagnosis (25% in heart failure, 16% in ST-elevation myocardial infarction 5.6% in arrhythmias, p<.001). FD was associated with pre-admission mobility disability, and depressive symptoms (present in 22% and 14% of patients). Multiple regression analysis including diagnosis, impairments on admission, and LOS selected the presence of depressive symptoms as the most powerful independent predictor of in-hospital FD (OR 3.02; 95% CI 1.2-8.1)

Conclusions: One out of six older patients hospitalized in Cardiology lose functionality during hospitalization, more frequently those with heart failure. The presence of depressive symptoms on admission is a strong risk factor.

C78

Optimizing medication management in geriatric patients.

G. Azhar,[1,2] K. Ammons,[1] S. Vire,[1] P. Mendiratta,[2] D. Shams,[2] K. Curseen,[2] J. Wei,[1,2] P. Liem.[1,2] *1. Geriatrics and Extended Care, CAVHS, Little Rock, AR; 2. Geriatrics, University of Arkansas, Reynolds Institute on Aging, Little Rock, AR.*

Objective: The purpose of this project was to institute quality improvement in out-patient medication management at a geriatric clinic for veterans through a better understanding of the Health Care Providers perspectives on the difficulties in medication management which might contribute to polypharmacy.

Methods: A questionnaire was administered to all clinic providers, including physicians and nurse practioners regarding difficulties in the medication management of their geriatric patients plus their perception of polypharmacy. This was divided into factors causing no difficulty with medication management or factors causing difficulty with management.

Results: The results of how each factor made treating the geriatric clinic patients more difficult are tabulated in Table 1.

Our results revealed that the providers find having to teach medical students a significant factor in optimizing medication management in the limited time available. Other significant factors were patients seeing multiple outside(non-VA) providers, and the presence of multiple co-morbid diseases. It is also interesting to note that a lack of family support for a geriatric patient is more significant a factor in medication management for the provider than the cognitive status of the patient.

Conclusion: Our study results suggest that there are a number of potential factors from the providers perspective that could be better addressed to optimize the medication management of geriatric patients. Firstly, the number of students per session per provider should either be reduced or more time should be made available to teaching providers for geriatric patients. Secondly, patients should be encouraged to see providers within the VA facility. Thirdly, interventions to engage the family in the patient's care might be more difficult to achieve and providing home health or nursing home placement might be the only options.

Table 1:

Factors	No difficulty (%)	Difficulty(%)	* p <0.05
Responsibility for students	10	90	*
Length of clinic appointment	30	70	
Patients seeing multiple VA providers	40	60	
Patients seeing multiple non-VA providers	5	95	*
The availability of clinic slots	35	65	
Cognitive status of the patient	30	70	
Lack of family support for patient	20	80	*
Presence of Multiple co-morbid diseases	10	90	*

C79

Parathyroid Hormone Levels and Cognition.

J. Burnett,[1,4] S. M. Smith,[2,4] K. Aung,[3,4] C. B. Dyer.[1,3] *1. Internal Medicine, Division of Geriatric and Palliative Medicine, The University of Texas Health Science Center at Houston, Houston, TX; 2. Human Adaptation and Countermeasure Division, National Aeronautics and Space Administration (NASA)-Johnson Space Center, Houston, TX; 3. Internal Medicine, The University of Texas Health Science Center at San Antonio, San Antonio, TX; 4. The Consortium for Research in Elder Self-Neglect of Texas, Houston, TX.*

Supported By: NIH Grant# P20-RR020636

Background: Hyperparathyroidism is a well-recognized cause of impaired cognition due to hypercalcemia. However, recent studies have suggested that perhaps parathyroid hormone itself plays a role in cognition, especially executive dysfunction. The purpose of this study was to explore the relationship of parathyroid hormone levels in a study cohort of elders with impaired cognition. Methods: Sixty community-living adults, 65 years of age and older, reported to Adult Protective Services for self-neglect and 55 controls matched (on age, ethnicity, gender and socio-economic status) consented and participated in this study. The research team conducted in-home comprehensive geriatric assessments which included the Mini-mental state exam (MMSE), the 15-item geriatric depression scale (GDS), the Wolf-Klein clock test and a comprehensive nutritional panel, which included parathyroid hormone and ionized calcium. Students t tests and linear regression analyses were performed to assess for bivariate associations. Results: Self-neglecters (M = 73.73, sd=48.4) had significantly higher PTH levels compared to controls (M =47.59, sd=28.7; t=3.59, df=98.94, p<.01). There was no significant group difference in ionized calcium levels. Overall, PTH was correlated with the MMSE (r=-.323, p=.001). Individual regression analyses revealed a statistically significant correlation between PTH and MMSE in the self-neglect group (r=-.298, p=.024) and this remained significant after controlling for ionized calcium levels in the regression. No significant associations were revealed in the control group or among any of the other cognitive measures.

Conclusion: Parathyroid hormone may be associated with cognitive performance.

C80

Homocysteine and Cognitive Performance in Elders with Self-Neglect.

J. Burnett,[1,4] S. M. Smith,[2,4] K. Aung,[3,4] C. B. Dyer.[1,4] *1. Internal Medicine, Division of Geriatric and Palliative Medicine, The University of Texas Health Science Center at Houston, Houston, TX; 2. Human Adaptation and Countermeasure Division, National Aeronautics and Space Administration (NASA)-Johnson Space Center, Houston, TX; 3. Internal Medicine, The University of Texas Health Science Center at San Antonio, San Antonio, TX; 4. The Consortium for Research in Elder Self-Neglect of Texas, Houston, TX.*

Supported By: NIH Grant#P20-RR020636

Background: Elevated plasma homocysteine has been associated with altered cognitive performance in older adults. Elders referred to Adult Protective Services (APS) for self-neglect have been reported to have elevated plasma homocysteine levels and to suffer from cognitive impairment. This study assesses the association, if any, between plasma homocysteine and cognitive performance among elders with self-neglect. Methods: Sixty-five community-living adults, 65 years of age and older, reported to Adult Protective Services for self-neglect and 64 matched controls (matched for age, ethnicity, gender and socio-economic status) consented and participated in this study. The research team conducted in-home comprehensive geriatric assessments which included the Mini-mental state exam (MMSE), the 15-item Geriatric Depression Scale (GDS), the Wolf-Klein Clock Drawing Test (CDT) and a comprehensive nutritional biochemistry panel, which included plasma homocysteine. Student's t tests and Pearson correlations were conducted to assess for bivariate associations. Results: Elders with self-neglect had significantly higher plasma homocysteine levels (M=12.68umol/L, sd=4.4) compared to the controls (M=10.40umol/L, sd=3.61;t=3.21, df=127, p=.002). There were no statistically significant associations between cognitive performance and plasma homocysteine in the self-neglect group, however there was a significant correlation between plasma homocysteine and the CDT among the controls (r=-.296, p=.022). Conclusion: Mean plasma homocysteine levels were significantly higher in elders with self-neglect, however, they do not appear to be related to cognitive performance, indicating that cognitive impairment in elder self-neglect involve mechanisms other than hyperhomocysteinemia. These findings warrant further investigation.

C81

A missed diagnosis: the prevalence of dementia in a population of older veterans.

J. Burns,[1,2] J. Howe,[2,1] E. Clark.[2,1] *1. Geriatrics, Mount Sinai School Of Medicine, New York, NY; 2. G.R.E.C.C., J.J. Peters Bronx V.A. Medical Center, Bronx, NY.*

Although there are no current guidelines for the routine cognitive screening of older adults, the burden of dementia is significant for patients and their families. Cognitive impairment can affect an individual's ability to manage medical conditions and to live safely and independently in the community. The initial signs of dementia may be subtle and can be easily missed by busy primary care providers(PCPs).

The Comprehensive Geriatric Assessment(CGA) is a basic, yet important tool of geriatrics. Recent studies on CGAs have shown that their clinical effectiveness is varied. These results may reflect inadequate implementation of assessment recommendations. In order to address this issue, the Bronx VAMC developed an "embedded clinic" model for providing CGAs. In these clinics, geriatricians see patients in the offices of their own PCPs with their permission. This eliminates the need for a separate clinic and facilitates the sharing of information.

As an initial evaluation of this model, we examined its success in identifying previously undiagnosed dementia.

Between September 2006 and August 2008, 122 patients were evaluated by the geriatrics team. The patients had a mean age of 82 and an age range of 58 to 95. All patients were male. The consultative team initiated work-up, referral and treatment for identified geriatric syndromes.

Medical records of patients were reviewed for the one year preceeding their visit for CGA to identify diagnoses and/or treatment of cognitive impairment or depression. Similarly, following the consultative visit with the geriatrics team, the chart was reviewed separately.

Among 122 consults, 44 diagnoses of dementia and 7 diagnoses of potential dementia were made. Twenty-three of the 51 diagnoses(~45%)had been previously documented based on chart review.

Approximately 42% of all referrals were diagnosed by the consultative team with at least some degree of dementia. Among the diagnoses of dementia, fewer than half were previously noticed by primary caregivers. As PCP referrals were made specifically for CGA, the pretest probability of an individual having dementia may have been higher than in the general population. More timely diagnosis of dementia enables providers to identify unmet care needs and more successfully intervene on behalf of their patients. This might ultimately enable more older adults to remain independent in the community.

C82

Older Fallers who Refuse Transport after Accessing 9-1-1.

L. Lawhorne, G. Gataric. *Geriatrics, Wright State University, Dayton, OH.*

Supported By: No financial disclosures.

Background/Purpose: Falls among community-dwelling older adults are common and associated with poor outcomes. Fallers who call 9-1-1 and are not transported for further evaluation and treatment represent a potentially vulnerable group in that they are likely to call 9-1-1 again within 2 weeks and are more likely to be hospitalized (OR=4.7) or to die (OR=5.4) when compared with callers who are transported. The purpose of this study is to determine the frequency of transport refusals in Ohio and characteristics of callers who refuse transport.

Methods: This is a descriptive study using entries in the Ohio Emergency Medical Services Incident Reporting System (2003-2008). Patients born in 1945 or before and who fell at home were included in the analysis.

Results: 11,672 incidents involving callers who were born in 1945 or before and who fell at home were analyzed. 173(1.5%) refused transport. These 173 incidents were matched with a sample of 346 incidents by county, gender, and race. Significant differences between transport refusals and transports were (1) 65% of refusals had an assessment by the responding Emergency Medical Technician (EMT) of "no cause for concern" compared to 4% of transports (p=0.001) and (2) transports were more likely to have an initial systolic blood pressure > 160 (23% vs. 8%, p=0.004).

Conclusion: The 1.5% refusal rate in this study is lower than that reported in the literature (5-20%). In addition, the prevalence of the "no cause for concern" impression (65%) on the part of responding EMTs is disturbing given the poor outcomes of non-transported fallers reported in the literature.

C83

Neuropsychological Predictors of Caregiver Burden.

N. Courtright,[1] J. E. Schillerstrom.[2] *1. Medical Student, UTHSCSA, San Antonio, TX; 2. Psychiatry, UTHSCSA, San Antonio, TX.*

Supported By: Medical Student Training in Aging Research (MSTAR) Program

Purpose: Although multiple risk factors for caregiver burden have been reported, most studies do not describe neuropsychological risk factors beyond those of global cognition or depression. The purpose of this study was to determine the relationship between executive function, global cognition, caregiver reported behavioral disturbances, and mood, and caregiver burden.

Methods: N=10 elder patient/caregiver dyads seen in either a geriatric psychiatry or oncology clinic were recruited. Each subject was administered a neuropsychological battery consisting of The Executive Interview (EXIT25) which measures executive function, the Mini Mental State Exam (MMSE) which measures global cognition, and the Geriatric Depression Scale (GDS). Caregivers were administered the Frontal Systems Behavioral Scale (FrSBe) which assesses the severity of apathy, disinhibition, and executive function behavioral impairments and the Zarit Burden Interview (ZBI) to document caregiver burden. Pearson correlation coefficients were calculated to determine the relationship between caregiver burden and neuropsychological impairment.

Results: The average age of our sample was 77.4 (SD 4.1) years and the average number of caregiving hours was 7.4 (SD 3.5). Among the behavioral measures, the FrSBe disinhibition ($r = 0.79, p = 0.01$) and executive dysfunction ($r = 0.76$, $p = 0.01$) subscales correlated significantly with caregiver burden. The EXIT25 ($r=0.60$, $p = 0.07$) and Geriatric Depression Scale ($r = -0.58$, $p = 0.08$) approached significant correlations with caregiver burden. The EXIT25 correlated significantly only with the executive subdomain of the FrSBe ($r = 0.71$, $p = 0.02$). Subject age, number of hours spent caregiving, MMSE performance, and apathy related behaviors did not correlate with caregiver burden.

Conclusions: Executive function impairments as measured with cognitive and behavioral assessments seem to be particularly relevant to caregiver burden. This suggests that pharmacological, behavioral, and caregiver education interventions targeting executive deficits are potential strategies for reducing caregiver burden.

C84

Improved detection of delirium through the use of a Geriatric consult service.

P. A. Gossett, C. S. Maxwell, D. Kropp, S. Hazelett, K. Allen. *Senior Services, Summa Health Systems, Akron, OH.*

Pat Gossett, MSN
Catherine Maxwell, MD
Denise Kropp, MA
Susan Hazelett, MS
Kyle Allen, DO
Summa Health System

Objective: To determine whether the use of a Geriatric consult service improves detection of delirium in hospitalized older adults.

Background: The prevalence of delirium in acute care hospitals has been reported to range from 10-24%. Delirium has been shown to be an independent predictor of cognitive and functional status decline, nursing home placement, and increased mortality during the year following an acute hospitalization, in the presence or absence of dementia. Not only are delirious patients at greater risk of negative health outcomes, but their length of stay in healthcare institutions is often increased and their care is also often more costly. Yet delirium remains under-diagnosed and under-treated in acute care hospitals.

Methods: Retrospective chart review of all patients seen by a Geriatric consult service from January, 2006 to October, 2008. The diagnosis of delirium as noted by the attending physician was compared to the diagnosis noted for the same patient by the Geriatric consult team. McNemar's test was used as a measure of agreement. Differences in proportions between groups were compared using Chi Square.

Results: 2215 patients were seen by the Geriatric consult service during the study period. Attending physicians noted delirium in 258 of these patients while the Geriatric consult team noted delirium in 861 of the same patients ($p<.001$). These 861 patients were also found to have the following comorbid geriatric syndromes: depression (37%), medication issues (11%), functional decline (42%), alcohol or drug abuse (4.5%), trauma (6.6%), and insomnia (10%). Dementia was found to be a comorbid geriatric syndrome in 55% of the patients diagnosed with delirium by the consult team. A significantly greater proportion of patients with delirium were discharged to a skilled nursing facility ($p<.001$) and expired during their hospitalization ($p<.001$).

Conclusions: In the absence of a Geriatric consult service, delirium continues to be under-diagnosed by attending physicians. It is possible, however, that the physicians mistook delirium for dementia since such a high percentage of patients with delirium also had dementia. This study provides further evidence of the negative outcomes that result from delirium during an acute hospital stay.

C85

Socio-demographic Disparities in Geriatric Conditions Among Older Adults with Diabetes in the Health and Retirement Study.

P. G. Lee,[1,2] C. Blaum,[1,2] C. Cigolle.[1,2] *1. Internal Medicine, University of Michigan, Ann Arbor, MI; 2. GRECC, VA Health Care System, Ann Arbor, MI.*

Supported By: John A. Hartford Foundation;

National Institute on Aging-sponsored University of Michigan Older Americans Independence Center Research Career Development Core;

K30(NIH)Clinical Training Research program,University of Michigan.

Several socio-demographic characteristics have been shown to contribute to the disparities in glycemic control in older Americans. Geriatric conditions are prevalent in older patients with diabetes mellitus. The socio-demographic disparities in geriatric conditions among patients with diabetes are unclear. We hypothesized that socio-demographic disparities exist among patients with different number of geriatric conditions (GCs).

We performed secondary data analysis of a nationally representative survey (a supplement to the Health and Retirement Study) of 1,901 Americans with diabetes mellitus who were aged 51 years and older. Multivariate regression models were constructed with survey weights to examine socio-demographic differences in respondents with different numbers of GCs, adjusting for co-morbidities, measured glycemic level, diabetes duration, and insulin use. Socio-demographic characteristics included age, gender, race, education, and total net worth. GCs included urinary incontinence, cognitive impairment, injurious falls, depression, low body-mass-index, pain, hearing and vision impairments.

Age, education level, and total net worth were associated with the number of GCs (all $p<0.05$) in both non-adjusted and adjusted models. After adjusting for other covariates, co-morbidities and insulin use were also found to be associated with the number of GCs (all $p<0.05$), where race, gender, diabetes duration, and glycemic levels were not significantly associated with the number of GCs ($p>0.05$).

Our analyses of this nationally representative survey confirmed our hypothesis that socio-demographic disparities in geriatric conditions exist among older Americans with diabetes, i.e., those with more geriatric conditions are older, with lower education level, poorer, and have more co-morbidities.

C86

Does Prefrail and Frail Status Predict Mortality in Older Mexican Americans with Cognitive Impairment?

R. A. Samper-Ternent, S. Al Snih, K. S. Markides, K. J. Ottenbacher. *Sealy Center on Aging, University of Texas Medical Branch, Galveston, TX.*

Supported By: This study was supported by grants, AG10939 and AG17638, from the National Institute on Aging, US, and in part by the UTMB Center for Population Health and Health Disparities 1P50CA105631-02. Dr. Rafael Samper-Ternent is supported by a fellowship from the National Institute on Disability and Rehabilitation Research (H133P040003). Dr. Al Snih is supported by the Building Interdisciplinary Careers in Women's Health Research (BIRCWH) (Grant 5K12HD05023). Dr. Ottenbacher is supported by an Independent Scientist Award (K02 AG019736).

Objective: To examine the association between frailty status and mortality over a ten year period in older Mexican Americans with cognitive impairment.

Design: Data used were from the Hispanic Established Population for the Epidemiological Study of the Elderly (H-EPESE) (1995-96 - 2004-05).

Setting: Five southwestern states: Texas, New Mexico, Colorado, Arizona, and California.

Participants: Community dwelling Mexican American men and women aged 67 and older with a Mini Mental State Examination (MMSE) < 21 in the second wave of the study.

Measurements: Cognitive impairment was determined by a score in the MMSE < 21. Frailty defined as three or more of the following components: 1) unintentional weight-loss of > 10-lbs, 2) weakness, 3) self-reported exhaustion, 4) slow walking speed, and 5) low physical activity level. Sociodemographic characteristics (age, gender, marital status and education), chronic medical conditions (hypertension, stroke, cancer, diabetes, hip fracture and arthritis) and disability (difficulty with Activities of Daily living or Instrumental Activities of Daily Living) were used as covariates. Mortality was determined using the National Death Index or by proxy.

Results: Frail older Mexican Americans with cognitive impairment are at higher risk for mortality (HR=1.68, 95% CI, 1.06 – 2.66) when compared with prefrail subjects (HR=1.08, 95% CI, 0.75 – 1.58) after controlling for sociodemographic variables and medical conditions. The relationship between frail status and mortality is mediated when IADL disability was included in the equation.

Conclusion: Older Mexican Americans with cognitive impairment have a different mortality profile depending on their frailty status. The prefrail status is an interesting state where interventions might impact mortality and promote transitions to better health. Cognitive impairment among older Mexican Americans needs to be further analyzed to determine useful interventions that improve their quality of life.

C87

Hospital use, institutionalisation and mortality associated with delirium: a cohort study.

E. Eeles,[2,1] R. E. Hubbard,[2,1] S. White,[1] M. S. O'Mahony,[1] A. Bayer.[1]
1. Geiatric Medicine Research Unit, Dalhousie University and QE II Health Sciences Centre, Halifax, NS, Canada; 2. Geriatric department, University Hospital of Wales, Cardiff, United Kingdom.

Introduction

Delirium is associated with adverse health outcomes including institutionalization and death. The pattern of health care need prior to delirium has not previously been reported. An analysis of the acute care need health before and after an episode of delirium is reported in association with 5 year survival and institutionalization rates.

Methods

In a cohort study of delirium compared with non-delirious patients over the age of 75 years we calculated the number of acute days in hospital per year in the 4 years before and 5 years after index admission. We calculated time to death and institutionalisation and hazard ratio for death after adjustment for confounders in the five years following delirium.

Results

Delirium was detected in 103 patients and excluded in 175. Median age was 81 years; 117 men. Outcome data was obtained for 278 patients (98%). Median time to institutionalisation or death was 91 days (95%CI: 48.8-133.2) for those with delirium compared to 1309 days (95% CI: 946.7-1671.3) for those without (p<0.001). Delirium was associated with a higher adjusted risk ratio for death (HR 2.7 (2.0-3.8)).

Conclusion

The impact of delirium is considerable and extends beyond the acute care setting.

Table showing a comparison of hospital stay in relation to delirium status; before and after index admission

Year before or after index admission	Delirium		No Delirium		p value
	mean number of days in hospital per year	Number of patients	mean number of days in hospital per year	Number of patients	
-4	5.3	103	4.4	175	0.75
-3	6.4		5.1		0.08
-2	7.3		6.4		0.82
-1	13.5		10.3		0.61
+1	30.3	67	17.0	165	0.01
+2	20.0	35	10.6	136	0.34
+3	3.3	21	11.7	110	0.50
+4	10.1	14	13.4	94	0.44
+5	9.7	11	13.4	87	0.42

C88 New Investigator Awardee

Frailty Transitions in the San Antonio Longitudinal Study of Aging.

S. E. Espinoza, H. P. Hazuda. *Medicine, The University of Texas Health Science Center at San Antonio, San Antonio, TX.*

Supported By: National Institutes of Health: NIA R01-AG10444, NIA R01-AG16518, NCRR M01-RR01346, and 1KL2RR025766-01.

Background: It has been reported that transitions in frailty states over time are common; however, which individual frailty characteristics are most likely to change is unknown. Such information may inform development of targeted interventions to prevent, delay, or reverse progression toward frailty.

Methods: Subjects were 368 community-dwelling Mexican American (MA) and European American (EA) older adult (65+) participants in the baseline (1992-96) and 1st follow-up (F/U) (2000-01) exams in the San Antonio Longitudinal Study of Aging. Using previously validated criteria, frailty was defined as presence of 3+ of 5 characteristics: slow walking speed, weak grip strength, low energy expenditure, self-reported exhaustion, and weight loss. Pre-frailty was defined as presence of 1 or 2 and non-frail as absence of all 5 characteristics. Transition scores were calculated for progression (non-frail to pre-frail or frail; pre-frail to frail) or regression (frail to pre-frail or non-frail; pre-frail to non-frail) in frailty category and individual frailty characteristics over an average 7-year follow-up period. Chi-squared tests were used to examine transitions in frailty and individual frailty characteristics for the full sample and by ethnicity.

Results: Overall at baseline, 42.1% were non-frail, 52.3% pre-frail, and 4.6% frail; at F/U, 31.8% were non-frail, 50.5% pre-frail, and 17.7% frail. Of the 124 who progressed in frailty category, 25.7% developed slowness, 23.4% weakness, 24.8% low energy expenditure, 35.8% exhaustion, and 58.4% weight loss. Of the 44 who regressed in frailty category, 31.8% reversed slow walking, 25% weakness, 27.3% low energy expenditure, 27.3% exhaustion, and 20.5% weight loss. More MAs than EAs transitioned across frailty categories: 14.4% of MAs vs. 9.4% of EAs regressed, 37.4% vs. 30.4% progressed (p=0.055). For transitions in individual characteristics, a significant ethnic difference was observed only for weakness: 11.4% of MAs vs. 3.9% of EAs regressed, 12.7% vs. 8.3% progressed (p=0.002).

Conclusions: Regardless of ethnic group, improved walking speed is a key characteristic of regression in frailty category; weight loss and exhaustion are key characteristics of progression. MAs compared with EAs had significantly more transitions in frailty category, but transitions in individual characteristics were similar except for weakness. These data may suggest appropriate targets for intervention.

C89

Are falls occurring during post-acute care associated with rehabilitation outcomes?

S. Rochat, E. Martin, R. Dreher, P. Guillemin, C. Hoskovec, C. J. Bula. *Service of Geriatric Medicine, Lausanne, Switzerland.*

Supported By: nihil

Objective: The objective of this study was to investigate the association between falls occurring during post-acute care and rehabilitation outcomes.

Methods: Over a 5-year period (2003-2007), all falls (n=1217) were prospectively recorded among 4026 patients consecutively admitted to post-acute rehabilitation. Data on patients' characteristics, including health, functional, cognitive and affective status were systematically collected using standardised instruments. Rehabilitation outcomes considered were *length of stay, discharge destination, and rehabilitation success*, defined as at least 50% gain in the possible improvement in Barthel score (difference between maximal and admission Barthel score).

Results: Overall, 11.4% (458/4026) patients fell once and 6.3% (253/4026) were multiple fallers. The fall incidence rate was 12.6/1000 bed-days. Compared with non-fallers, one time fallers and multiple fallers, respectively, were older (80.5±7.9 vs 82.1±7.8 vs 82.7±7.4 years; p<.001), less frequently women (69.0 vs 63.9 vs 59.1%; p<.001), more often cognitively impaired (MMSE<24: 26.1 vs 46.2 vs 55.0%; p<.001), and had more frequently depressive symptoms (GDS>5: 16.7 vs 24.4 vs 25.1%; p<.001). They also had lower Barthel score at admission (63.8±20.4 vs 54.0±19.3 vs 47.0±18.3; p<.001). Compared to non fallers, one-time and multiple fallers had prolonged lengths of stay by an average of 4.1 days (95%CI 3.2-5.0; p<.001) and 7.7 days (95%CI 6.5-9.0; p<.001), respectively, independent of demographics, comorbidities, affective, cognitive and functional status. One-time (adjOR 0.68, 95%CI 0.53-0.87; p=.003) and multiple fallers (adjOR 0.47, 95%CI 0.35-0.64; p<.001) were also less likely to be discharged home after rehab compared to non fallers in multivariate analysis. However, only multiple fallers had significantly decreased odds to achieve rehab success (adjOR 0.65, 95%CI 0.47-0.90; p=.009).

Conclusion: In this population of frail older patients admitted to post-acute rehabilitation, fallers had longer length of stay and were less likely to be discharged home, independent of demographics, health, functional, cognitive, and affective status. Interestingly, only multiple fallers were less likely to achieve rehab success. These results suggest that falls prevention programs in similar setting should primarily target these high risk patients.

C90

Use of cues/prompts on post-fall assessment forms significantly increases the collection of information important for nurse and physician intervention.

T. R. Breen, E. Baum, S. Hazelett. *Senior Services, Summa Health Systems, Akron, OH.*

Purpose: To compare recording of guideline-recommended data among post-fall assessments that use cues to prompt documentation vs uncued narrative.

Background: Falls are a significant source of morbidity and mortality for older adults, especially those in long term care (LTC) facilities. LTC facilities commonly identify fall risk factors upon admission and initiate individualized fall prevention programs, yet falls occur. Post-fall assessment (PFA) and intervention are part of continued fall risk reduction. Guideline-based PFA tools have been incorporated into comprehensive falls management programs. This study seeks to determine the extent of guideline-based data collection among LTC facilities and identify ways to optimize the data collection process.

Methods: PFAs were reviewed from each of five NE Ohio LTC facilities (N=78). Twenty-five data categories were adapted from recent evidence based guidelines to comprise a score sheet used to determine whether pertinent information was gathered after each fall. The frequency with which data for each category was collected when a cue was present on the PFA form was compared to the frequency with which it was collected if no prompt was present using Chi Square.

Results: All assessments recorded whether the fall was observed, where and when it occurred, mental status, vital signs, nurse and physician notification, assessment, and action taken. Data included significantly more often when a cue was present on a form (vs unprompted narrative) were footwear (p=0.01), and (all p<.001) floor condition, alarm present, baseline function, evidence of acute illness, medicine review, orthostatic vital signs, neurological examination, and history of falls. There was no significant difference comparing forms with cues vs narratives in recording results for activity, trip/slip, pain, other notable symptoms, assistive device and if it was in use, and examination for injury. Other complaints were recorded in narrative sections in all assessments.

Conclusions: Pertinent PFA data are more likely to be collected if cues/prompts are present on the assessment form. Our sampled LTC facilities demonstrate substantially improved post-fall assessment documentation compared to those reported in the literature before there were easily accessible standardized post-fall assessment forms.

C91

The Prognostic Value of Comorbidity on Pressure Ulcers in Demented Patients with Percutaneous Endoscopic Gastrostomy Feeding.

T. Urphanishvili,[1,2] M. Mozumder,[1,2] P. Patel,[1,2] A. Nair,[1,2] S. Ajmal,[1,2] M. Sedlackova.[1,2] *1. Coler-Goldwater Specialty Hospital and Nursing Facility, New York, NY; 2. Geriatric Medicine, NYU School of Medicine, New york, NY.*

Background: We have previously shown that percutaneous endoscopic gastrostomy (PEG) feeding showed no effect on pressure ulcers (PUs) in patients with advanced dementia. The aim of this study was to investigate the prognostic value of comorbidity on PUs in demented patients with PEG feeding.

Methods: There were 79 demented patients ≥ 65 years who received PEG at Coler-Goldwater Specialty Hospital and Nursing Facility between January 2003 and December 2006. Of these patients, 47 (59%) were analyzed and included in the study. The remaining 32 patients were excluded because of missing data, death or loss to follow up. Charts were reviewed for presence or absence of any PUs, both at the time of PEG insertion (baseline) and the 6 month follow-up. The study population was divided into 2 groups: a group without PUs at baseline (n = 20) and a group with PUs at baseline (n = 27). Chronic burden of comorbidities was assessed using the Cumulative Illness Rating Scale for Geriatrics (CIRS-G).

Results: There was a significant difference in CIRS-G scores between the two groups at baseline (21.2 ± 4.6 vs. 24.3 ± 4.9; p<0.05). In the group without PUs, 40% (8 of 20) developed PUs at follow-up. In the group with PUs, 85% (23 of 27) were unchanged and only 15% (4 of 27) healed at follow-up. An overall positive significant correlations existed between CIRS-G scores and the development of PUs at follow-up (p<0.05).

Conclusions: This study shows that comorbidities can be used as a predictor of development and progression of PUs in the demented patients with PEG feeding.

C92

Older African American Men Significantly Underestimate Their Risk of Prostate Cancer At The Time of Biopsy.

W. Dale,[1] J. Hemmerich,[1] F. Ahmad.[2] *1. Medicine, The University of Chicago, Chicago, IL; 2. Pritzker School of Medicine, The University of Chicago, Chicago, IL.*

Supported By: Pfizer

Background: Although Older African American (AA) men are more likely to develop and die of prostate cancer, it is not clear that

they appreciate their high risk of disease at the point in time when they are receiving a prostate needle biopsy. At the time of biopsy, according to guidelines, men should be well-informed, including knowing they are at higher risk of prostate cancer.

Methods: Older men were recruited for in-person surveys at urology clinics at the time of their prostate biopsies. Surveys were conducted immediately following the biopsy and clinical debriefings, but before the patient recieved the results. The most common reason for biopsy was an elevated PSA score, with 80% of those above the 4.0 cutoff. The survey consisted of socio-demographics (age, ethnicity, income, education, marital status), health and clinical status (current health state, presence and severity of urinary and sexual symptoms, functional status), a six-item physical disability screen, standardized measurements of general (HADS-Anxiety) and prostate disease-specific (MAX-PC) anxiety as well as several questions about the patients' predictions regarding biopsy result, diseases prognosis, and hypothetical treatment decisions. The primary outcome variable consisted of a question asking participants to estimate the chance that they have prostate cancer on a 0-100% scale with answer options at the 10%-point increments. A median regression analysis was used to determine significant predictors of the participants' estimation of their likelihood of receiving a positive biopsy.

Results: Participants (n = 160; 43% AA and 57% white) had an average age of 70±4.4. HADS-Anx and MAX-PC were rather highly correlated (r=.70, p<.001). Fifty-six percent of AA men indicated they had 0% chance of having prostate cancer ("impossible") as compared to 27% of white men. Significant predictors of lower estimates of cancer likelihood included AA ethnicity, PSA, lower anxiety, and (all at p<.05).

Conclusion: AA rated their likelihood of being diagnosed with prostate cancer significantly lower than white patients, and that higher anxiety levels were predictive of expectation of a positive diagnosis. These findings suggest that men at biopsy for prostate cancer have limited understanding of their risk of disease and that anxiety is associated with expectation of a positive diagnosis.

C93

Pilot Testing of the PRAISEDD Intervention Among African American and Low Income Older Adults.

M. Shaughnessy,[1] B. M. Resnick,[2] E. Galik,[2] A. Scheve,[2] R. Fittin,[2] T. Morrison,[2] K. Michael,[2] C. Agness.[3] *1. GRECC, Baltimore VAMC, Baltimore, MD; 2. Organizational Systems and Adult Health, University of Maryland School of Nursing, Baltimore, MD; 3. School of Pharmacy, University of Maryland, Baltimore, BAltimore, MD.*

Supported By: Sonya Ziporkin Gershowitz Chair in Gerontological Nursing at the University of Maryland, Baltimore.

Background and research objective: The incidence of coronary vascular disease (CVD) is particularly high among African American (AA) older adults, and these individuals are least likely to have access to CVD prevention activities. The purpose of this study was to test the intervention People Reducing Risk and Improving Strength through Exercise, Diet and Drug Adherence (PRAISEDD) which is geared to increasing adherence to CVD prevention behaviors among AA and low income older adults.

Subject and methods: This study was done in a senior housing site and used a single group repeated measures design with testing done at baseline and then following a 12 week intervention period. A total of 22 individuals consented and were eligible to participate in the study. The participants had a mean age of 76.4(SD=7.6), and the majority was female (64%) and AA (86%).

Results and Conclusions: There was a significant decrease in systolic (p=.02) and diastolic blood pressures (p=.01) and non-significant improvements in time spent in exercise (p=.65), cholesterol intake(p=.09), sodium intake (p=.77), medication adherence (p=.18), mental (p=.11) and physical health status (p=.74), gait (p=.62), and strength(p=.38). There was generally no or minimal change in self-efficacy and outcome expectations across all three behaviors. Given the feasibility and potential utility of this intervention, future research is needed to test this study using a randomized controlled design with sufficient sample to detect differences over time.

C94

Osteoporosis Health Care Disparities in Postmenopausal Women.

Q. Cao, I. Hamrick, G. A. McLeod, D. Cummings. *Family Medicine, Geriatric Division, Brody Medical School, East Carolina University, Greenville, NC.*

Supported By: Dr. Hamrick is supported by the Geriatric Academic Career Award.

Background: Racial Disparities have been indentified in a number of areas in clinical medicine. One study examined DXA data and showed 19.4% (n=46) of the screened women were African American, and 80.6% (n=191) were Caucasian. To confirm these disparities this study examined a larger database of an academic primary care clinic.

Methods: Of 4748 charts of women 60 years old and older, we initially analyzed 1000 race- matched clinical charts of African American (AA) and Caucasian (C) women in detail. After finding significantly older and heavier women of African American race, we pulled a smaller age-matched group of 854 women. We further analyzed an age and BMI matched subset of 644. We compared the DXA screening referral rate and results, follow up rate, and medication prescribing for low bone density between African American and Caucasian women.

Results: Among the initial 1000 women only 29.8% AA have been referred to DXA compared to 38.4% C (p<0.05) and 20.8% AA vs. 27.0% C (p<0.05) completed the test. Among those with a diagnosis of osteoporosis, AA were less likely (although not significant) to be receiving medication (79.6% vs. 89.2%, P<0.05) as were those with osteoporosis or osteopenia (78.5% vs. 87.8%, p=0.051).

Among age matched women (n=854) 30.9% AA have been referred compared to 39.6% C (p<0.01) and 22.0% AA vs. 26.9% C (p=0.111) completed their DXA. Among those with a diagnosis of osteoporosis, AA were less likely to receive medication (78.8% vs. 90.7%, P=0.073) as were those with osteoporosis or osteopenia (78.4% vs. 88.5%, p<0.05).

Among age and BMI matched women (n=644) 38.5% AA have been referred compared to 46.9% C (p<0.05) and 28.6% AA vs. 33.9% C (p=0.174) completed their DXA. Among those with a diagnosis of osteoporosis, AA were less likely to receive medication (77.6% vs. 91.3%, P=0.06) as were those with osteoporosis or osteopenia (78.3% vs. 89.6%, p<0.05).

There was no difference in follow up visit pattern between races.

Conclusion: significantly fewer African American women receive DXA screens and are treated for osteoporosis or osteopenia even though national guidelines do not differentiate by race.

C95

Puzzling Pieces: Validating the VA Long Term Care (LTC) Home and Community Based Care (HCBC) Projections.

B. kinosian,[1,3] E. Stallard,[2] A. Canamucio,[3] D. Polsky,[1,3] K. Manton.[2] *1. University of Pennsylvania, Philadelphia, PA; 2. Duke, Durham, NC; 3. Philadelphia VAMC, Philadelphia, PA.*

Supported By: VA HSR&D

VA ADUSH Office of Policy and Planning

Objective: Evaluation of LTC projections for HCBC using available CMS and VA administrative data.

Methods: We developed a static projection model, using the 2002 enrolled veteran population stratified by

age/gender/priority/VISN. We imputed disability and marital status from the 1999 National Long Term Care Survey (NLTCS) for those age 65+, and the National Health Interview Survey for those < 65. We constructed HCBC use rates for each age/gender/marital status/priority/disability level from the 1999 NLTCS for those aged 65+ and from the 2000 National Home Care and Hospice Survey (NHHS) for those age < 65. For validation, we matched the 2004 NLTCS with the VA enrollment file, and summarized VA HCBC use among matched survey respondents. We matched the 2004 OASIS file with the 2004 enrollment file, to obtain skilled home health episodes, and imputed Average Daily Census (ADC) based on length of episode and visits. HCBC services were operationalized as Medical (Home Based Primary Care (HBPC),Skilled home health, Hospice) and Supportive(other home health, ADHC, In-home Respite). Additional supportive HCBC from the NLTCS included Assisted Living and formal help. ADC was calculated by using current VA workload recording procedures.

Results: Validation data were reliably available for age 65+, representing 118,300/162,000 ADC (73%). Actual VA supplied HCBC ADC was 17,471,(14% of total) and 16,871 estimated from the NLTCS cohort. Total utilization, using the NLTCS cohort was 118,641 (Medical HCBC ADC 44,962/Supportive HCBC ADC 73,679), and 122,888 using VA/OASIS utilization for Medical HCBC. For HBPC, VA supplied 59.8% of total ADC using the NLTCS cohort (12,041/20,112), indicating frail, enrolled veterans receive a large amount of in-home primary care from non-VA providers. Hospice accounted for nearly 1/4 of Medical HCBC (12,800). Non-Federal sources paid for 46% of formal ADC, while only 26% of ADC for those with 3+ ADL dependencies were provided by formal (paid) help. In 2007, actual VA supplied Medical HCBC was 42% of model projections.

Conclusions: Enrolled veterans receive a large amount of HCBC services, most is informal, with projections closely matching actual ADC, of which VA provided 31% of Medical but 19% of total HCBC, and 59% of in-home primary care in 2004.

C96

What is a Physician-Conducted Medication Review?

D. M. Tarn,[1] D. A. Paterniti,[2,3] R. L. Kravitz,[3] S. Fein,[4] N. S. Wenger.[4] *1. Department of Family Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA; 2. Department of Sociology, University of California-Davis, Davis, CA; 3. Center for Healthcare Policy and Research, University of California-Davis Medical Center, Sacramento, CA; 4. Division of General Internal Medicine / Health Services Research, David Geffen School of Medicine at UCLA, Los Angeles, CA.*

Supported By: Data used in this study were collected with support from the Robert Wood Johnson Foundation (Grant #034384). Dr. Tarn was supported by a UCLA Mentored Clinical Scientist Development Award (5K12AG001004) and by the UCLA Claude D. Pepper Older Americans Independence Center funded by the National Institute of Aging (5P30 AG028748). Dr. Kravitz was supported in part by a mid-career research and mentoring award from the National Institute of Mental Health (1K24MH072756-01).

Context: Guidelines recommend that physicians caring for older patients conduct regular medication reviews, but do not specify the content of these reviews. The medical literature suggests that medication review is an exhaustive evaluation, but what physicians ask about their patients' medication regimens during office visits is not known.

Objective: To empirically identify a set of components that can be used to define an office-based physician-conducted medication review.

Design: Mixed qualitative-quantitative analysis of audio-taped physician-patient encounters.

Setting: Primary care office visits to 28 physicians in 2 healthcare systems in Sacramento, California.

Participants: 100 patients aged 65 and older.

Measurements: Description of physician-conducted medication review components and frequency of occurrence.

Results: We identified 4 themes related to ascertaining patient medications and ten themes of discussion about continued medications. Medication ascertainment efforts occurred in 36 of 100 visits, all medications were mentioned in 54 visits, and medications were considered systematically in 45 visits. For most medications only one or two themes were mentioned, with efficacy and directions being most common. The inductive qualitative review led to an empirically-derived definition of MEDICATION RECONCILIATION (fulfilled in 41 visits): a medication ascertainment effort or mention of all patient medications, plus systematic discussion of most medications. MEDICATION REVIEW – defined as reconciliation plus one theme of discussion for each medication – occurred in 28 visits.

Conclusions: This qualitative analysis of older patient visits suggests that medication reconciliation and medication review can be empirically characterized, and that these tasks can be carried out in routine practice, although they did not occur in most of the visits analyzed. Achievable definitions of medication reconciliation and review might guide monitoring, intervention and electronic medical record development.

C97

Sexual Health Communication between Physicians and Patients over the Age of 65.

E. M. Noble,[1] R. Soriano,[2] V. Parkas.[3] *1. Medical School, Mount Sinai School of Medicine, New York, NY; 2. Brookdale Department of Geriatrics and Adult Development, Mount Sinai School of Medicine, New York, NY; 3. Samuel Bronfman Department of Medicine, Mount Sinai School of Medicine, New York, NY.*

Supported By: Supported by a research grant from the 2008 Medical Student Training in Aging Research (MSTAR) Program.

BACKGROUND: A comprehensive national report published in 2007 in the New England Journal of Medicine, A Study of Sexuality and Health among Older Adults in the United States, found that 73% of subjects aged 57 to 64, and 53% of subjects aged 65 to 74 reported being sexually active within the previous 12 months. The study also found that 30% of all participants reported having discussed sex with a physician since the age of 50. Reasons why sexual health communication over the age of 65 might be important include the following: 1) Sexual dysfunction can be a marker for other health issues; 2) Previous research has indicated that many older adults want to discuss sexual health in medical consults and want physicians to initiate the discussion; 3) The percent of individuals with HIV who are 50 and over is rising. OBJECTIVE: To investigate the factors associated with sexual health communication between patients over the age of 65 and their physicians. METHODS: We used an observational, cross sectional design. A 23 item survey was developed and administered to patients at the Mount Sinai Coffey Geriatrics Practice. The survey measured demographics, the prevalence of sexual activity among patients, the frequency of sexual health communication, and attitudes about the importance of sexual health communication. RESULTS: Of the 31 respondents, 22 (71%) were female. The mean age was 81 years (range: 66-96). 13% of women reported being sexually active within the past year, versus 56% of men. 11 (35%) participants reported having discussed sexual health with a physician since the age of 65. 27 (87%) of individuals believed it would be "very appropriate" or "somewhat appropriate" for their primary physician to ask about sexual health. DISCUSSION: Results from our study reveal that the prevalence of sexual activity among individuals over 65 correlates with age and gender. Males and the "young old" have a higher prevalence of sexual activity. Discussion of sexual health with patients over 65 should address topics of interest among this cohort, including medications and their effect on sexual health, and questions about sexual function.

C98

Integrated Hospital-Based Palliative & Hospice Care Service: Does it Work?

I. J. Paik,[1] H. Mahbub,[1] S. Sultan,[1] J. Petilla,[1] N. Bhardwaj,[1] Q. Ataher,[2] S. Siddiqi,[1] B. Matti-Orozco.[1] *1. Geriatrics, St. Luke's-Roosevelt Hospital Center, New York, NY; 2. Pfizer INc, New yOrk, NY.*

Purpose:

Hospital Palliative Care Services (PCS) and Inpatient Hospice Scatterbed (IHS) can provide both a compassionate & economical service within the acute hospital care environment by decreasing the length of stay (LOS) & eliminating unnecessary tests or procedures. We wanted to further enhance efficiency of both services by integrating them into one in July 2008. This study was conducted to evaluate the effects of the integration on LOS.

Methods:

We retrospectively evaluated the patients' mean total hospital LOS before and after admission to the IHS in both of our institutions (St. Luke's and Roosevelt Hospital Centers), before and after the integration of the PCS and the IHS. We reviewed the charts of all patients admitted to the IHS in both hospitals from January to December in 2007 and from July to September 2008. SAS 9.1 was used to calculate mean (95% CI) LOS in the two periods. The means were compared using t-test.

Results:

The total number of patients admitted to hospice after a palliative care consultation was 53 in 2007, and 68 after the integration in 2008. Mean LOS (95% Confidence Interval (CI)) were 20 (15-25) days and 16 (13-19) days in the two study periods respectively. There was a decrease of 4 days in mean LOS. The mean duration of hospice stay reduced from 8 days before the integration to 4 days after the integration. After the integration, the mean time from hospital admission to PCS consult decreased from 9.5 days to 7 days. Although clinically significant, the differences were not statistically significant ($p>0.05$) probably because of the small sample size.

Conclusions:

Integration of PCS and IHS shortened the duration of the overall hospital LOS and hospice LOS. The time to palliative consult after admission was also decreased. This indicates that such integrated service may be effectively used to provide more comprehensive and economical care to patients by decreasing LOS.

C99

Quality Improvement Project to Achieve Adequate Vitamin D Supplementation in Residents of Long Term Care Facilities.

J. Judge,[1] M. Mary,[2] D. Mosley,[2] D. Martin.[2] *1. Evercare, Hartford, CT; 2. Evercare, Minnetonka, MN.*

Supported By: This was a QI project supported by Evercare. No pharmaceutical support was requested or recieved.

QI Goal: To achieve adequate Vitamin D3 supplementation for >80% of Evercare members residing in SNFs in 5 Northeast States (n = 7473), and to reduce fall injuries.

Background: Vitamin D deficiency and insufficiency is common among SNF residents taking Vitamin D supplements of 18,000 to 24,000 IU monthly. High potency formulations available in Europe were not available in US.

Methodology: A source of Cholecalciferol (D3) 50,000 IU capsules was identified, to deliver a low cost (~ $2. 00 annual), low burden (12 monthly capsules) method of supplementation.

Process of Roll out: Evercare Medical Directors at each of 5 sites received training and materials to support a roll out in individual SNFs. Evercare NPs entered ordered dose into Electronic Medical Record.

Outcomes at 12 months- sites had variable success- from 25% to 52% of members achieved monthly goal of 50,000 IU, as measured by doses entered in EMR. This is a recognized underestimate.

Next Steps:

1.Complete entry of Supplement into EMR by NPs. Claims system will track Hospitalizations, ER visits, and Skilled Episodes associated with fractures and fall injuries in year preceding and year following implementation.

2. Program is being rolled out in additional 32 states .

Barriers	Strategy to overcome barrier
Pharmaceutical suppliers and LTC pharrmacies did not recognize the small, single source pharmaceutical manufacturer	6-9 month delay. SNFs needed to order directly from manufacturer.
LTC pharmacies supplied unit doses, which increased annual cost from $2 to more than $30	Telephone discussions resolved - now supplied in Bulk - one bottle per nursing unit.
D3 is OTC, not covered by Part D. SNF must pay for Vitamin D, or bill to patient, and in some states to Medicaid. The cost of billing exceeded revenue	Stressed reduction in liability from reduced injuries. A "starter pack" of capsules given to SNFs
Physicians who were reluctant to order without Vitamin D (25 OH) levels that showed deficiency.	Stressed this was a public health approach. One lab test cost =25 years of D3.
Added nursing burden "one more pill	Promotion of "Vitamin D Day"- concept- one day every month, with morning announcements in SNF
No centralized method to track utilization	Reports were dependent on NPs hand entry of D3 into EMR

C100

Epoetin Alfa Utilization from 2000 Through 2007 for Elderly Chronic Kidney Disease Patients Not on Dialysis.

M. Lafeuille,[2] R. A. Bailey,[1] S. McKenzie,[1] F. Vekeman,[2] C. Piech,[1] P. Lefebvre.[2] *1. Groupe d'analyse, Ltée, Montreal, QC, Canada; 2. Centocor Ortho Biotech Services, LLC, Horsham, PA.*

Supported By: Ortho Biotech

Purpose: To examine epoetin alfa (EPO) drug utilization trends from 2000 through 2007 in elderly patients with chronic kidney disease (CKD) not on dialysis.

Methods: An analysis of longitudinal medical claims from the Ingenix Impact National Managed Care database was conducted to evaluate the dosing trend of EPO. Patients included in the study were ≥65 years, had ≥1 claim for CKD, were treated with EPO, and had received ≥2 doses during a treatment episode. Patients diagnosed with cancer, receiving chemotherapy, treated with darbepoetin alfa were excluded. If a patient had received renal dialysis, data were censored 30 days prior to the first date of dialysis. If 2 consecutive EPO doses were more than 60 days apart, the second claim marked a new treatment episode. The treatment episodes were classified by semester (S1: Jan-June; S2: July-Dec) according to the date of treatment initiation. Average weekly dose of EPO, weighted by the duration of treatment, was calculated and evaluated using semester intervals to assess trends.

Results: A total of 1,145 treatment episodes were identified between January 2000 and December 2007. Mean age at treatment initiation was 73.8 years and women constituted 50.7% of the study population. Mean [SD] treatment duration remained relatively stable over time (127.2 [163.1] days). The weekly EPO dose over time was stable throughout the study period (mean across semesters: 10,874 Units; median: 10,895 Units; 25th, 75th percentile: 10,386, 11,489 Units). After adjusting for confounding factors that may otherwise influence drug utilization such as age, gender, treatment duration, dialysis, payor type, diabetes, hypertension, and Charlson Comorbidity Index, mean weekly EPO dose remained stable over time since 2000.

Conclusion: This study of elderly CKD patients not on dialysis showed that EPO weekly dose remained stable during the 8 years of study period.

C101

Interventions to Improve Transitional Care between Nursing Homes and Hospitals: A Systematic Review.

M. A. LaMantia,[1,2] L. P. Scheunemann,[1] A. J. Viera,[3] J. Busby-Whitehead,[1,2] L. C. Hanson.[1,2] *1. Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC; 2. Institute on Aging, University of North Carolina, Chapel Hill, NC; 3. Department of Family Medicine, University of North Carolina, Chapel Hill, NC.*

Supported By: Supported by: NIA Grant # 2T32AG000272-06A2 and the Hartford Center of Excellence in Geriatric Medicine and Training

Purpose: Transitions between healthcare settings are associated with errors in communication of information and treatment plans for geriatric patients. This study is a systematic review of interventions to improve communication of accurate and appropriate medication lists and advance directives for elderly patients transferring between nursing homes and acute care hospitals.

Methods: Using a pre-specified strategy, we searched MEDLINE, ISI Web, and EBSCO Host for original English-language research articles reporting interventions to improve communication of medication lists and advance directives. We excluded those clearly not relevant by examination of their titles. Two investigators independently reviewed abstracts of the remaining articles to identify those meeting inclusion criteria: 1) patients aged 65 years or older; 2) transitions between nursing homes and hospitals. Data from each article was abstracted to a standardized data collection instrument and findings synthesized in evidence tables.

Results: Of 696 articles initially identified, 620 were excluded by title review. Of the remaining 76 articles, 28 were excluded based on abstract review. Investigators read full text of the remaining articles and 5 studies ultimately met all inclusion criteria. Two studies described interventions to enhance transmission of advance directives, two described interventions to improve communication of medication lists, and one intervention addressed both goals. Only one was a moderate quality RCT (Jadad score 3). Remaining studies used historical or no controls, and non-standardized outcome measures. Data synthesis indicates a standardized patient transfer form may assist with communication of advance directives and medication lists, and pharmacist review of medication lists may help identify omitted or indicated medications on transfer.

Conclusions: Preliminary evidence supports standardized transfer documents or pharmacist review to improve transitions between nursing home and hospital. Further research is needed to define effective interventions, target populations and outcome measures for high quality transitional care.

C102

End-of-Life Care Survey of Upstate New Yorkers: Advance Care Planning Values and Actions.

P. A. Bomba,[1,2] K. G. Richardson.[1] *1. Geriatrics, Excellus BlueCross BlueShield, Rochester, NY; 2. Department of Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY.*

Supported By: Excellus BlueCross BlueShield

Introduction

Community Conversations on Compassionate Care (CCCC) was created as a project of the Community-Wide End-of-Life/Palliative Care Initiative in Rochester, NY. CCCC is an advance care planning program designed to motivate all adults 18 years of age and older to complete traditional advance directives (AD) like the heath care proxy and living will. CCCC identified key interventions to ensure improved completion rates of healthcare proxies and living wills across Upstate New York. To assess the effectiveness of the CCCC Program, a community survey of Upstate New Yorkers was completed in April 2008. The objective was to assess consumer attitudes and actions regarding AD.

Methods

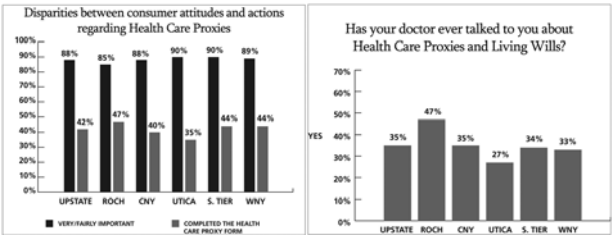
A random sampling of 2,000 adults in 39 Upstate counties were interviewed by phone about their awareness, knowledge, attitudes, behavioral readiness and completion rates of AD. Discussions with family and personal physicians were also assessed.

Results

The survey found disparities between the attitudes and actions of Upstate New Yorkers regarding AD; significant regional variations in completion rates also exist. Evidence suggests that the difference is driven in part by physician communication with patients as the highest rates of discussion occurred in Rochester (47%) versus Utica (27%). Availability of community education also played a significant role.

Conclusion

National data on AD completion rates is sparse. In comparison to available data, AD completion rates were higher among Upstate New Yorkers than among people nationally. Areas with higher completion rates correlated with areas where the CCCC program had been active for a longer period of time. Understanding the important role that physicians play in affecting AD completion rates by speaking with their patients is critical. This knowledge can better prepare physicians and community organizations to help motivate people to complete AD.



Key Community Survey Outcomes

C103

Polypharmacy Improvement Adherence Project: Nursing Home Medication Cost Outcomes.

P. Lorenzo,[1] C. Bell,[1] K. Masaki,[1] W. Iwasaki,[2] P. Blanchette.[1] *1. Geriatrics, University of Hawaii John A. Burns School of Medicine, Honolulu, HI; 2. Kuakini Hospital, Honolulu, HI.*

Supported By: The John A. Hartford Center of Excellence in Geriatrics

Introduction: Polypharmacy in nursing homes (> 9 medications), causes 48-69% of drug related problems. The Polypharmacy Outcomes Project, a quality improvement project, resulted in a significant reduction in nursing home medication costs in 2007. This study examined outcomes of a second nursing home polypharmacy review one year later.

Methods: After IRB approval, data on prescribed medications, dosing schedules and routes of administration were obtained from 75 nursing home charts in patients with polypharmacy. Medication costs were obtained from nursing home consultant pharmacist and internet pharmacy sources. Geriatric medicine fellows recommended to continue, taper or modify each medication based on Beers criteria for potentially inappropriate drug use in elderly patients. High-risk medications, drug interactions and contraindications were identified. Recommendations were discussed with each patient's attending physician, who made the final decision. T-tests compared medication costs before versus after the project, and baseline costs of the 2007 versus 2008 projects.

Results: The total number of medications prescribed was 1251, costs averaging $755 per patient per month. One or more medications

costing over $100 per month were found in 66 patients (88%). The total monthly cost of scheduled medications was $56,653. After the project, the total number of medications was1232. The mean number of drugs costing more than $100 per month was significantly reduced from 2.21 to 2.08 medications per patient (p=0.007). The average monthly cost of scheduled medications decreased significantly from $755 to $730 per patient (p=0.0002). The total monthly cost for discontinued medications was $1869 (projected yearly savings of $22,431). There were no significant differences in mean cost of scheduled medications per patient or mean number of medications costing over $100 per month in 2008 compared to 2007.

Conclusion: Reducing polypharmacy in nursing homes reduced medication expense and may avoid costly adverse drug reactions. This project led to improvements in patient care and decreased costs, as well as provided education in systems-based practice for geriatric fellows. Future directions include examining ways to extend the cost-reduction impact of the project.

C104

Colorectal cancer screening in geriatric population above age 75: outcomes in symptomatic African American and Hispanic adults.

R. Walia, S. Singhal. *Mount Sinai Hospital, Chicago, IL.*

Supported By: 1. Internal Medicine, Chicago Medical School at Rosalind Franklin University, North Chicago, IL, USA.

2. Gastroenterology, Mt. Sinai Hospital Medical Center, Chicago, IL, USA.

Colorectal cancer screening above age 75: outcomes of colonoscopies in symptomatic African American and Hispanic adults

Background: USPSTF recently updated colon cancer screening recommendations against routine screening for colorectal cancer in adults > 75 years of age. Considerations to support screening in an individual patient are not clearly described. There is limited data to support recommendations in African American and Hispanics population. This study evaluates the outcome of colonoscopies in symptomatic adults > 75 years of age.

Methods: We reviewed records of 568 inpatient colonoscopies carried out at our center during 2006-2008 for symptomatic adults over 75 years of age. Subjects with one or more previous normal screening colonoscopies and presence of one or more "generally indicated" indications as per ASGE guidelines were included in study. Patients with history of diverticular bleed and inflammatory bowel disease were excluded.

Results: A total of 155 adults (mean age 81.8 years; 83.8% African Americans and 16.1% Hispanics) met the inclusion criteria. Of the 155 patients studied, 79.35% had one previous colonoscopy whereas 20.6% of the patients had two or more previous colonoscopies. Indications for a repeat colonoscopy were: anemia, hematochezia, fecal occult blood, chronic abdominal pain, chronic diarrhea or constipation, unexplained weight loss or an abnormal CT scan. Colonoscopy was completed to the caecum was in 65.2% of the subjects. In addition, 14.2 % of the patients had poor bowel preparation. Clinically significant adenomas / cancer were found in 29/155 colonoscopies. Only 4.5% had tubular adenomas, 5.1% had villous adenomas, while cancer was detected in 14/155 colonoscopies. Of the fourteen patients with colon cancers, 9 were staged III or IV. Other findings were; diverticulosis 57.4%, hemorrhoids 16.8%, colitis 9.7% and angiodysplasias 1.3%. Only two patients from the study had significant complications – sinus bradycardia and bowel perforation which resolved with conservative management.

Conclusion: Colonoscopy has an overall low yield in symptomatic African American and Hispanic patients greater than 75 years of age with previous normal screening colonoscopies. Although cancer detection rates were high, the advanced stages of cancer at diagnosis limited the benefit of detection in a significant proportion.

C105

Changes in functional status during acute illness episodes in nursing home residents.

W. W. Hung,[1,2] S. Liu,[3] Q. Du,[1] K. Boockvar.[1,2] *1. Geriatrics, Mount Sinai School of Medicine, New York, NY; 2. James J Peters VA Medical Center, Bronx, NY; 3. Memorial Sloan Kettering Cancer Center, New York, NY.*

Supported By: VA HSR&D Advanced Research Career Development Award

Background: Nursing home residents are susceptible to changes in their functional status during episodes of acute illness (AI). Considering that functional decline during nursing home stay is a quality measure for nursing homes across the US, it is important to describe the change in functional status in the setting of AI.

Question: What is the pattern of change in functional status for nursing home residents with AI episodes treated at the nursing home?

Methods: On a twice weekly basis, residents of 2 nursing facilities in New York City were assessed for presence of acute illness using a combination of chart review and nursing staff inquiry. AI was defined based on a set of symptom and medical event criteria validated in the nursing home setting. Functional status was measured by the Minimum Dataset (MDS) Activities of Daily Living (ADL) scale (MDS-ADL) at baseline enrollment, at AI onset and 14 days after AI onset.

Results: 60 residents were observed for a mean of 168 days. The observed incidence of AI was 3.4 per resident per year. Of 91 identified AI episodes, 62 in 32 residents were treated at the nursing home (the rest in the hospital). Functional status data were available at AI onset and at day 14 after onset of AI in 49 episodes. In 11 of the 49 episodes (22%; 95%CI 11%, 34%), there was a decline in functional status associated with AI. Among AI episodes with decline, 4 (36%) and 7 (64%) did not and did recover some baseline function by 14 days, respectively. The mean change in MDS-ADL score among those who had functional decline, with or without recovery, was 2.2 points (SD 1.8).

Discussion: Temporary declines in functional status are common in nursing home residents with AI. Recovery of function occurs in most, but not all, decliners by 14 days. AI is a source of variability in functional status in nursing home residents and should be considered when these measurements are used as quality measures for nursing homes.

C106

The Role of Technology in Improving the Health of Older Adults.

D. A. Dorr,[1] C. Brunker,[2,3] S. Czerniak,[1] G. S. Olsen.[1] *1. Medical Informatics and Clinical Epidemiology, Oregon Health and Science University, Portland, OR; 2. Geriatrics, Intermountain Healthcare, Salt Lake City, UT; 3. Geriatrics, University of Utah Health & Sciences Center, Salt Lake City, UT.*

Supported By: John A. Hartford Foundation

BACKGROUND. As the population of the United States ages, the demand for more efficient, effective patient care increases. To consistently care for older adults, we need readily accessible, patient-centered information and knowledge. Increasingly, Health Information Technology (HIT) is highlighted as a solution to the growing needs of older adults. While the adaptation of HIT to different medical settings is ongoing, HIT has yet to reach a majority of health care practices. Systems that specifically address the risks for older adults are rarer still, though critically needed. This paper explores HIT's use in medical systems and offers possible solutions to current barriers in dissemination.

METHODS. An electronic search of the literature was conducted to identify scientific thought on HIT use for the benefit of older adults. Selected summaries of these texts are included in this paper. Additionally, a nine question survey was developed to measure

current thought on HIT and the health of older adults. Four interviews were conducted with experts in geriatrics, public policy, information technology / informatics, dissemination, and advocacy. The authors summarized these findings using constant comparative methods.

RESULTS. Opportunities were found for carefully applied HIT with appropriate organization and workflow to 1) improve chronic care management through better coordination of care and empowerment of patients to manage their own health; 2) detect and address functional decline earlier; and 3) avoid harm from conflicting medical recommendations and from preventable illnesses. To fully capture these and other benefits, a HIT system must be designed and implemented with sensitivity to the needs of older adults. Opportunities identified for improved design and implementation include: implementing standards for HIT use; improving reimbursement for adopting elements of HIT in the care of older adults; convening groups experienced in HIT to discuss information sharing, implementation, and dissemination; and implementing HIT-focused models of care in diverse settings with a specific focus on collaboration to improve spread.

CONCLUSION: The use of HIT to support the health of older adults has a viable and promising future. However, much must be done to adapt current systems.

C107

Development and Implementation of an Anticoagulation Program for a Home-Based Primary Care Program (HBPC) at a VA Medical Center.

I. Shirkhorshidian,[1,2] C. Smith,[2] M. Dodd.[1] *1. Ilnaz Shirkhorshidian, University of New Mexico College of Pharmacy, Albuquerque, NM; 2. New Mexico VA Medical Center, Albuquerque, NM.*

Warfarin a high-risk treatment can lead to adverse events due to the complexity of dosing, monitoring, and ensuring patient adherence. Reports indicate patients on oral anticoagulants commonly do not know the complications and risks of their treatment. It is the second most common cause of adverse drug events in emergency rooms, and the overall risk of major bleeding averages 7–8% per yearî. Despite the risk, well-established indications for warfarin use are increasing in prevalence with aging of the population and new indications for warfarin are regularly recommended resulting in the proportion of elderly persons taking warfarin has risen to 7%î.

The Veteran Affairs HBPC program is a continuous, comprehensive, longitudinal primary care program that utilizes an interdisciplinary team in the home-setting. HBPC targets veterans with multiple complex, chronic, progressive disease(s) for whom routine clinic-based care is not effective. As a component of the VA Medical Center the HBPC program partakes in providing anticoagulation services to their patients. Standardized practices with patient involvement can reduce the risk of adverse drug events. For these reasons Joint Commission's 2008 National Patient Safety Goal 3E requires all organizations utilizing anticoagulation therapy to develop standardized practices to reduce patient harm associated with anticoagulant use.

In order to improve patient safety, the NM VA Medical Center has developed and implemented a standardized anticoagulation management program for their HBPC program. Details of the protocol include: defining specific indications for anticoagulation, imposing requirements for baseline and ongoing laboratory tests, providing dosing guidelines via a standardized protocol, identifying drug interactions, outlining involvement of dietary services, and providing education to staff. Additionally, nurses will monitor patients using the quarterly NMVAHCS Anticoagulation Management Quality Assessment/Performance Improvement report for FY09. This data will spearhead a pilot program to collect and analyze data to measure the effectiveness of this intervention with respect to therapeutic outcomes and hospitalizations.

îWofford J. Best strategies for patient education about anticoagulation with warfarin:systematic review.BMC Health Serv Res.2008 Feb;8:40.

C108

Long Term Mechanically Ventilated Patients at Home.

J. M. Jacobs, R. Steiner, J. Stessman. *Jerusalem Home Hospital, Clalit Health Services, Jerusalem, Israel.*

Purpose: Advances in respiratory technology, together with increasing availability of compact, user friendly ventilatory apparatus, have led to the possibility of home ventilation in place of long term in-patient care. Factors influencing the decision include patient/family preferences; caregiver competency; specialized knowledge from a multidisciplinary team; a logistic infrastructure providing maintenance and emergency backup; and motivation of the health care provider committed to both quality of care and financial viability.

Home Hospital is an alternative to in-patient care, and the Jerusalem Home Hospital has provided multidisciplinary, physician led care to over 18,000 patients since its inception in 1991. In face of rising numbers of chronic ventilated patients in Jerusalem, we describe the experience gained treating ventilated patients at home under the auspices of the Jerusalem Home Hospital- a service funded by the Clalit Health Service HMO.

Methods: A retrospective description of patients requiring continuous mechanical ventilation via tracheostomy, treated at home from January 2005-June 2008.

Results: A total of 59 patients (pts) chose to be treated at home, with an average of 31 pts treated simultaneously. During the period 14 pts died at home and 9 in hospital. A total of 8 children (under age 16) were treated (average age 7) and the average age of the remaining 51 pts was 64 (age range 17-92). Indications included premature and congenital syndromes (8 pts), hereditary dystrophies (21 pts), polio (1 pt), trauma (6 pts), amyotrophic lateral sclerosis (8), and a mixture of primarily geriatric patients following prolonged admissions with resuscitation, chronic lung diseases, cerebrovascular diseases, aspiration (13 pts). Overall average duration of ventilation was 4.8 years (maximum 10.8 years). Among patients who died, the average duration of ventilation was 1.8 years for adults and 2.5 years for children. During the study period the number of chronic ventilated patients within the HMO receiving long-term in-patient care rose to 56 at any one time.

The daily cost to the HMO of home hospital care versus in-patient care was $110 versus $250, a ratio of 1:2.3 in favor of home hospital.

Conclusions: Home hospital was a successful in fulfilling the humane wishes of a significant number of ventilated patients and families to be cared for at home, with substantial cost benefits in comparison to in-patient care.

C109

The Effect of the Delirium Room on Function, Length of Stay, Discharge Location and Mortality among Among Older Hospitalized Patients with Delirium and Subsyndromal Delirium.

J. Flaherty,[1,2] K. Steele-Simpson,[1] J. T. Chibnall,[1] N. Bassil,[1,2] V. Vasudevan,[1] V. Srivalli.[1] *1. Internal Medicine, Saint Louis University, St Louis, MO; 2. St. Louis VA GRECC, St. Louis, MO.*

The Delirium Room (DR) is a specialized nurse-driven delirium management model that has 24-hour nursing observation and no physical restraints. Objectives: Can the DR equalize important outcomes among delirious patients compared to non-delirious patients? Setting: An ACE Unit where nurses were trained to do and record a modified Confusion Assessment Method (CAM) every 12 hours. Methods: Retrospective chart review of 4 groups of patients: delirious, cared for in the DR (+Delirium,+DR), non-delirious, cared for in

the DR (-Delirium,+DR), delirious and no time in the DR (+Delirium,-DR), and non-delirious and no time in the DR (-Delirium,-DR). Patients (age >64) who were medical admissions to the ACE Unit from 1/1/2008 through 4/30/2008, and who had a geriatric assessment within 48 hours of admission by a trained physician researcher, were included. Results: 168 patients met inclusion criteria. Mean age was 83.9 (SD=6.7) years, 73% were women, 85% were Caucasian, with no statistical differences among the 4 groups. There were no statistically significant differences among the 4 groups in severity of illness (by Charlson Comorbidity Index (CCMI), APACHE scores), and the outcomes of change in ADL status and length of stay (LOS). LOS was log transformed before analysis. There was no apparent differences in the percentage of patients returning home who were from home (63%, 75%, 83%, 77%), and number of deaths (0, 1, 1, 2) among the 4 groups (+Delirium,+DR; -Delirium,+DR; +Delirium,-DR; -Delirium,-DR; respectively), but statistical analyses were not done due to small numbers. Similar results were found when subsyndromal delirious patients were compared with non-delirious patients, except that ADL status improved in the group that had subsyndromal delirium and was in the DR, while other groups did not change. The nursing CAM scores had substantial reliability (ICC coefficient of 0.65 and alpha coefficient of 0.91). Conclusion: Although the DR may have potential to equalize outcomes of function and LOS, there are several limitations to this study. The ACE Unit itself may play a role in these outcomes (the +Delirium, -DR group had similar outcomes). There was also increased awareness by the nurses because of their use of the CAM.

C110

A descriptive analysis of our experiences with a geriatric emergency room.

S. Nair,[1] P. Liu,[1] V. Argento,[1,2] M. Schmidt,[1] D. Raccio,[1] A. Heiat,[1] B. Skudlarska.[1,2] *1. Department of Medicine, Bridgeport Hospital, Stratford, CT; 2. Department of Medicine, Yale University, School of Medicine, New Haven, CT.*

BACKGROUND: In October 2007, out hospital initiated a geriatric emergency medical services (GEMS) program. This program utilizes a full time geriatric nurse to ensure senior focused care, improve communication between providers and sites of care, and expedite the emergency room process (triage and result retrieval). This nurse also performs nursing assessments to identify patients at high risk of falls, delirium, and pressure ulcers, and facilitates ambulation, nutrition, hydration, and care. PURPOSE: To describe the geriatric patients who utilize our emergency room. METHODS: We conducted a retrospective database review of 4635 patients who presented to the Bridgeport Hospital Emergency Room between December 2007 and May 2008 and were over the age of 65 years. In this initial phase of our analysis we reviewed 6 months of patients seen in our geriatric emergency room to determine the types and numbers of older patients who utilize emergency rooms. Phase 2 of this analysis, which will be presented separately, will review factors including time in the emergency room, use of Foley catheters, use of pain medication, and utilization of psychoactive medications to determine if a dedicated emergency room nurse impacts these factors. The final phase of our study will be prospectively designed protocols attempting to improve outcomes for older adults in the emergency room. RESULTS: The average number of geriatric patients seen each month was 772.5, and their average age was 79 years. This constituted 13.7% of all patients seen in the ER during this period. Chief complaints most commonly seen included: fall 10.7%, shortness of breath 9.9%, abdominal pain 6.8%, chest pain 7.7%, altered mental status 5.1%, weakness 4.8%, psychiatric 1.5%, and other 53.4%. Of these numbers 47.6% were admitted and 0.88 % were placed into an ECF directly from the emergency room. CONCLUSION: In our community, about 14% of all visits to the emergency room are by patients over the age of 65 years. Almost half of these patients get admitted to the hospital. For this population, the emergency room experience can be traumatic. Providing senior focused care in the emergency room will hopefully improve patient care and outcomes. In the future we hope to design and implement protocols that will improve care for this growing segment of emergency room utilizers.

C111

Prevalence and determinants of depression in older individuals residing in long stay institutions in Delhi.

W. Wilson, A. Goel, M. A. Khan, P. Kumar, A. B. Dey. *Medicine (Geriatrics), All India Institute of Medical Sciences, New Delhi, India.*

Supported By: Acknowledgments: The current study is a result of collaborative approach by AIIMS and HelpAge India and has been funded by WHO-SEARO.

Introduction: Depression is often viewed albeit erroneously as a natural outcome of ageing resulting in neglect and mental illness remaining undetected among older individuals. The problem aggravates in absence of immediate family support especially in long-term institutional care settings. The current cross sectional study is the first attempt to assess the presence of depression in long stay institutional residents in Delhi.

Methods: One hundred older residents were randomly recruited from ten of the 26 old age homes studied in Delhi and National Capital Region in a cross sectional study in the year 2007. Several factors including demographic and clinical variables, family and personal history, socio-economic, functional, cognitive status and presence of frailty that could influence depressive state were identified and recorded. Depression was assessed using the 15 item Geriatric Depression Scale (GDS). A logistic regression analysis model was used to determine factors that are associated with depression.

Results & Discussion: Of the 100 randomly selected residents with a mean age of 74.52 (+7.58), majority were males (M: F, 0.75). The mean GDS was 5.51 (+4.1). Nearly half of them (48%) were depressed. This is significantly higher than 21.9% older subjects depressed in the community determined in another study in a similar population. After logistic regression analysis, depression was associated with socioeconomic status, cognitive state, frailty and practice of yoga or meditation. Depression was not associated with physical function or other institution based factors.

Conclusion: Depression is more common among institutionalized older individuals than those living in the community. Recognition and understanding of these individual and institution governed factors will accurately determine institution of effective personal and administrative measures to reduce rates of depression, improve mental health and quality of life of older residents of long stay institutions.

C112

Profile of older patients presenting in emergency.

M. A. Khan, A. Goel, W. Wilson, P. Kumar, A. B. Dey. *Medicine (Geriatrics), All India Institute of Medical Sciences, New Delhi, India.*

Supported By: The authors have no financial disclosures or conflicts of interest to declare

Objectives:

Emergency services are often ill equipped and sensitized in care of older patients. Many a times, simple basic amenities like wheelchairs, stretchers, ramps, handrails are in short supply or are not found. Besides, emergency doctors are poorly sensitized to attend to the needs of an older patient. The current study was conducted to define the clinical profile of older patients attending emergency services.

Methods:

Records of 1227 subjects attending emergency services at the All India Institute of Medical Services, New Delhi between September and November 2008 were retrospectively reviewed for their presentation and medical condition. Those admitted under General Medicine were prospectively reviewed in greater detail and their

condition was assessed on hospitalization. The profile of presenting patients was described in terms of their broad complaints and final diagnosis

Results:

Of the 1227 patients, 396 (32.7%) were older than 60 years. Among hospitalized older patients 60% were male and 40% were female. The mean age of hospitalized older patients was 68.5 years.

138 (34.84%) patients were admitted under internal medicine. 72 (18.18%) presented with neurological symptoms, 69 (17.42%) with cardiovascular complaints, 53 (13.38%) with gastrointestinal disease, 40 (10.10%) had a malignant disorder and 24 (6.08%) patients had nephrological symptoms.

Among the 138 older patients hospitalized under internal medicine, major causes of illness were pneumonia in 58 (42.02%) and COAD in 32 (23.8%). The common co-morbid conditions among these subjects were diabetes in 16 (11.59%), coronary artery disease in 14 (10.14%),

Conclusion

We find that every third patient presenting in emergency is senior. Our study suggests that the three major cause of medical illness in older people are pneumonia, COAD, coronary artery disease and diabetes and residents adept in care of these medical illnesses would be able to care for the older patients with a more focused approach, making the emergency room more geriatric friendly

C113

Detection of delirium in a post-acute setting through the medical records.

A. Morandi,[1,2] L. M. Solberg,[1,2] R. C. Habermann,[1] P. Cleeton,[2] E. Peterson,[2] E. W. Ely,[1] J. F. Schnelle.[2] *1. Center for Health Service Research, Vanderbilt University, Nashville TN, TN; 2. Center for Quality Aging, Vanderbilt University, Nashville, TN.*

Supported By: Dr. Ely has received research grants and honoraria from Hospira, Inc, Pfizer, Eli Lilly, and research grants from Aspect Medical Systems, AFAR, Beeson Collaboration Grant, National Institute of Health (AG027472-01A1), VA-Merit grant and consultant with Healthways. The other authors report no financial disclosures.

Introduction: To date the prevalence of delirium in a post acute setting is reported up to 16% when delirium is actively assessed with validated method such as the Confusion Assessment Method (CAM). The purpose of this project was to estimate how frequently direct care staff identified delirium or symptoms associated with delirium in the Post Acute Care (PAC) setting and to evaluate communication regarding delirium symptoms between nurses and physicians.

Methods: Retrospective chart reviews of 895 patients admitted to two post-acute facilities from March 2007 to March 2008 was performed. The detection of delirium in the study population was compared using two tools: (1) The chart based method (CBM) of Inouye et al (JAGS 2005) that searches for nine keywords associated with delirium in an acute care setting (i.e. confusion, disorientation, altered mental status, delirium, agitation, inappropriate behavior, mental status change, inattention, hallucination, lethargy), and (2) the Nursing Home-CAM (NH-CAM) (Dosa et al. JAGS 2007) based on each patient prospectively collected Minimum Data Set (MDS).

Results: A 9% prevalence of delirium was identified when using the CBM and a 0.5% prevalence of delirium was recorded with the NH-CAM. Among the 80 patients found to be delirious, nurses recorded the key words as indicated by the CBM in 79 patients (99%) and the physicians in 55 (69%). The word most frequently used by nurses was confusion (95%). The nurses did not alert physicians in 25 (31%) of the charts in which the key words were identified.

Conclusion: The CBM appears to detect a higher prevalence of delirium compared to the NH-CAM in post-acute settings; in fact delirium was identified with the CBM in 1 of 10 cases. Moreover the fact that physicians were alerted in only 1 of 3 cases when a key word was used to describe patient's symptoms is problematic and suggests the need for a more standardized method to detect and manage delirium in PAC.

C114

Sociodemographics and Compensation for Instrumental Activities of Daily Living during the Preclinical Phase of Alzheimer's Disease.

B. Nazario,[1] C. Simpson,[2] I. Martinez,[2] P. Gregory,[2] Q. Xue,[2] M. Carlson.[2] *1. University of Puerto Rico School of Medicine, San Juan, PR; 2. Division of Geriatric Medicine and Gerontology, Johns Hopkins University, Baltimore, MD.*

Supported By: National Institute of Aging, John Hartford Foundation, American Federation for Aging Research

BACKGROUND

The preclinical phase of Alzheimer's disease (AD) is very difficult to detect using standard cognition tests such as mini-mental status examination (MMSE) and neuropsychological test batteries. Sociodemographic variables have been related to some instrumental activities of daily living during (IADLs). Identification of specific sociodemographics associated with compensated IADLs may help in the early diagnosis of AD.

OBJECTIVE

To evaluate the relationship between sociodemographics and cognitive assist compensations for IADLs during the preclinical phase of AD in patients.

METHODS

We conducted a cross-sectional analysis using data from the sixth round from the Women's Health and Aging Study II (n=197). The primary outcome measures were cognitive assist compensations for IADLs such as managing money and medication use. Sequential logistic regressions were used to analyze associations between race, education, income, and the cognitive assist compensations for IADLs adjusting for cofounders such as number of adjudicated diseases, geriatric depression score, MMSE, and health care utilization. Multivariate analyses assessed the independent relationship between each of these factors and cognitive assist compensatory measures for IADLs.

RESULTS

We found a significant association between MMSE total score and cognitive assist compensations for IADLs. For every point decrease in MMSE total score the odds of using cognitive assist compensations increase 13% [95% CI 0.76 – 1.0, $p < 0.05$]. No other significant relationships were found. Sociodemographics such as race, income, or education did not seem to play a significant role in the use of cognitive assist compensatory measures for IADLs.

CONCLUSION

Our results demonstrated that MMSE total score is independently associated with the use of cognitive assist compensations for IADLs. Patients with preclinical AD are more prone to use these compensatory strategies without being aware that they have more than 2 difficulties with IADLs. This association may help in the development of a diagnostic tool in the preclinical phase of AD. Further research is necessary such as longitudinal prospective studies to determine the rate of progression of cognitive assist compensations for IADLs during the preclinical phase of AD.

C115

The prevalence of dementia at age 70, 78 and 85.

J. Stessman, R. Hammerman-Rozenberg, J. M. Jacobs. *Geriatrics and Rehabilitation, Hadassah Hebrew University Hospital, Jerusalem, Israel.*

Supported By: The Jerusalem Longitudinal Study has received funds from the Ministry of Labor and Social Affairs of the State of Israel; ESHEL- the Association for the Planning and Development of Services for the Aged in Israel; The National Insurance Institute; and various private, charitable donors. No support was offered by any commercial venture.

Purpose: Although cross sectional research has shown that the prevalence of dementia increases with age, very few longitudinal

studies have described the rising prevalence within the same cohort followed over an extended period of time. We present data spanning 15 years of follow up from 1990-2005, describing the prevalence and basic characteristics of dementia from age 70 to 85.

Methods: The Jerusalem Longitudinal Cohort Study has followed up a representative community dwelling sample from the birth cohort of west Jerusalem residents born 1920-1921. The study sample was augmented at age 78 and 85 with randomly selected new recruits from the same cohort. Subjects underwent comprehensive assessment at ages 70, 78 and 85. Dementia was defined as Mini Mental State Examination (MMSE) of 0-24.

Results: Dementia prevalence was 7%, 14%, and 27% at ages 70, 78, and 85 respectively. The severity of dementia increased with age: a MMSE of less than 20 was found in 41% vs. 60% of demented subjects at age 78 vs. 85 respectively. Numerous baseline associations with dementia were seen across time, some of which are shown in the table.

Conclusions: Rising prevalence and severity of dementia were observed within the birth cohort from age 70 –85. Consistent longitudinal associations were observed with from socioeconomic, functional and physical factors.

	1990			1998			2005		
	MM 0-24	MM>24	p value	MM 0-24	MM >24	p value	MM 0-24	MMSE >24	p value
% (n)	7 (22)	93 (279)		14 (76)	86 (485)		27 (307)	72 (825)	
Female	68	44	0.03	62	48	0.02	66	50	<0.0001
Eastern origin	55	19	<0.001	55	17	<0.001	53	19	<0.001
0-12 years education	95	39	<0.001	87	45	<0.001	80	46	<0.001
Financial difficulty	73	28	<0.001	64	27	<0.001	53	24	<0.001
Dependent in ADL	15	3	0.003	18	5	<0.001	73	23	<0.001
Low physical activity	67	39	0.012	32	12	<0.001	65	22	<0.001
Diabetes	18	13	0.45	27	15	0.02	29	18	<0.001
Hypertension	41	36	0.63	61	53	0.23	75	72	0.26
Poor self rated health	55	23	0.001	51	31	<0.001	51	29	<0.001

C116

Newly Diagnosed Dementia in the Emergency Department.

J. H. Han,[1] L. Solberg,[2] E. W. Ely,[2] E. E. Zimmerman,[2] N. Cutler,[2] S. Bryce,[1] A. B. Storrow,[1] J. F. Schnelle.[2] *1. Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN; 2. Department of Internal Medicine, Vanderbilt Unversity Medical Center, Nashville, TN.*

Objectives: Dementia is common in older adults and a threat to their quality of life. Pharmacologic and non-pharmacologic interventions for dementia can improve the quality of life for patients and their families. Because older patients are frequent users of the emergency department (ED), the ED may be well suited for dementia surveillance. No ED study has ever evaluated the frequency in which newly diagnosed cases of dementia occur. As a result, we sought to determine how often dementia occurs in older ED patients without a past history of dementia.

Methods: This was a post hoc analysis of a cross-sectional study which originally evaluated delirium in the ED. English-speaking patients 65 years and older without a past history of dementia and who had the Mini-Mental State Examination (MMSE) performed were included. Patients were excluded if they had delirium, resided in a nursing home, had severe mental retardation, or were blind or deaf. The Mini-Mental State Examination (MMSE) was administered by trained research assistants. Patients with MMSE scores < 23 (out of a possible 30) were considered to have dementia.

Results: For this analysis, 442 patients without a prior history of dementia met inclusion and exclusion criteria. Median (IQR) age was 73 (69, 79) years, 249 (56.3%) were female, and 74 (16.7%) were nonwhite. Based upon MMSE criteria, 125 (28.3%) patients had new diagnosed dementia. Of these, 111 (88.8%) patients had an MMSE score between 18 and 23, and 14 (11.2%) patients had an MMSE < 18. In ED patients with incident dementia, 40 (32.3%) were in the ED without a surrogate, 63 (50.4%) were discharged from the ED, and 17 patients (13.6%) were discharged from the ED without a surrogate present.

Conclusions: We observed that dementia occurs frequently in the older ED patients without a prior history. ED dementia screening may aid earlier diagnosis and intervention. Future studies should determine if early detection of dementia in the ED improves quality of life and other patient outcomes.

C117

Cortical changes in depressed elders with and without mild cognitive impairment.

J. Kmiec, J. T. Becker, M. A. Butters, H. J. Aizenstein. *Psychiatry, UPMC-Western Psychiatric Institute and Clinic, Pittsburgh, PA.*

Supported By: AG05133

BACKGROUND: Mild cognitive impairment (MCI) has been proposed to be a precursor of Alzheimer's Disease (AD) as 20-35% of MCI patients go on to develop AD. Among patients with MCI, the presence of major depressive disorder (MDD) increases their risk of developing AD by two when compared to nondepressed MCI patients. The relationship between depression, MCI, and dementia is still unknown, but there are two major hypotheses regarding this association. The first is that there is decreased neural reserve in patients with depression and when this is coupled with pathologic changes of MCI, there is an increased risk for developing AD. The second hypothesis is that depression is a manifestation of a dementia syndrome. That is, the depressive symptoms in patients with MCI are a result of the dementing process and/or a reaction to the decline in functioning. Deciphering the relationship between MDD and MCI may help in developing treatments to delay or halt the progression to dementia. METHODS: Fifteen patients diagnosed with MCI and MDD were matched with 15 patients with MDD. Each underwent a detailed neurobehavioral exam and an anatomical MRI scan. The MRI data were analyzed using standard procedures for modulated Voxel-Based Morphometry in SPM2. Following the identification of the specific areas of regional atrophy, volumes were extracted at the cluster level within the regions identified for between group comparisons. RESULTS: Patients with both MDD and MCI had decreased volume in the right superior frontal gyrus, right anterior and posterior cingulate cortex, bilateral precuneus, and left hippocampus compared to those with MDD only. Conversely, patients with MDD alone had decreased volume of the right inferior parietal lobe, right middle frontal gyrus, and left fusiform gyrus compared to patients with both MDD and MCI. CONCLUSIONS: Patients with both MCI and MDD have decreased volume in areas commonly affected by depression and Alzheimer's disease. These findings provide support for the hypothesis that there are neuropathologic changes in MDD and MCI which may explain the increased risk for developing AD. Longitudinal MRI studies are needed to develop an understanding of the relationship between MDD, MCI, and AD.

C118

Association of HDL-C, LDL-C, and Lp(a) With Cognitive Performance.

M. Marenberg,[1] C. M. Clark,[2] J. Basso,[1] L. Fiorenzo,[1] P. Grugan,[1] D. J. Rader.[2] *1. Jefferson Medical College, Philadelphia, PA; 2. University of Pennsylvania School of Medicine, Philadelphia, PA.*

Supported By: National Institute on Aging

Background: Few studies have focused on the relationship of HDL and LDL Cholesterol (HDL-C and LDL-C) with cognitive

function in non-demented elderly subjects. Furthermore, no studies have examined the role of Lipoprotein(a)[Lp(a)] with cognitive performance.

Objectives: To examine the association of HDL-C, LDL-C, and Lp(a) with cognitive performance in specific neuropsychological domains.

Methods: 113 non-demented community dwelling subjects age 60 and over were recruited. Subjects were excluded if they had a history of stroke or depression. A trained psychometrician administered a cognitive battery to all subjects. The battery included Digit-Symbol Substitution, Rey Auditory Verbal Learning Total (RAVLT) and Recall, Biber Figure Total and Recall, and Stroop Color-Word. Plasma lipid levels were obtained from a fasting sample. All lipid values were stratified by quartile. For HDL-C and LDL-C, we compared the quartile with the best profile (HDL-C >73 mg/dl, LDL-C < 75 mg/dl), with the other three quartiles. For Lp(a), the highest quartile was compared with the other three. Multiple linear regression models were used to obtain mean test scores adjusting for age group (75 and less, or greater than 75), education, race, gender, smoking, statin use, history of heart disease and diabetes.

Results: We found an interaction between HDL-C and age in measures of executive function. Higher levels of HDL-C were associated with better performance on both the Digit Symbol and Stroop($p<0.05$)in subjects aged 75 or less. There was no association between HDL-C and measures of verbal or visual memory. We did find, however, an interaction between LDL-C and age in measures of memory and learning. Lower LDL-C levels among those over the age of 75 were strongly associated with higher cognitive performance in both RAVLT Total and recall, and neared significance in the Biber Tests. Finally, higher Lp(a) levels were negatively associated with scores on the RAVLT Total and Recall at all ages in the cohort.

Discussion and Conclusion: This is the first study to demonstrate a strong association between Lp(a) and memory in a diverse elderly cohort. In addition, HDL-C and LDL-C appear to be associated with cognition in specific domains. These results suggest that there may be different pathological mechanisms underlying the association of LDL-C and HDL-C and cognitive performance.

C119

Characterization of Inducible Alzheimer's β Secretase (BACE1)Transgenic Mice.

N. I. Sedora-Román,[1] M. H. Farah,[2] D. L. Price,[3] P. Wong.[4] *1. University of Puerto Rico School of Medicine, San Juan, PR; 2. Department of Pathology, Johns Hopkins University School of Medicine, Baltimore, MD; 3. Department of Pathology, Neuroscience, Neurology, Johns Hopkins University School of Medicine, Baltimore, MD; 4. Department of Pathology, Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD.*

Supported By: This work has been supported by the National Institute on Aging, The John A. Hartford Foundation and The American Federation for Aging Research.

One of the classical lesions produced by Alzheimer's Disease (AD) is the formation of neuritic plaques composed of extracellular deposits of amyloid β-protein surrounded by dystrophic neurites, reactive astrocytes and microglia in selected regions of the brain. The amyloid β-protein is derived from the human amyloid precursor protein (APP) by the activities of two secretases that sequentially cleave the precursor: β-site APP cleaving enzyme 1 (BACE1) and gamma secretase. Due to the critical role that BACE1 plays in the generation of the amyloid β (Aβ) peptides implicated in AD pathogenesis, recent research has suggested that its suppression could present a high priority therapeutic target for AD. Supporting this notion, studies have demonstrated that BACE1 deficiency completely inhibits Aβ deposition as well as age-associated cognitive abnormalities in mouse models of Aβ amyloidosis. These results have contributed to the development of a highly relevant question in experimental therapeutics for AD: to what extent after reduction of Aβ generation does an aged nervous system recover from Aβ amyloidosis? The purpose of this study was to further explore this question through the generation and characterization of an inducible BACE1 (tet-BACE1) transgenic mouse model in which BACE1 expression can be temporarily and spatially regulated under the control of a tet-off system. To do so, study methodology included crossing tet-BACE1 mice with CaMKIIα-tTA mice to generate a mouse that over-expresses BACE1 in the forebrain where a CaMKIIα promoter is activated. By using Western blot analysis of BACE1 protein expression within brain cortex and hippocampus, five lines of potential mice were screened. The result of this study was the identification of two lines of tet-BACE1 transgenic mice with increased expression of BACE1 protein levels. In conclusion, future experiments with these two lines of transgenic mice will assess whether BACE1 inhibition beginning in adult life at various stages of Aβ- mediated pathology can reduce levels of Aβ protein, the number of neuritic plaques, and cognitive deficits occurring in our mouse model of amyloidosis.

C120

Hyperventiation Syndrome Presenting as Lightheadedness and Left Side Numbness.

N. F. Erdem, J. Busby-Whitehead. *Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC.*

History: An 81 year old woman with hyperlipidemia and recent discontinuance of Prempro, presented with a two week history of intermittent patchy left (L) arm, leg and face numbness and lightheadedness. The L side numbness was patchy, without weakness, pain or paresthesias and mostly in leg. The lightheadedness or "foggy feeling" was not associated with vertigo, palpitations, dyspnea, chest pain, hot weather or dehydration. She reported lightheadedness was sometimes worse standing, and asked for help walking, but denied balance problems or falls. She had no previous psych history, however did recently move to a retirement community.

Physical: Cardiac and Neuro exam were both normal even during episodes.

Labs/Imaging/Other Tests: Labs were normal except elevated cholesterol. EKG, nuclear stress test and Echo were normal. Twelve episodes of lightheadedness during Holter were associated with sinus rhythm, and occasional PACs and PVCs. EEG showed mild bitemporal slowing, but no epileptiform discharges. MRI of the brain showed restrictive diffusion in the right pontine area consistent with subacute infarct, thought to be an incidental finding. Aspirin was switched to Plavix. ENT testing for vertigo was negative, however, during the visit she was asked to take 10 quick deep breaths which reproduced her symptoms. She was diagnosed with Hyperventilation Syndrome (HVS) and prescribed alprazolam 0.25mg which she took daily, resulting in complete resolution of symptoms.

DISCUSSION: HVS can present with respiratory, CAD, neuro or GI symptoms without overt hyperventilation. Minute ventilation exceeds metabolic demands, resulting in hemodynamic and chemical changes. Because hyperventilation can be a symptom of conditions such as PE, MI, DKA and drug withdrawal, HVS is a diagnosis of exclusion and patients have extensive workup. The frequency in women to men is 7:1, and peak incidence is from 15-55 years. HVS has unknown pathophysiologic cause; however it has been associated with an abnormal respiratory response to stress, sodium, lactate and other chemical and emotional triggers. Reliance on thoracic rather than diaphragmatic breathing results in high residual volume, followed by dyspnea, and subsequent anxiety, lightheadedness, numbness, and palpitations. HVS is associated with panic and anxiety. Psychotropic medications such as benzodiazepines, SSRIs and TCAs have been used for successful treatment.

C121

The Effect of Baseline Systolic Blood Pressure on Cognitive Function in Older Community Dwelling Women: The Women's Health and Aging Study II.

S. Nothelle,[1] M. Carlson,[2] S. Yasar.[3] *1. Indiana University School of Medicine, West Lafayette, IN; 2. Department of Mental Health, Johns Hopkins University School of Public Health, Baltimore, MD; 3. Geriatric Medicine and Gerontology, Johns Hopkins University, Baltimore, MD.*

Supported By: Hartford Foundation AFAR Grant

Background: Hypertension has been extensively studied as a risk factor for cognitive decline and dementia. There is intriguing epidemiological evidence that hypertension, particularly increased systolic pressure, predicts cognitive decline in later life. The majority of these studies evaluated global cognitive function, but few have looked at the effect of awareness or treatment of hypertension on cognitive function. Purpose: To evaluate the relationship between baseline systolic blood pressure (SBP) and global cognitive function in participants of the Women's Health and Aging Study II. Methods: 436 non-demented, community-dwelling participants over the age of 70 were included in this study. All were physically high-functioning and cognitively intact at baseline. Measurements included blood pressure, Mini-Mental State Examination (MMSE), self-reported history of hypertension, diagnoses, and treatment. Covariates included age, education, race, vascular disease, and body mass index. Multivariate linear regression analysis was used to evaluate cross-sectional associations at baseline. Results: In multivariate analysis, baseline systolic hypertension, according to the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, predicted poorer cognitive performance on MMSE compared to normal SBP (beta coefficient = 0.094; p = 0.05). This effect was mostly attributed to participants with stage one hypertension (beta coefficient = 0.21; p = 0.008). Participant's awareness of their hypertension or use of antihypertensive medication did not alter these associations. Conclusion: Elevated SBP predicted poorer performance of global cognition in this population of older women. There is a J-shaped relationship between blood pressure and global cognitive function in the population of non-demented community-dwelling female participants aged 70 and older, and this is independent of antihypertensive medication use. Future research is warranted to examine the associations between BP measurements over the life span and cognitive function.

C122

An Immunohistological Study of Dementia Pugilistica: Evidence of Intraneuronal Accumulation of Aβ42.

X. Lian, E. Capetillo-Zarate, G. K. Gouras. *Department of Neurology and Neuroscience, Weill Cornell Medical School, New York, NY.*

Supported By: The Henry Adelman Fund for Medical Student Education

Purpose: Dementia pugilistica (DP) is a disorder that primarily affects professional boxers. Boxers over age 50 are likely to exhibit neurological symptoms, such as ataxia, extrapyramidal movements, and cognitive deficits, from repetitive concussive and subconcussive blows to the head. Previous neuropathological studies of DP showed similarities to Alzheimer's disease (AD), including deposition of extracellular β-amyloid (Aβ) plaques and hyper-phosphorylated Tau neurofibrillary tangles (NFTs) in the brains of ex-boxers. Recent research has demonstrated early accumulation of Aβ within vulnerable neurons in AD. We hypothesized that there would also be evidence of intraneuronal Aβ accumulation in the brains of ex-boxers.

Methods: A histopathological study was carried out on the brains of two ex-boxers (ages 67 and 71). Immunohistochemical (IHC) staining with antibodies to amyloid β-42 and NFT-related Tau protein (AT8) was performed on different brain regions.

Results: IHC staining supported previous studies' findings of extracellular diffuse and senile Aβ plaques in brains of DP patients. Staining also demonstrated significant accumulation of intraneuronal Aβ. Double IHC staining for intraneuronal Aβ and hyper-phosphorylated Tau revealed co-localization in certain neuronal populations.

Conclusions: This preliminary study highlights the presence of intraneuronal accumulation of Aβ, in addition to presence of plaques and tangles, in the brains of dementia pugilistica patients. These pathological findings are similar to those of Alzheimer's disease and suggest the possibility of a common pathogenic mechanism for the formation of plaques and tangles in the two diseases.

C123

Treatment of Waldenström Macroglobulinemia with a Dual PI3K and mTOR Inhibitior.

E. N. Husu,[1,2] A. M. Roccaro,[1] M. J. Mohler,[3] I. M. Ghobrial,[1] A. Sacco,[1] M. R. Melhem,[1] A. Azab,[1] X. Jia,[1] H. T. Ngo,[1] F. Azab,[1] J. Rennels,[1] P. Quang,[1] X. Leleu,[1] M. J. Mohler,[3] I. M. Ghobrial.[1] *1. Dana-Farber Cancer Institute / Harvard Medical School, Boston, MA; 2. University of Arizona College of Medicine, Tucson, AZ; 3. Arizona Center on Aging / University of Arizona, Tucson, AZ.*

Supported By: Novartis, American Federation for Aging Research

Background

Waldenström Macroglobulinemia is an elderly male-dominant B-cell cancer making up 1-2% of hematologic cancers that is characterized by bone marrow infiltration and serum monoclonal IgM gammopathy. Signs and symptoms include serum hyperviscosity, organomegaly, anemia, fatigue, abnormal bleeding, and Bing-Neel syndrome. Median survival is 5-6 years. Targeted therapies are needed. PI3K/Akt is constitutively active in WM regulating the cell cycle, growth, survival, and migration. Once activated, Akt phosphorylates downstream targets, including mTOR. Both PI3K/Akt and mTOR are valid targets. We evaluated the antitumor activity of NVP-BEZ235 (Novartis, MA) in WM.

Methods

WM cell lines (BCWM.1) and IgM-secreting cell lines MEK1 and Namalwa were used. Bone marrow primary CD19+ malignant cells and bone marrow stromal cells (BMSC) were obtained from WM patients. Cytotoxicity, DNA synthesis, and cell cycle were measured using the MTT assay, [3H]-thymidine uptake, PI staining/flow cytometry, respectively. Effects of NVP-BEZ235 on cell signaling cascades were determined using immunoblotting and immunofluorescence.

Results

NVP-BEZ235 induced cytotoxicity and inhibited DNA synthesis with an IC50 of 20-25nM in BCWM.1 at 48 hours. Similar effects were demonstrated in all IgM-secreting cell lines and in primary CD19+ WM cells, with an IC50 of 20-50nM. No cytotoxicity was observed on peripheral blood mononuclear cells. We observed that NVP-BEZ235 inhibited Akt in a dose-dependent manner in BCWM.1 cells at 6 hours. Phosphorylation of GSK3α/β and S6R, downstream target proteins of Akt, were also markedly inhibited. NVP-BEZ235-inhibited Akt phosphorylation was also confirmed by immunofluorescence. NVP-BEZ235 induced caspase-9 and PARP cleavage, and increased the release of Smac/DIABLO from the mitochondria, suggesting an induction of apoptosis in a caspase-dependent and -independent manner. NVP-BEZ235 inhibited adhesion of WM cell lines to fibronectin in a dose-dependent fashion. Finally, adherence to BMSCs did not confer protection to WM cells against NVP-BEZ235-induced cytotoxicity.

Conclusions

NVP-BEZ235 has significant antitumor activity in WM, and may have a future in the treatment of WM.

C124

Feasibility of inpatient geriatric assessment for older adults with acute myelogenous leukemia.

H. D. Klepin, L. R. Ellis, D. Levitan, B. L. Powell. *Comprehensive Cancer Center, Wake Forest University, Winston Salem, NC.*

Supported By: This research was supported in part by the Wake Forest University OAIC (P30 AG-021332)

Background: Acute myelogenous leukemia (AML) largely affects older adults, for whom optimal therapy is unclear. Evidence based strategies are lacking to identify those older adults who may tolerate and benefit from standard therapies.

Objective: Test the feasibility of pre-treatment, inpatient geriatric assessment (GA) in older adults hospitalized with newly diagnosed AML.

Methods: Prospective evaluation of consecutive patients ≥60 years of age with newly diagnosed AML and planned induction chemotherapy admitted to a single institution from 6/2007-6/2008. Bedside GA was performed within 72 hours of diagnosis. The GA measures obtained by a trained nurse included Mini-Mental Status Exam (MMSE), Center for Epidemiologic Studies Depression Scale (CES-D), Charlson Comorbidity Index (CCI), Vulnerable Elders Survey-13 (VES-13), Short Physical Performance Battery (SPPB, includes timed 4 meter walk, chair stands, standing balance), and grip strength. Measures to assess feasibility included: 1) recruitment; 2) time to complete the assessment, and 3) proportion completing entire GA battery.

Results: Among 22 eligible inpatients, 11 enrolled (50%). The median age was 71 (range 63-78) and 72.7% were female. Laboratory measures included white blood cell count (mean=24.6x103/mm3, SD 26.2x103), hemoglobin (mean=8.5 g/dl, SD 1.6), and platelet count (mean=60.3x103/mm3, SD=38.4x103). All participants successfully completed the self-report GA measures; 66.6% completed all physical performance tasks. Mean time for completion of the GA was 36.8 minutes (SD 9.8). Mean scores for survey measures included: MMSE=26.1 (range 21-30, SD 3.2), CCI=1.6 (range 0-4, SD 1.1), CES-D=22.9 (range 8-37, SD 11.0), VES-13 survey=5.0 (range 1-8, SD 2.5). Among those tested, a wide range of objective physical performance was demonstrated including mean SPPB total score=7.4 (range 5-10; SD 2.1), 4 meter walking speed =0.36 meters/second (range 0.18-0.61; SD .15), and mean grip strength=29.3 kilograms (range 12-62; SD 16.8).

Conclusions: Inpatient GA appears feasible in older adults hospitalized for AML. Our preliminary findings demonstrate significant variability in cognitive, emotional and physical status. These measures may represent valuable candidate predictors of outcomes, and ongoing studies will identify which measures are most predictive of treatment morbidity and response.

C125

Improvement of Anemia is Associated with Improved Survival in Elderly Heart Failure Patients.

J. Ortiz,[1] M. Mendez,[2] S. Nieto,[1] N. Muñoz,[2] P. Renieblas,[2] C. Sanchez,[2] A. Perez,[2] L. Audibert.[2] *1. Geriatric Service, Hospital Gregorio Maranon, Madrid, Spain; 2. Internal Medicine, Hospital Gregorio Maranon, Madrid, Spain.*

Supported By: Helth Department

Introduction. Anemia is prevalent in elderly patients with Heart failure (HF) and is associated with increased morbidity and mortality. Whether treating mild anemia in elderly HF patients remains to be determined.

Objective. The present study examines, in elderly patients with HF and mild anemia, the effect of improvement of anemia on survival.

Patients and Methods. Of 306 consecutive elderly patients included in a HF disease management program, 152 were found to have anemia. Of these, 125 were studied. Anemia was defined according to the WHO criteria. All patients received HF management according to guidelines. Treatment of anemia included iron or erythropoietin plus iron in most of the patients. At the end of follow-up, patients were divided into 2 groups: Anemia Improved (AI) if Hb improved during follow-up (N=89) and Anemia Not Improved (ANI) if Hb decline or remained equal (N=36). Primary outcome measure was survival after admission to the HF program. Kaplan-Meier curves and log-rank test, and Cox regression model were used to determine if recovery of anemia is an independent predictor.

Results. At baseline, there were no differences between AI and ANI in Hb (10.9 vs 11.2 g/dL; AI vs ANI), age (79 yr), functional status and NYHA class, Charlson comorbidity index, renal function, left ventricular ejection fraction and proportion with severe pulmonary hypertension. Over a mean of 9.5±6.5 months, mean Hb levels increased to 12,5±1.3 in the AI group and decline to 10.6±1.5 g/d in the ANI group; 12/89 (14%) patients in the AI group and 12/36 (33%) in the ANI group died. Patients in the AI group were less likely of dying than the ANI group during the observation period (log rank test: p=0.018). In Cox regression analysis, after adjusting for baseline and other prognostic variables, the AI group was independently associated with increased survival time.

Conclusions. In elderly HF patients with mild anemia, improvement of anemia leads to improved survival. Efforts should be made to diagnose and treat even mild degrees of anemia in elderly HF patients

C126

Age and the Incidence of Adverse Events in Older Breast Cancer Patients Receiving Chemotherapy<b/>

M. Boeck, L. T. Vahdat. *Weill Cornell Medical College, New York, NY.*

Supported By: Supported By: 2008 AFAR Medical Student Training in Aging Research Program

BACKGROUND: An estimated 1 in 8 women will experience breast cancer in her lifetime, with approximately half of those ≥ 65 years. Yet there is a lack of enrollment of older patients in novel chemotherapy clinical trials due to fears of increased toxicity, resulting in fewer options for potentially effective treatments.

OBJECTIVE: To determine whether a higher incidence of adverse events (AEs) occurs in breast cancer (BC) patients ≥ 65 years treated in a series of clinical trials.

METHODS: A retrospective chart review was conducted across a collection of chemotherapy clinical trials for advanced BC. A total of 34 subjects (N=34) were selected based on the following inclusion criteria: female gender, ≥ 50 years, advanced/metastatic disease, and ≥ 1 prior chemotherapy regimen. Exclusion criteria included male sex and individuals less than 50 years of age. Data collected included age, race, comorbidities, number of investigational chemotherapy cycles, dose changes, worst National Cancer Institute (NCI) Common Terminology Criteria (CTC) 3.0 grade per AE, and overall survival. Subjects were grouped into cohorts based on age and analyzed for number of AEs, median number of cycles completed, and percent scheduled dose changes. Incidences of adverse events were compared across cohorts.

RESULTS: The 34 subjects analyzed were divided into cohorts as follows: 50-54 (N=11); 55-59 (N=9); 60-64 (N=7); 65+ (N=7). Subjects in the 65+ category showed similar or decreased incidences of hematological (N=3; 42.9%), gastrointestinal (N=6; 85.7%), dermatologic (N=3; 42.9%) and fever (N=1; 14.3%) toxicities as compared to younger cohorts. Older patients did not show an increased occurrence of CTC grade 4 AEs (N=2; 5.4%), and actually had less frequent CTC grade 3 events (N=6; 16.2%) versus younger patients. Individuals aged 65+ completed the most chemotherapy cycles (N=46; median: 6) and reported the least amount of scheduled dose changes due to AEs (N=11; 23.9%).

CONCLUSIONS: Older breast cancer patients perform well on chemotherapy clinical trials, with comparable if not lower incidences of certain AEs, more completed cycles and fewer scheduled dose

changes. It is critical to consider this patient population when developing innovative treatment strategies in order to benefit all women affected by breast cancer irrespective of age.

C127

Relationship between Osteoporosis and Congestive Heart Failure.

O. Santana,[1] C. Simpson.[2] *1. University of Puerto Rico School of Medicine, San Juan, PR; 2. Geriatric Medicine and Gerontology, Johns Hopkins University, Baltimore, MD.*

Supported By: This work was supported by the National Institute on Aging, The John A. Hartford Foundation, and The American Federation for Aging Research.

Objective: The purpose of the study was to ascertain if there is a relationship between osteoporosis and congestive heart failure (CHF). It is known that CHF leads to inefficient heart pumping which may result in a decreased ejection fraction and blood pressure lowering in some forms of CHF. In order to compensate, the heart will increase its rate or pump with a greater force. Both methods require calcium in order to be effective. Since the calcium demand may be increased in both processes the body may rely on greater bone resorption in order to obtain this mineral. This in turn may lead to lower bone mass density and more susceptibility to fractures. These measures can worsen CHF.

Methods: Logistic regression used in a cross sectional analysis of the Women's Health and Aging I sample population (n=1002) to assess the relationship between osteoporosis and CHF after adjusting for race, history of smoking, myocardial infarction, cholesterol, body mass index, medications, diabetes mellitus, income, hypertension, vitamin D and CHF. Osteoporosis and CHF are defined on the basis of adjudicated data, standardized clinical algorithms, medical record review, objective data and self report reviewed by trained clinicians to adjudicate whether disease was present.

Results: The regression analysis showed that the odds of developing osteoporosis increased by 39% [95% CI 1.25 – 1.55, $p < 0.05$] in women with smoking history. Females with high cholesterol were 33% [95% CI 1.17 – 1.54, $p < 0.05$] more likely to have osteoporosis along with a 26% [95% CI 1.14 – 1.41, $p < 0.05$] increase in those with hypertension. Women who did not have CHF were 18% [95% CI 0.72 – 0.92, $p < 0.05$] less likely to acquire osteoporosis as well as those who had adequate vitamin D levels decreased their risk by 18% [95% CI 0.72 – 0.92, $p < 0.05$].

Conclusions: Women who do not have CHF are less likely to develop osteoporosis because of the lack of calcium demand for compensatory mechanisms required by the heart. A healthy vitamin D status also contributes to this effect. The implications of this study include generating a better assessment of the connection existing between these two conditions. In doing so, physicians can provide their patients with more accurate and complete information regarding both diseases thereby reducing the amount of patients that may feel uninformed about these impairments.

C128

OOPHORECTOMY MAY IMPAIR DETRUSOR CONTRACTILITY IN A MURINE MODEL.

P. Smith,[1] P. Zvara,[2] T. J. Heppner,[2] M. T. Nelson,[2] G. Kuchel.[1] *1. University of Connecticut Health Center, Farmington, CT; 2. University of Vermont College of Medicine, Burlington, VT.*

Supported By: Pathogenesis of Detrusor Underactivity and Urinary Retention in the Frail Elderly, NIH 5R01AG028657-02, George Kuchel MD, PI.

OBJECTIVE:

Menopause and aging are associated with an increased prevalence of lower urinary tract dysfunction. Estrogen-related changes in bladder sensation, voiding threshold, and detrusor morphology have been described, although voiding pressures seem to be unaffected by estrogen loss in animal models. We sought to investigate the relationship of bladder afferent and detrusor motor activity in response to estrogen loss in a murine model.

METHODS:

Mature female B6 mice were used in ex vivo and in vivo cystometric studies. The menopausal effect of oophorectomy (OVX) was confirmed by vaginal smear. Five OVX and 4 sham-operated (SHAM) were sacrificed 8 weeks after surgery for ex vivo cystometry. Bladders with urethra and nerve bundle were excised intact, mounted on a transurethral filling catheter and bathed in Tyrode solution. Bladder afferent nerve activity was detected using a suction electrode as the bladder was filled and bladder pressure recorded. Ten animals (5 OVX, 5 SHAM) underwent suprapubic catheter placement under isoflurane, followed by awake ambulatory cystometry 48 hrs later. Data were analyzed using ANOVA and t-test adjusted for multiple comparisons.

RESULTS:

Bladder weight, bladder pressure thresholds for bladder nerve afferent activity at 10%, 50% and 90% activity, and compliance did not differ between ex vivo cystometry groups. During in vivo studies, OVx animals demonstrated significantly lower amplitude non-voiding contractions (NVCs) than SHAM animals (11.8 +/- 0.7 vs 9.4 +/- 0.5 cm/w). NVC count, voiding frequency, voiding contraction pressure threshold and maximum voiding bladder pressure did not differ between groups.

CONCLUSIONS:

The decrease in mean isometric bladder pressure during NVC, in the absence of voiding pressure changes, threshold changes, or afferent output suggests that oophorectomy might induce a decrease in the detrusor muscle work potential which may be compensated by altered sphincteric function during voiding. Future studies into this aspect of the impact of estrogen loss on detrusor function will require assessment of voiding flow, quantity and rates, as well as intra-abdominal pressure during voiding.

C129

INTERPRETER ATTENDANCE AT URODYNAMIC STUDY IS AN IMPORTANT DETERMINANT OF STUDY INTERPRETATION.

P. Smith,[1] E. Hurtado,[2] R. Appell.[3] *1. Surgery, University of Connecticut Health Center, Farmington, CT; 2. Northern Virginia Pelvic Surgery Associates, Annandale, VA; 3. Vanguard Urologic Institute, Houston, TX.*

OBJECTIVES Intraobserver reliability of post hoc urodynamic interpretation is greater than interobserver reliability, demonstrating the importance of the observer to the interpretation. We hypothesized that interpreter interaction with urodynamic study is an important determinant of study interpretation. Our primary objective was to assess intraobserver reliability of post hoc interpretation vs. interpretation at the time of study. We secondarily assessed interobserver reliability of post hoc readings.

METHODS 55 consecutive urodynamic studies administered by each of two urodynamicists and interpreted at the time of study were de-identified and later re-interpreted by the same two physicians. History and exam findings, cystometric tracing, uroflow summary and radiographs were available for interpretation. Intraobserver (post hoc vs live interpretation) and interobserver (post hoc vs. post hoc) reliability was assessed by correlation coefficients for quantitative data, and Cohen's kappa statistic and chi-square analysis for categorical data.

RESULTS Both interpreters evaluated all 110 studies. Interobserver correlations for quantitative data were good to very good, r2=0.611 – 0.914, except for compliance which showed poor correlation. For categorical observations, intraobserver reliability was best for stress incontinence (SUI, kappa 0.85) and detrusor overactivity

(inappropriate contractile activity) (DO, 0.50). Interobserver reliability was best for SUI (kappa 0.88) and DO (0.70). Primary diagnosis demonstrated fair intraobserver and interobserver reliability (kappa 0.37, 0.26. Primary treatment recommendation demonstrated fair intra- and interobserver reliability (kappa 0.26, 0.31).

CONCLUSIONS Post-hoc Interpretive outcomes such as diagnosis and treatment recommendations demonstrate only fair agreement with those made at the time of study by the same physician. The reliability is similar to interobserver reliability of post hoc reading. Our results suggest that the physician responsible for diagnosis and treatment should be an active participant during urodynamic study.

C130

Elderly patients affected by cancer and dementia do not die only because of cancer.

R. Rozzini,[1,2] I. Sleiman,[1] S. Boffelli,[1] M. Trabucchi.[2] *1. Internal Medicine & Geriatrics, Poliambulanza Hospital, Brescia, Italy; 2. GRG, Geriatric Research Group, Brescia, Italy.*

Dementia and cancer increase their prevalence in old age and frequently occur in the same patients. When these diseases co-occur their independent impact in determining prognosis is not clear.

We would like to explore this issue presenting data obtained in a population of 2843 older persons, consecutively discharged from a Geriatric Ward (Poliambulanza Hospital, Brescia, Italy) during a 30 month period.

For the aim of the study patients were divided into four groups: (a) patients without dementia and without cancer (n=2138); (b) patients with cancer but without dementia (n=234); (c) patients with dementia but without cancer (n=416), and (d) patients with cancer and with dementia (n=55).

The diagnosis of dementia was performed according to the DSM IV criteria; patients included were those with a degree of dementia moderate to severe and requiring continuous assistance. The clinical stage of cancer, obtained by physical and radiologic examination and endoscopy, included patients with metastasized cancer. Among the 289 patients 94 had lung, 74 gastroenteric, liver and pancreas, 48 renal and genitourinary, and 28 emathologic malignancies. Three months mortality was the outcome measure of our analysis.

The mean age was 78+8.1; patients with dementia were significantly older than those without dementia (82.9+7.7 vs 77.7+7.9).

Three month survival was 94.2%, 81.2%, 77.9%, and 69.1% respectively in groups (a), (b), (c) and (d) suggesting that dementia significantly increases the mortality of cancer patients (+12.1%, a value comparable with that induced by cancer in patients not affected by dementia, i.e. +13%).

Results induce important evaluations on clinical and ethical grounds, particularly on the appropriateness of cancer chemotherapy in old patients with a coexisting dementia. We may summarize the interpretation of the data with the statement that "cancer patients affected by dementia do not die only because of cancer". All decisional procedures regarding treatments should derive from this statement.

C131

Directly Observed Discussions in Palliative and End of Life Care: A Systematic Review of the Literature.

B. Fine,[1] J. Sequeira,[2] C. Reid,[1] R. D. Adelman.[1] *1. Weill Cornell Medical Center, New York, NY; 2. Human Ecology, Cornell University, Ithaca, NY.*

Supported By: This work was supported by a grant from the John. A Hartford Foundation.

Purpose: Well-developed communication skills are essential for successful palliative care practice. This study sought to review communication-based research focused on direct observation (through audiotaped or videotaped interactions) of palliative care/end of life care patients or their families and treating physicians.

Methods: Extensive bibliographic searches (from 1/98 through 10/08) of English-language literature were conducted. Reference lists of identified studies were hand-searched for additional articles. Studies were retained for review if they 1) focused on some aspect of communication between clinicians and patients/families and 2) employed direct observations (i.e., video or audio-taped) of the encounters.

Results: Eighteen studies were retained in the final sample. Of these (N=18), 53% focused on communication at the end of life, whereas the remaining 47% focused on non end of life palliative care discussions. Seven categories of communication were identified: quality of life discussions between physicians and patients (7%); discussions about advance directives between physicians and patients (13%); alteration of meaning of discussion by translators (7%); examining content/process of communication between physician and family and impact on family satisfaction (20%); examining content/process of communication between physicians and families (20%); examining content/process of communication between patients and physicians (20%); and interventions designed to promote more discussions between patients/families and their physicians (13%). Only one study employed videotaping. Conclusions: To date, few studies have employed direct observation of physician-patient communication in the area of palliative care. Most studies in this review concentrated on end of life communication (e.g., withdrawal of care), which is only a subset of palliative care communication. This review can be used to generate a research agenda for direct observational based communication studies in palliative care.

C132

The Association of Expectations Regarding Aging and Diabetes-Related Utilities.

A. N. Winn,[1] P. M. John,[1] C. A. Sarkisian,[3] D. O. Meltzer,[2] E. Huang.[1] *1. Section of General Internal Medicine, University of Chicago, Chicago, IL; 2. Section of Hospital Medicine, University of Chicago, Chicago, IL; 3. Geriatrics, University of California, Los Angeles, CA.*

Supported By: This study was supported by a NIA Career Development Award (K23 AG021963), a NIDDK Diabetes Research and Training Center (P60 DK20595), the Chicago Center of Excellence in Health Promotion Economics, and a CDC-Potential Extramural Project (U36-CCU319276).

Purpose: Patient preferences for treatments are highly variable and may be shaped by beliefs/expectations about future health outcomes. The Expectations Regarding Aging (ERA) 12 scale is an established instrument that quantifies patient's beliefs about their future health. We set out to examine the association between ERA scores and treatment and complication utilities associated with diabetes. Methods: From 2003-2006, face-to-face interviews were conducted with patients, 18 and older, living with type 2 diabetes, attending clinics in the Chicago area. The ERA 12 scale was administered with the scores ranging between 0 and 100. The scores were broken into quartiles for this analysis. We used utilities as our measure of preference; utilities are on a 0 to 1 scale. We elicited treatment (intensive glucose) and complication (blindness, amputation, kidney failure) utilities using the time trade off technique. We used linear regression in unadjusted and adjusted analyses (accounting for demographics, education, diabetes duration, comorbid illness, and functional status). Results: We had data from 591 patients who completed the ERA 12 scale. The mean age of this groups was 62 with a standard deviation of 13.6, 43% were women, 30% were African Americans, and 17% were Latinos. Patients had a mean duration of diabetes of 9.59 years. The mean ERA 12 scores for the population was 43.5 with a standard deviation of 21.8. In unadjusted analysis, higher ERA scores were associated with higher treatment and complication utility ratings. When comparing the highest and lowest quartile of ERA scores, the ERA scale coefficient for the intensive glucose control utility was 0.196 ($p < 0.01$). Similar associations were

found for complications (blindness 0.182, end stage renal disease 0.112, and amputation 0.168 (all p's<0.01). In adjusted analyses all the previous results stayed significant except for end-stage renal disease. Conclusion: Patients with the highest expectations for aging rated both treatment and complication states higher than patients with low expectations. These results suggest that having higher aging expectations may contribute to patients' desire for aggressive medical care. However, it remains unclear whether different expectations for aging lead to different treatment decisions.

C133

Determining Appropriate Guidelines for Enrollment into Hospice in the Severely Demented Nursing Home Patient.

S. Hobgood, M. C. Galicia-Castillo. *Internal Medicine/Glennan Center for Geriatrics and Gerontology, Eastern Virginia Medical School, Norfolk, VA.*

PURPOSE:

Dementia is under-recognized for hospice enrollment. Studies have suggested that Medicare guidelines are not helpful or accurate in assessing patients for hospice placement. This study is an extension of the work completed by Mitchell et al (2004), comparing guidelines put forth by Medicare versus Mitchell for the enrollment of demented patients in nursing homes into hospice programs.

METHODS:

Retrospective review of admissions to the dementia unit of a local nursing home. Patients meeting diagnostic criteria for severe dementia were reviewed further for eligibility for hospice enrollment. The Mitchell and Medicare criteria were applied retrospectively to assess eligibility for hospice enrollment and scored simply as Eligible or Not eligible. The Mitchell guidelines resulted in a numeric score that correlated to a percent of predicted mortality. If this score was equal to or greater than 6, the patient qualified for hospice enrollment. Medicare guidelines require patients to meet all the criteria in the screening tool. Records were coded for event of death and months from admission to death among deceased subjects or the most recent chart update among living subjects (range: 0.25 months to 89.75 months, overall mean lifetime = 64.9 months). Kaplan-Meier survival analysis was used to determine how well each criteria set predicted the occurrence of or duration until death.

RESULTS:

To date, 63 patient admissions have been reviewed. Our goal is to achieve an N of 130 subjects to reach .80 power with alpha = .05. Preliminary data reveal a trend suggesting that patients who met Mitchell guidelines (mean lifetime = 56.2 months; n = 16) were more likely to die earlier and more often than those that did not meet the guidelines (p= 0.129). Very few patients have qualified for hospice enrollment based on the Medicare guidelines (n = 4), one of whom died at 3.25 months.

CONCLUSION:

Our preliminary findings suggest that the Mitchell criteria may be a better prognostic tool for predicting mortality and therefore indicating appropriate hospice enrollment. This alternative and promising metric has the potential to favorably impact our ever-aging society. Improving the accuracy of hospice enrollment will benefit the patient, family, caregivers, and facilities, and additionally allow for more appropriate allocation of funds, time, and services.

C134

Measuring functional decline in hospitalized older medical patients: a systematic review.

B. Buurman,[1] B. C. van Munster,[1,2] J. C. Korevaar,[2] R. J. de Haan,[1] S. E. de Rooij.[1] *1. Geriatrics, Academic Medical Centre, Amsterdam, Netherlands; 2. Clinical epidemiology and biostatistics, Academic Medical Centre, Amsterdam, Netherlands.*

Background: The objective of this systematic review was to study the instruments used and the definitions applied in order to measure the functioning and functional decline of acutely hospitalized older patients.

Methods: We systematically searched Medline, Embase and the Cochrane Database of Systematic Reviews (CDSR) from 1990- July 2007. Articles were included if they (1) focused on acute hospitalization for medical illness in older patients; (2) described the instrument used to measure functioning; and (3) outlined the clinical definition of functional decline. Two reviewers independently extracted data.

Results: In total, 24 studies were included in this review. Five different instruments were utilized to measure functioning: the Katz ADL index, the IADL scale of Lawton and Brody, the Barthel index, FIM, and CNA. Item content and scoring between and within the instruments varied widely. The minimal amount for decline, as defined by the authors, referred to a decrease in functioning between 2.4% and 20.0%.

Conclusion: This review shows that there is a large variability in measuring ADL functioning of older hospitalized patients and a large range of clinical definitions of functional decline. These conceptual and clinimetric barriers hamper the interpretation and comparison of functional outcome data of epidemiological and clinical studies. In view of the

range of complex methodological questions to be answered on the road to standardization of measuring functioning and functional decline of older (hospitalised) patients, we propose that a task force will take these questions into account.

C135

Geriatric Fracture Center Co-Morbidities.

I. B. Menzies,[1] K. W. Bingham,[1] D. A. Mendelson,[1] S. L. Kates,[2] S. M. Friedman.[1] *1. Department of Geriatrics and Healthy Aging, University of Rochester, Highland Hospital, Rochester, NY; 2. Department of Orthopaedics and Rehabilitation, University of Rochester, Highland Hospital, Rochester, NY.*

Supported By: NIA T32 Research Training in Geriatrics and Gerontology

Hartford/AGS Geriatrics for Specialty Residents award

AO Foundation

Synthes unrestricted grant

Highland Hospital, Rochester, NY

PURPOSE: Hip fracture is a common and serious consequence of falls in older people, with a mortality rate of 30% at 1 year. Many hip fracture patients are frail and have significant co-morbidities, which may lead to adverse outcomes and prolonged hospitalization. The purpose of this study is to describe the common co-morbidities in the hip fracture patients presenting to a Geriatric Fracture Center in upstate New York and to examine the effect of co-morbidities as quantified in the Charlson score on time to surgery, length of stay, and overall complication rate.

METHOD: 252 patients, aged 60 years and older admitted for surgical repair of a non-pathological, low-impact, proximal femur fracture between July 1, 2007 and June 30, 2008, were evaluated. Variables included were age, gender, race, ethnicity, history of previous fractures, pressure ulcers, Parkinson's disease, failure to thrive, and all co-morbid illnesses defined in the Charlson Index. Outcome variables were defined as length of stay, time to surgery, and overall complication rate. Statview was used to calculate descriptive statistics, and linear and logistic regressions.

RESULTS: The mean age on admission was 84 (range, 60-104), with 76% female and 95% Caucasian. The most frequent co-morbid illness reported was dementia (51%). Other common medical conditions were peripheral vascular disease (42%), congestive heart failure (24%), chronic pulmonary disease (23%), tumors (23%), previous fragility fractures (15%), myocardial infarction (13%), cerebrovascular disease (12%), diabetes (10%) and failure to thrive (10%). The

mean Charlson score was 3.27 (SD 2.12). For every 1 point increase in the Charlson score, the length of stay increased by 0.25 days (95% CI 0.09 to 0.38; p<0.0013), and the risk of developing an in-hospital complication increased by 25% (OR 1.25, 95% CI 1.1 to 1.4, p=0.0008). The mean time to surgery was 21.2 hours (SD 14.5) and was not affected by the Charlson score.

CONCLUSION: Patients with multiple co-morbidities presenting for proximal femur fracture repair have longer length of stay and increased risk of in-hospital complications. The outcomes of these patients depend critically on how effectively their co-morbidities are managed.

C136

Postoperative cognitive dysfunction after cardiac surgery: A Systematic Review.

K. Schreiber,[1] J. L. Rudolph.[2,3] *1. Loyola University Stritch School of Medicine, Maywood, IL; 2. Geriatric Research Education and Clinical Center, VA Boston Healthcare System, Boston, MA; 3. Division of Aging, Brigham and Women's Hospital, Boston, MA.*

Supported By: VA Rehabilitation Resaerch and Development Career Development Award

NIH Grants: 5 T35 AG026781, 5R03AG029861-02

Introduction: Postoperative cognitive dysfunction (POCD) can be a detrimental outcome after cardiac surgery and can have grave effects on the lives of elderly patients. POCD is associated with increased length of stay and rehabilitation often accompanied with discharge to a nursing care facility. The purpose of this literature review was to determine if a standard definition of POCD exists.

Methods: Electronic databases as well as reference lists were searched for studies involving cardiac surgeries (coronary artery bypass graft surgery and valve repair/replacement surgeries) on adult participants between 1995 and 2008. The studies selected reported baseline and postoperative measures of cognitive function using neuropsychological tests. Studies with less than fifty participants, those with children / adolescents and cardiac procedures were excluded. Demographics, comorbidities, mood assessments, neuropsychological tests, and definitions of POCD were recorded.

Results: In total, 1188 abstracts were screened and 53 unique studies were included. Four definitions of POCD were used with similar frequency: percent decline (n=15), standard deviation (n=11), factor analysis (n=12), and individual test analysis (n=12). Using the percent decline definition, the median prevalence of POCD was 51% (range 7-70% for <3 weeks, 26% (range 6-51%) for 3 weeks to 5 months, 24% (range 13-57%) for 6 months to 1 year, and 24% (range 23-50%) for >1 year. The neuropsychological batteries used included 93 different neuropsychological tests and only 33% (n=17) included the full recommended battery.

Conclusions: The literature uses many methods and definitions for POCD. A unified definition of POCD must exist in order to accurately measure this phenomenon.

C137

Differences on characteristics and in-hospital and one-year outcome between intra and extracapsular hip fractures in the elderly.

M. Álvarez-Nebreda, E. Marañón, S. Nieto, E. Gallego, Y. Gracia, J. Serra. *Geriatrics, Gregorio Marañón Hospital, Madrid, Spain.*

Objective: to study differences on characteristics, in-hospital outcome, functional recovery and mortality after one year,of elderly patients with intra or extracapsular hip fractures.

Methods: prospective longitudinal study including 1638 consecutive patients older than 64 years with a hip fracture, from October 2004 to April 2008.We compared patients with an intracapsular(subcapital fractures, Intracapsular Group, IG,N=722) or extracapsular(per or persubtrochanteric, Extracapsular Group, EG,N=916) hip fracture. Descriptive variables analyzed were:social-demographic characteristics, functional status(Katz), ambulation(FAC) and complications. We analyzed mortality and functional recovery (to recover previous FAC and Katz) after in-hospital rehab and 3, 6 and 12 months after discharge. We collected this information by telephone interview.

Results: mean age: 83.5±7.2 years. 82% female. 20% living in nursing facilities. 33% independent on all B-ADL. 81% walking independently. 31% demented. Patients with extracapsular fractures (EG) were older (41 vs 29% of patients older than 80 years) but there were no differences on basal functional scores or number of comorbid conditions. EG developed more medical complications (77 vs 68%,p<0.001). A weight-bearing non-authorized period of time was needed more frequently on EG (15 vs 2%, p<0.001). More patients in IG were eligible for in-hospital rehab (71 vs 63%,p=0.003). Patients of EG changed more frequently their basal location (new nursing home placement:7.9 vs 3.5%) and they needed more public or private aids. There were no differences neither in-hospital mortality nor at 3, 6 or 12 months. Patients of IG recovered their previous independence for walking in more percent after in-hospital rehab than EG (45 vs 32%,p<0.001) and also after 3 months (61 vs 47%,p=0.003). There were differences of IG on functional recovery only at discharge of in-hospital rehab (49 vs 40%,p=0.008)

Conclusions: As it has been stated on the literature, patients with extracapsular hip fractures are older than those with intracapsular, develop more medical complications, need more frequently a postsurgical non-weight-bearing period of time and new nursing home placement or social aids. They recover later their walking ability and functional status but there is no difference on independence or mortality after one year.

C138

SUCCESSFUL SURGICAL CLOSURE OF PRESSURE ULCER USING MULTIPLE STEP SLOW EXPANSION OF SKIN AND TISSUE - A UNIQUE SURGICAL METHOD.

V. Kasiyan,[1] O. Batista,[1] A. Lodha,[1] A. Vela,[1] D. Dave,[1] E. Schessel,[1] K. Patel,[1] W. Paik,[1] T. Efuwape.[2] *1. Department of Geriatrics, Flushing Hospital Medical Center, New York, NY; 2. Family Medicine, Jamaica Hospital Medical Center, Jamaica, New York, NY.*

BACKGROUND. Management and healing of Stage IV pressure ulcers in elderly compromised patients with comorbid conditions is challenging. Under standard protocols, healing rates are 40%. A unique and novel method of slow expansion of the defect is utilized so that the pressure ulcer is closed surgically, with promising results up to 100%.

METHOD. The department of Surgery and Division of Geriatrics at Flushing Hospital Medical Center collected data on 261 patients with 268 pressure ulcers that were treated with this method. Average age was 76(range of 54-97); and patients were divided into subgroups based on CVA/spinal injury, diabetes status, tube feeding, and ventilator use. The lesions were cleaned using a combination of local toilet and sharp debridement aided by the use of antimicrobial agents. The procedures were carried out at bedside. The margins of the lesions were excised and gently undermined, usually by finger dissection, thereby allowing the skin to slide without inversion. Sites for insertion of the devices were selected, between which a series of paired 2/0 nylon sutures were inserted 2-3cm from the wound margin and 2cm apart. The devices were then placed between the previously tied sutures and additionally secured by the long ends of the sutures. Well padded occlusive dressings prevented pressure on the wound, dislodgment of the device and contamination. Dressings were changed every other day. After the skin and subcutaneous tissues were approximated and sutured, the wound underwent final healing. In debilitated and hypoproteinemic patients, the sutures were retained until the wound was healed. The appliances used were well tolerated.

RESULTS The non-diabetic non-paraplegic patients had the highest healing (closure) rate of 100%. The non-diabetic but paraplegic patients had 90% healing rates. Healing rates in diabetics (without comorbities) were variable based on site of ulcer (sacral-67%, trochanteric-89%, ischial- 100%). Diabetics with tube feeding (sacral-52%, trochanter -72%); Diabetics with tube feeding and vent (sacral- 35%, trochanteric- 49%).

CONCLUSION: Slow skin and tissue expansion(after debridement) over several days, followed by surgical closure is a quick and effective method for stage IV pressure ulcer treatment.

Poster Session D

Friday, May 1
2:30 pm – 4:00 pm

D1

Functional Consequences of Weight Regain 12 Months After a Successful Weight Loss Intervention.

M. F. Lyles,[1] X. Wang,[1,2] J. Demons,[1] B. Nicklas.[1] *1. Internal Medicine: Gerontology/Geriatric Medicine, Wake Forest University, Winston Salem, NC; 2. Nutritional Science, Washington University School of Medicine, St. Louis, MO.*

Supported By: NIH grants RO1-AG/DK20583and the Wake Forest University Older Americans Independence Center P30-AG21332.

Intentional weight loss results in loss of both fat and lean mass. Clinicians may hesitate to advise weight reduction to overweight older patients because of concern that muscle loss will result in loss of strength and physical function. The majority of individuals who successfully reduce their weight eventually experience weight regain. Whether this weight regain results in loss of strength or physical function is not clear. We report on changes in strength and physical performance in 41 overweight/obese postmenopausal (58.3±4.6yrs) women who had regained ≥2kg by the time of a follow up visit occurring 12 months post completion of a 20-week weight loss intervention (350 kcal daily energy deficit).

Mean weight loss during the intervention was 12.0±4.4 kg and mean weight gain over the next 12 months was 7.5±3.9 kg. Results confirmed our earlier report that the weight loss intervention did not result in loss of physical function, assessed by measures of grip strength, knee strength, leg muscle quality (knee strength per kg of lean mass) and chair rise time (see table). Additionally, there were no significant changes in the same measures at 12-month follow up to weight loss, despite the regain of over 50% of the lost weight. These results indicate that there were not detrimental consequences of weight loss and subsequent weight regain on muscle strength/quality, or on an accepted measure of global function in postmenopausal women.

Weight Gainers (n=41)

	Baseline	Post wt loss	12-month follow-up	p baseline-post	p post-wt loss-12 month follow-up
Grip Strength (kg)	28±6.0	28.2±5.7	27.6±6.1	0.81	0.46
Knee Strength (Nm)	73.1±30.8	72.6±26.6	70.8±35.7	0.94	0.71
Leg Muscle Quality (Nm/kg Lean Mass)	1.44±0.57	1.52±0.49	1.42±0.61	0.54	0.35
Chair Rise (seconds)	12.8±1.9	12.2±1.8	11.9±2.0	0.39	0.40
Body Weight (kg)	89.2±12.4	77.4±12.9	84.6±14.9		<.0001
Total Lean Mass (kg)	51.1±6.5	47.6±6.5	49.4±7.2		<.0001

D2

Predictors of breast discomfort among postmenopausal women.

S. Park, D. Markovic, M. Huang, G. Greendale, C. Crandall. *University of California, Los Angeles, Los Angeles, CA.*

Supported By: MSTAR, AFAR, NIA, UCLA

Background: Menopausal hormone therapy (HT) induces breast discomfort in some women. This study investigates whether specific dietary, anthropometric, medication, vitamin, and lifestyle factors influence new-onset breast discomfort among postmenopausal women initiating HT or placebo.

Methods: The Postmenopausal Estrogen/Progestin Interventions Trial (PEPI) randomized postmenopausal women aged 45-64 years to daily placebo or oral conjugated equine estrogen only (0.625 mg/d) with or without a progestogen (medroxyprogesterone acetate or micronized progesterone). We analyzed data from the 675 PEPI participants who were compliant with assigned treatment. At baseline and 12-month follow-up, information regarding lifestyle and dietary factors and pre-randomization HT use (stopped at least 3 months prior to randomization) was assessed via self-report questionnaires, and body mass index (BMI) was measured. New-onset breast discomfort was defined as presence of breast discomfort (tenderness, sensitivity, and/or pain) at 12-month follow-up in the absence of breast discomfort at baseline. We used multivariate logistic regression to analyze the association between predictors (dietary, medication or supplement use, anthropometric, and lifestyle factors) and new-onset breast discomfort (outcome), and to determine whether these effects varied by treatment group.

Results: Women who exercised strenuously in the past 12 months were less likely to have new-onset breast discomfort (adjusted OR [aOR]=0.64, CI 0.40-1.03, p=0.07) than women who did not exercise strenuously. The effects of pre-randomization HT use on new-onset breast discomfort varied by treatment group (interaction p value 0.05). Pre-randomization HT use was inversely associated with new-onset breast discomfort in the estrogen plus progestogen treatment groups (aOR=0.65, p=0.08), but not in the placebo or CEE only arms. Baseline BMI>25kg/m^2 was associated with a higher odds of having new-onset breast discomfort in the placebo group (aOR=4.02, CI 1.04-15.48, p=0.04), whereas in the estrogen only and the estrogen plus progestogen treatment groups, BMI was not significantly associated with new-onset breast discomfort. Alcohol consumption, smoking, and vitamin E intake were not significantly associated with new-onset breast discomfort.

Conclusion: Strenuous exercise, recent hormone therapy, and BMI may influence the association between menopausal hormone therapy use and new-onset breast discomfort.

D3

Behavioral Weight Loss Interventions in Obese Older Adults: A Systematic Review and Meta-Analysis.

L. K. Barre, A. King, J. Cyrus, R. Larson. *The Dartmouth Institute for Health Policy and Clinical Practice, Lebanon, NH.*

Objective:

To identify behavioral weight reduction interventions that are safe and effective in producing weight loss in overweight and obese older adults.

Methods:

We searched The Cochrane Library (2008, Issue 4), MEDLINE (1950 to October 2008), CINAHL (1982 to 2008), PsycINFO (1960 to 2008), AgeLine (1978 to 2008), ClinicalTrials.gov (October 2008) and the reference lists of relevant studies and reviews. Selected studies were randomized controlled trials comparing one or more behavioral weight loss interventions (diet, exercise and/or behavior modification) to healthy lifestyle or no treatment controls in overweight and obese older adults living in the community. Two investigators independently extracted outcome data and assessed trial quality using standardized forms. We calculated weighted mean differences

(WMD) for percent body weight change and qualitatively assessed adverse outcomes.

Main Results:

Six RCTs with multiple intervention arms and a total of 754 participants met our selection criteria. Outcomes were evaluated for three types of interventions: diet-only (N=1), exercise-only (N=5), and combined diet, exercise, and behavioral modification (DEB) (N=4). The overall quality of the studies was fair. Significant weight loss occurred in the diet-only intervention at 6 and 18 months (WMD -2.80% and -3.70% respectively), and in the DEB interventions at 6 months (WMD -8.07%) after adjusting for sensitivity to supervision of the exercise component. The ≥ 12 month DEB data was too heterogeneous ($I^2 > 50\%$) to combine. There was no significant weight change with the exercise-only interventions at 6 or ≥ 12 months. Lean body mass and bone mineral density were unchanged or reduced in DEB interventions; whereas, in exercise-only interventions lean body mass increased and bone mineral density was unchanged.

Conclusions:

Combined diet, exercise, and behavioral modification interventions appear to cause the greatest weight loss at six months in older adults; although, lean body mass and bone mineral density may decrease.

D4

An Unusual Case of Two New Primary Cancers in a Patient with a Known Prostate Cancer.

A. Iraqi, T. Hughes. *Geriatric Medicine, Syracuse VA medical center, Syracuse, NY.*

Supported By: no financial disclosure.

no conflict of interest

Introduction:

In clinical practice, usually patients have one malignancy with metastasis. It is unusual to see the occurrence of two primary malignancies at the same time. We describe a case where a patient developed two new primary malignancies with

pre-existing prostate cancer.

Case Study:

Mr. A is an eighty two year old male. His medical history included prostate cancer for ten years, COPD and schizophrenia. His medication included goserelin injections 10.8mg every three months. During an episode of COPD exacerbation, chest x-ray showed a nodule in the right upper lobe. Computed tomography (CT) of the chest showed right upper lobe mass suggestive of malignancy. PSA level was <0.1. As the lesion was difficult to obtain through bronchoscopy an interventional radiology guided biopsy was obtained which showed adenocarcinoma. In order to determine suitability for resection he underwent a CT of the abdomen and pelvis which were unremarkable except for an indeterminate left adrenal nodule. To better asses this, a PET scan was obtained which showed non-significant uptake in the adrenals but an area thickening of the sigmoid colon with significant increased metabolic activity highly suspicious for malignancy. He underwent colonoscopy which showed a mass in the sigmoid colon with biopsy showing adenocarcinoma. His case was reviewed in the combined thoracic, pulmonary and oncology conference, and based on immunostains it was the consensus that these were two different primary malignancies and should be treated as such.

Follow-up:

Mr. A underwent left hemicolectomy and adjuvant chemotherapy was offered which he declined. For lung cancer, surgical resection was recommended which he also declined. As an alternative to lung resection, radiation therapy was offered which he agreed to but then stopped it mid course. Mr. A expressed his wishes for comfort care and to enjoy quality of life opportunities in his remaining time.

Conclusion:

This case demonstrates the unusual presentation of having two new primary cancers in

a patient known to have prostate cancer.

D5

Establishing diagnosis of white coat effect on hypertension with telehealth care co ordination(CCHT).

A. Dixit, M. Heflin. *Geriatrics, Duke University, Durham, NC.*

"White coat effect" is described as elevated blood pressure in doctor's office and presumed normal blood pressure in ambulatory setting. It is seen in patients with hypertension and normotensive individuals. Case: Mr. A is 88 Yr old white male patient followed in Veterans Hospital geriatrics primary care clinic. He has H/O HTN since 1996, CAD, CABG in 2003, DM 2 controlled on diet (Hb A1C <7.0), Hyperlipidemia and H/O panic attacks in past. He has smoking history and lives with wife in retirement community. Adverse reactions: cough with ACEI. Mr. A's medical records documented elevated BP in clinic visits in the range of 150-190/70-94. It was confirmed by repeated checking. At home BP readings (verbal corroboration, patient failed to bring records on many occasions) were within normal range on BB, ARB and HCTZ. Physical Exam: HEENT, CVS, RS exam unremarkable, no orthostatic Blood Pressure changes. Abdomen benign without bruits. Neuro. exam. non focal with normal gait without assistive devices, MMSE 27/30 stable over years. No pedal edema.Laboratory NAD. Management: Previous attempts to increase medication dosages for Blood Pressure control based on clinic readings failed due to occasional dizziness and Mr. A and his wife's reluctance. After multiple such visits, personal Blood pressure apparatus was examined and calibrated to confirm consistency of BP readings. Care Co ordination Home Telehealth (CCHT)consult was obtained to verify the home BP monitoring accuracy. Discussion: Studies show that upto 70% of treated patients in primary care had a white coat response and 30% of them exhibited marked white coat effect. Maintenance of BP at goal is necessary for prevention of cardiovascular events. Medication side effects are also real danger in treating elderly patients. High number of patients with white coat effect pose management dilemma for a physician. Care Coordination Home Telehealth co ordinates patient care between multidisciplinary team and patient via technology to prevent unnecessary hospital visits/admissions. Site of care is patient's home. Telehealth technology uses videophones, telemonitering devices, messaging devices in home, a PC enabled interactive system, the telephone and camera equipment as necessary. Follow up: Telehealth BP records will be obtained after equipment is set in Mr. A's house. In the meantime Mr. A will receive counseling about goal BP maintenance for prevention of cardiovascular events in future.

D6

Intact pulses do not rule out peripheral arterial disease in patients with lower extremity ulcers.

C. Mbewe, A. Flattau. *Geriatrics, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY.*

Supported By: No financial disclosures.

Authors: Christina Mbewe, MD; Anna Flattau,MD.

Introduction: Patients with chronic lower extremity wounds should be evaluated for underlying peripheral arterial disease (PAD). Intact peripheral pulses on physical exam are not sufficient to rule out PAD.

Case report: A 90 year old female resident of a long-term care facility had right lower extremity ulcers for over one year. The patient's medical history included recurrent deep venous thromboses, polycythemia vera, hypertension, lower extremity neuropathy and mild dementia. Physical exam revealed bilaterally present and easily palpable dorsalis pedis and posterior tibial pulses. There were no abdominal bruits. Skin exam showed a right lateral calf 2.2 x 2.0 cm

ulcer with a yellow base and a right heel 4.5 x 2.2 cm eschar without drainage. The patient's ulcers were attributed to venous stasis disease and peripheral neuropathy, but they did not respond to local treatment. A wound care service was consulted and recommended vascular studies. These subsequently showed underlying PAD, with a right ankle-brachial index of 0.17. A vascular surgeon recommended revascularization, but the patient refused. Her subsequent clinical course included osteomyelitis of the heel, sepsis, multiple hospitalizations, Clostridium difficile infection, and functional decline.

Conclusion/Discussion: Leg and foot wounds may be complicated by ischemia, even when the wound has other contributing factors, such as venous stasis or neuropathy. The misperception that palpable peripheral pulses rule out significant PAD can delay the diagnosis of this treatable disease. In one study in a predominantly asymptomatic group of patients aged above 50, the sensitivity of an absent pulse for the diagnosis of PAD on the right leg was 32% [1]. In addition, the interobserver agreement to distinguish between palpable, reduced and absent pulses may be poor [2].This case suggests that in patients with non-healing lower extremity wounds, for whom the clinical consequences of undetected ischemia can be severe, ankle-brachial indices should be used to evaluate for PAD even when pulses are palpable.

References:[1]Fam Med. 2006 Jan;38(1):38-42.An absent pulse is not sensitive for the early detection of peripheral arterial disease. Collins TC et al. [2]JAMA. 2006 Feb 1; 295(5):536-46. Does the clinical examination predict lower extremity peripheral arterial disease? Khan NA et al.

D7

Post-Polio Syndrome in the elderly.

D. Mathew, H. Park. *Geriatric Medicine, University of South Florida, Tampa, FL.*

The 1940's and 1950's saw epidemics of acute poliomyelitis afflicting the western world. The survivors of polio from those times are now in the geriatric age category, some of whom have developed post-polio syndrome (PPS). Some of the manifestations of PPS such as progressive weakness might necessitate placement in a long-term care facility. As such, geriatric providers need to be aware of the presentation and management of PPS. The following case report describes an 81-year-old male patient who developed PPS. Patient was diagnosed with bulbo-spinal poliomyelitis at the age of 27 years. At that time his symptoms included dysphagia, slurred speech, left sided weakness and pain. By the time of his hospital discharge eight months later, his dysphagia had resolved but he still had some residual weakness. It took another year of physical therapy before he returned to his baseline. Patient had been symptom free since then leading an active lifestyle till the return of his symptoms two years ago. He developed progressively worsening dysphagia to both solids and liquids along with weakness and pain in his upper extremities. A dynamic video esophagram showed moderate to severe oropharyngeal and esophageal dysphagia causing inability to pass adequate amounts of food without aspiration. Neuromuscular and Electrodiagnostic Testing (EDX) and Electromyography studies (EMG) of both upper extremities were performed. EDX showed evidence of peripheral sensorimotor polyneuropathy affecting both upper extremities and diffuse abnormal EMG of muscles consistent with chronic denervation. Patient lost more than 60 pounds of weight over a period of a year even with rigorous efforts to boost oral nutrition and eventually underwent placement of a gastrostomy tube. He continued to experience progressive weakness and functional decline, which necessitated admission to a long-term care facility. Patient also complained of severe insomnia refractory to many different kinds of hypnotic agents. In patients with PPS, sleep apnea should be considered which might be secondary to bulbar muscle weakness. He is scheduled to undergo polysomnography to evaluate for sleep apnea. Even though the incidence of new polio cases have declined dramatically since the introduction of polio vaccine, geriatric providers will continue to see cases of post-polio syndrome which has its onset decades after the initial episode. This case illustrates a classic presentation of PPS that brings added challenges in an aging patient.

D8

An Unusual Presentation of Multiple Myeloma:Cardiac Tamponade due to Myelomatous Infiltration.

D. H. Remolina, I. Karkatzounis, Z. Karmally, . Olson. *Geriatrics, RUSH, Chicago, IL.*

Multiple Myeloma (MM) and related diseases present with various clinical manifestation and different sites of organ involvement. Pericardial involvement, a rare complication of MM, can be caused by amyloidosis, infections, bleeding or plasma cell infiltration, usually at a late stage of the disease. Tamponade due to myelomatous involvement of the pericardium is a rare clinical manifestation and has been described in only a few case reports. Optimal treatment has not yet been established and is often associated with a fatal outcome. Here we report one patient with a plasma cell dyscrasia presenting with tamponade due to infiltration of myeloma cells.

AK. Was a 69-year-old woman with a two week history of progressive dyspnea, orthopnea, abdominal distention, and edema. Three years before admission she was found to have a monoclonal gammopathy on serum protein electrophoresis. Serum and urine immunoelectrophoresis showed immunoglobulin G (IgG) Lambda MM. She received Thalidomide, dexametasone and bortezomib. An autostem cell transplant done one year after diagnosis failed. She was compliant with follow up examinations until her penultimate admission. On physical examination she was afebrile with moderate respiratory distress and extreme jugular venous distention; breath sounds were decreased at the bases. The heart sounds were distant. The ECG showed sinus tachycardia with low voltage. A CT chest revealed a large pericardial effusion causing right atrial and ventricular collapse. Based on the findings and her clinical deterioration a subxiphoid pericardial window and pericardial biopsy was performed; 400 ml of serosanguinous fluid was removed. Cytology of the pericardial fluid showed an atypical plasma cell infiltrate, consistent with myeloma. After the procedure her condition improved, unfortunately, one week later progressive shortness of breath and hypotension recurred, and she was enrolled in hospice. She died one week later.

Our case illustrates that in MM patients who develop cardiac tamponade, a pericardial effusion due to malignant plasma cells should be considered. Cytological examination of aspirated pericardial fluid usually confirms the diagnosis. This rare clinical picture of multiple myeloma must be kept in mind by practicing oncologist when dealing with the differential diagnosis of pericardial effusion and tamponade which requires immediate therapeutic intervention with pericardial drainage in these patients.

D9

Hypercalcemia crisis and a reversible neurological syndrome.

E. Rodriguez-Frias,[1,2] G. Taffet.[2] *1. BJC- Alton Memorial Hospital, Alton, IL; 2. Geriatrics, Baylor Medical College, Houston, TX.*

75 yo WF with HTN, pAfib presented to the ED with 24 h of progressive confusion, slurred speech, HA, nausea and generalized tonic-clonic type seizure. She also had cortical blindness that improved days later, once the underlying problem was controlled.

BP 140/80, afebrile and PE remarkable for irregular pulse, blurred vision and symmetrical hyperreflexia.

Meds: ASA, diltiazem, amiodarone, quetiapine and metoprolol.

Labs: normal CBC, LFT, SPEP and electrolytes but creatinine 1.4 mg/dl and serum calcium 18.6 mg/dl (nl: 9-10.5 mg/dl), PTH 158 pcg/ml (nl: 13-65 pcg/ml). 25-OH vitamin D 20 ng/ml. RPR, HIV and ANA were negative. Normal cortisol, TSH, vit B12 and folate. Normal ECHO.

Diagnosis: hypercalcemia secondary to primary hyperparathyroidism, proven by imaging diagnostics followed by biopsy after parathyreidectomy.

MRI showed patchy areas of posterior signal abnormality and diffusion restriction in the cortex of the Rt occipital and posterior temporal lobes consistent with posterior reversible encephalopathy syndrome (PRES). No evidence of stroke, mass or hydrocephalus. CSF negative. EEG showed encephalopathy.

A repeat MRI 8 days later showed significant improvement of the signal abnormality and resolution of neurological symptoms once her calcium was normal after appropiate treatment. A f/u 3 months later showed MRI back to normal.

PERS is a relatively recent disorder first described by Hynchey in 1996. 1

Classic presentation: confusion, N/V, HA, seizures, visual changes and posterior transient changes on brain imaging.

Most commonly associated to HTN encephalopathy and miscellaneous including hypercalcemia.

4 prior case reports of PRES and hypercalcemia: 1st related to plasmacytoma, 2nd multiple myeloma, 3rd dehydration and excessive calcium intake and the 4th to HIV with MAI.

This is the first case in relation to primary hyperparathyroidism.

The pathophysiology of PRES and hypercalcemia is not completely understood however vasogenic edema and endothelium impairment are mechanisms in common in hypercalcemia and in similar conditions that cause PRES. 2

In the appropriate clinical setting and classic findings in MRI is paramount to make the diagnosis to treat this reversible condition.

1.Hincheyl J, et al. A reversible posterior encephalopathy syndrome. NEJM 1996;334:494-500

2.Neunteufl T. Impairment of endothelium independent vasodilatation in patients with hypercalcemia. Cardiovasc Res 1998;40:396-401.

D10

Is it Senile Ptosis? An Uncommon Presentation of Carotid Cavernous Aneurysm.

F. Gu, S. Sivalingam, S. Aulakh. *Medicine, Baystate Medical Center, Springfield, MA.*

Senile ptosis or droopy eyelids is a common finding in the elderly requiring no further evaluation. However, true ptosis is associated with significant pathology and requires imaging for definitive diagnosis. We describe a case of ptosis due to Carotid Cavernous Aneurysm (CCA) where careful physical exam was essential in making the correct diagnosis.

Case Presentation

A 68yo white female with a PMH of RA, DM2 and HTN presented to her outpatient clinic with worsening left ptosis. Patient's sister noted that the patient's left eyelid had become droopier since her visit 7 months ago. The patient was unaware of it and denied any change in vision, headaches, muscle weakness, cardiopulmonary complaints or weight loss. She had no history of eye surgery. Her physical exam was positive for left upper lid ptosis and anisocoria, with mild mydriasis of the left pupil measuring 4mm compared to a 2mm sized right pupil. Both optic discs margins were sharp. Bilaterally visual acuity and visual fields were normal, the extra ocular movements were full and pupils were reactive to light and accommodation. The remainder of the exam was unremarkable. An MRI of the brain was obtained and was suggestive of a left-sided parasellar aneurysm. A CT angiogram confirmed a 1.4cm diameter aneurysm in the left cavernous carotid with minimal erosion of the undersurface of the anterior clinoid process and no compromise of the optic canal. The patient was referred to neurosurgery for possible intervention.

Discussion

CCA represents 3-5% of all intracranial aneurysms, seen most often in the elderly female population. The common presentation includes headache (90%), diplopia and photophobia. Isolated CN palsies are relatively uncommon (30%), but when present usually involve the VI cranial nerve (82%). The isolated involvement of III CN as seen in our patient is rare. Positive physical exam findings of true ptosis and mydriasis lead to appropriate imaging and the diagnosis of CCA. CCA is usually associated with low morbidity and mortality. Complications are usually due to compression of neighboring neurovascular bundle or rarely rupture with formation of carotid-cavernous fistula. Treatment options include conservative management or surgical treatment. Recent advances in the endovascular intervention shows promises in the long term outcome of CCAs.

Conclusion:

Careful physical examination can help differentiate benign senile ptosis from underlying pathologic conditions.

D11

The Hotel Bug- an occupational hazard, now in the geriatric population.

H. Tiruvury, W. Paik, D. Asnis, G. Haralambou, M. Ramzan, D. Dave, A. Vela, O. Batista, V. Kasiyan, A. Lodha, M. Bansal, S. Kamal. *Medicine, Flushing Hospital Medical Center, Flushing, NY.*

Introduction: Legionellosis presents as 2 distinct syndromes caused by a bacterium Legionella (L) - Pontiac fever, a self-limiting febrile illness and Legionnaires Disease (LD), manifesting as pneumonia. LD is reported in the 3 most common pathogens causing Community Acquired Pneumonia (CAP), but is under diagnosed. Diagnosis is made with urine L antigen, which is positive in over 90% of cases. The test is most useful when sputum is difficult to obtain and its positivity persists even during antibiotic administration. However, excessive reliance on the urine antigen would compromise the detection of a small but significant minority of infections caused by other serogroups. Hence culture is strongly recommended. We describe the case of a geriatric patient with LD who required respiratory assistance which was almost missed due to his age.

Case: A 65 year old Hispanic hypertensive male working as a hotel houseman came to the ER with complaints of fever with chills, dry cough, shortness of breath and generalized malaise for 4 days. On admission he had a temperature of 40 C, normal WBC count and a chest X ray with a left upper lobe infiltrate. He was admitted to treat CAP with ceftriaxone and azithromycin. During the course of hospitalization, his high grade fevers persisted, shortness of breath and hypoxia worsened, and a subsequent CAT scan of the chest revealed worsening of infiltrates involving the left upper and lower lobes along with pleural effusion. His urine legionalla antigen after admission was positive and high dose levofloxacin was added to his regimen and placed on Bipap to which he responded and was eventually discharged to complete the antibiotic course for 14 days.

Conclusion: LD can be particularly devastating in the geriatric population especially in nursing homes and long term care facilities. In Canada, 2 outbreaks of L. sainthelensi were reported with 29 cases in a 2 month period. This was related to eating pureed food. There was another outbreak related to a cooling tower. Travel associated LD has been implicated from contaminated water in hotels and cruise ships. People who smoke, those with chronic lung disease and immunosuppression are at high risk. As the geriatric population grows and poeple continue to work in high risk environments, LD may become more prevalent. Detection is key, and history is important.

D12

Unusual Complication of Intravesical BCG immunotherapy for Bladder Cancer.

A. Combs-Schildt, R. Gordon, K. C. Nau. *Family Medicine-Eastern Division, West Virginia University, Harpers Ferry, WV.*

A case study was conducted on 58yo male with history of chronic corticosteroid for severe eczema who presented with vesicular, papular erythematous penile lesions while receiving BCG treatment for bladder cancer. Lesions were empirically treated with acyclovir and seemed to resolve. Subsequent breakouts proved resistant

to anti-herpes therapy and a second biopsy of persistent lesions show poorly-formed granulomas; Ziehl-Neelson stain revealed acid fast bacilli. There was no known TB exposure and PPD and CXR are negative. Cutaneous BCG was diagnosed and isonizaid monotherapy was initiated, but discontinued after 2 months due to elevated liver function tests, which remained elevated despite stopping atorvastatin. Viral serology, AFP, and autoimmune hepatitis markers were negative. Infectious Disease consultant recommended liver biopsy to rule out hepatic mycobacterial infection vs drug induced hepatitis, which revealed non-alcoholic steatohepatitis with negative liver AFB and iron stains. Anti-mycobacterial treatment of the cutaneous lesions was not restarted, as lesions resolved - totally by 1 year and still recurrence free at year 5. There were no reports of skin lesions in patient's close family contacts also cared for in this rural health clinic.

Literature review reveals that bladder cancer is the sixth leading primary cancer site in the US and over 90% of the cases occur in those older than 55 years old. Intra-vesical BCG immunotherapy is a widely used and well tolerated therapy for disease confined to the mucosa.BCG directly administered to the bladder elicits a massive local immune response. Greater than 95% of patients tolerate treatment without significant morbidity (Lamm, Clin Inf Dis 2000;31:S86-90). However, local and systemic side effects ranging from dysuria to sepsis have been reported. Such reactions are related to immune stimulation or actual infection; differentiation is often restricted by the fastidious nature of mycobacterium. Limited data suggests BCG immunotherapy can be administered without expecting a higher incidence of adverse events in patients with potential causes of immunodeficiency (Yossepowitch et al, J Urol 2006;176:484-5). Cases of cutaneous involvement are exceedingly rare and almost invariably entail a multispecialty approach.

Conclusion: Clinicians must remain aware that clinical mycobacterial infection can occur due to BCG immunotherapy.

D13

Mesenteric Ischemia and Endovascular Stents: Are We Helping Our Patients?

L. Patel, D. Bynum, A. Caprio, L. C. Hanson, J. Busby-Whitehead. *UNC Division of Geriatric Medicine and Center for Aging and Health, University of North Carolina, Chapel Hill, NC.*

Case Report: A 67 year old woman with a history of tobacco use, poorly controlled diabetes, hypertension, coronary artery disease with bypass grafting and carotid endarterectomy presented with a 1 year history of anorexia, nausea, postprandial diarrhea and vomiting, crampy abdominal pain and a 50-pound weight loss over 5 months. The patient had an extensive evaluation including a normal upper endoscopy, colonoscopy, abdominal CT scan, and gastric emptying study. An MRA was ordered which showed findings consistent with chronic mesenteric ischemia and high grade stenosis of the superior mesenteric artery (SMA). After discussion with vascular surgery, an arteriogram was performed and 3 overlapping bare metal stents were placed at the origin of the SMA. The patient was discharged several days later on aspirin and clopidogrel. These medications were stopped within one month secondary to serious gastric bleeding. Approximately 1 month later, the patient was readmitted with nausea, vomiting and worsening abdominal pain, and a CTA showed a filling defect in the SMA. She rapidly developed hypotension and bradycardia and her arterial lactate rose to 20 mmol/L. She underwent bedside exploratory laparotomy which demonstrated ischemia of nearly all the bowel, likely a result of acute SMA thrombus. No intervention was possible and the patient died within minutes.

Discussion: Surgical bypass remains the definitive treatment for chronic mesenteric ischemia, although endovascular techniques are being used with more frequency. There have been no randomized controlled trials comparing outcomes of surgery versus endovascular therapy, but several retrospective reviews have shown that angioplasty and/or stent placement can be performed with less immediate morbidity and mortality. However, these studies also suggest higher rates of restenosis and symptom recurrence compared to surgery. No studies have documented the risk of acute thrombosis after mesenteric stenting, nor have they defined the duration or type of antiplatelet therapy.

Conclusion: Without further evidence, endovascular therapy should be used only in those patients who have high surgical risk or no surgical options.

D14

Common Presentation but Unusual Cause of Syncope.

M. E. Young, R. Chung. *Boston University, Boston, MA.*

Supported By: no funding was provided for this research

Purpose: We describe a patient with syncope caused by a hiatal hernia. Description: A 64 year old female with a history of diabetes, hypertension and known hiatal hernia presents to the emergency room with syncope after defecation. Patient was admitted to the Geriatric service for further work up. Results: A transthoracic echocardiograph showed marked extrinsic compression of the left ventricular cavity and left atria due to a large hiatal hernia. Computed Tomography of the thorax confirmed a large retrocardiac hiatal hernia including the greater portion of the stomach. Conclusion: Syncope in the elderly is a common reason for hospital admission and situational syncope consisting of vasodilation and bradycardia accounts for up to twenty percent of all cases of syncope. While syncope with swallowing due to an esophageal hernia has been described as well as postprandial syncope from a large hiatal hernia, few reports describe syncope from left ventricular outflow obstruction secondary to a hiatal hernia. This interesting case further illustrates that in the elderly a common presentation of a common illness may in fact have an uncommon cause.

D15

A 93-Year-Old Woman with Dysphagia: A Case of Inclusion Body Myositis.

M. Albaba,[1] A. Ebright.[2] *1. Mayo Clinic, Rochester, MN; 2. Mayo Clinic, Rochester, MN.*

Supported By: We have no financial disclosure.

A 93-year-old nursing home female resident is brought to the hospital for evaluation of difficulty swallowing and functional decline. She describes food and liquids sticking in her mid-chest associated with severe coughing spells. She has been on a modified diet with pureed food and thickened liquids since she had aspiration pneumonia last year. For few weeks her functional status has declined and now she needs assistance to ambulate or transfer. She denies double vision, slurred speech, ptosis, dyspnea, or weight loss. By examination she has normal cognition, and normal cranial nerves. She has a waddling gait, and moderate proximal muscle weakness in all extremities that doesn't improve with repetitive stimulation. Her tendon reflexes are decreased in the lower extremities but normal in the upper extremities. Laboratory tests reveal mild anemia, and normal electrolytes, renal function and muscle enzymes. Antibodies to P/Q-type and N-type voltage-gated calcium channel and to acetylcholine receptors are negative.

On swallowing evaluation she has piriformis pooling, laryngeal penetration and aspiration. Esophageal manometry is suggestive of a neuromuscular pathology with weak pharyngeal response, weak upper sphincter, and ineffective motility. It also reveals a preserved lower sphincter pressure, which makes a connective tissue disorder unlikely. Electromyography (EMG) is indicative of Inclusion Body Myositis (IBM) with a mixed pattern of myopathic and neurogenic changes.

After discussing the likely diagnosis of IBM, management options, and prognosis, the patient decides not to pursue a muscle

biopsy. Her informed decision to continue oral food and liquid intake with aspiration precautions is supported by her family and the medical team. The patient dies within four weeks at her nursing home.

Inclusion Body Myositis is a degenerative muscle disorder with a poorly understood etiology that causes insidious progressive muscle weakness in patients over fifty years of age. Usually Muscle enzymes are moderately elevated. Although EMG often reveals a non-specific increase insertional activity, fibrillations, and polyphasic potentials, a more specific mixed pattern of myopathic and neurogenic changes is seen occasionally. Muscle biopsy makes definitive diagnosis in the majority of cases. Intracellular accumulation of amyloid-beta related protein and T cell inflammatory responses are key diagnostic findings. There is no known reliable treatment for IBM.

D16

A Case study of Polypharmacy and Geriatric Syndromes.

P. Gosukonda, R. Ackermann, K. Kemle. *Geriatrics, Mercer University School of Medicine, MCCG, Macon, GA.*

The patient is a pleasant 85 years old Caucasian female with history of HTN, chronic low back pain, DJD/ OA, anxiety, dementia, and depression, a resident of an ALF, some what dependent in her ADLs.

She developed acute urinary retention and a Foley catheter was placed with no improvement. 3 days later, she developed generalized weakness, facial weakness, and slurred speech, was evaluated in the ED and was found to be confused and disoriented. There was evidence of gross pyuria and non-contrast CT scan of the brain showed no acute hemorrhage. She was admitted to the hospital with diagnoses of altered mental status, UTI, and acute renal failure. Urine culture was positive for MRSA and non-VRE enterococcus. She was discharged to a nursing home for sub acute rehabilitation under the care of our geriatrics team.

Her medications on admission to the nursing home included: aspirin, indomethacin, naprosyn, elavil, buspar, remeron, librax (chlordiazepoxide and methscopolamine), perphenazine, prilosec, carafate, detrol, procardia XL, and zyvox. On examination, she was found to be delirious, had an MMSE score of 17/30, and was completely dependent in her ADLs. After the comprehensive geriatric evaluation, polypharmacy, drug burden, dangerous drug-drug interactions, adverse drug reactions, and geriatric syndromes resulting from medications (urinary retention, delirium, deconditioning) were identified and addressed via the following measures. Patient was moved closer to the nursing station and restraints were removed.

Elavil (TCA), librax (benzo), and perphenazine (antipsychotic) were tapered and withdrawn as their strong anticholinergic actions precipitate and worsen delirium in patients with underlying dementia and depression. Indomethacin, naprosyn, and detrol were stopped, procardia was changed, as NSAIDs along with anticholinergics, bladder relaxants, and calcium channel blockers precipitate and aggravate urinary retention.

Though zyvox was continued, to treat the MRSA in urine, the association of zyvox with delirium was emphasized. Physical, occupational, and speech/swallow therapy were initiated.

Within a few days, patient's physical and mental status improved, and her MMSE score improved to 26/30. She was discharged back to the ALF after successful completion of rehabilitation. Follow up appointment with a geriatrician was made and the patient's family and ALF staff were educated regarding the special aspects of geriatric care.

D17

Parkinson's Disease as a Painful Disorder: Case Report.

P. Duggal,[1] D. K. Weiner.[1,2] *1. Medicine, Division of Geriatrics, University of Pittsburgh Medical Center, Pittsburgh, PA; 2. GRECC, Pittsburgh VA, Pittsburgh, PA.*

CASE:

HPI: An 82 yo independent woman presented with sharp, constant, 8/10 pain in her lower back and both knees for "as long as I can remember." Prior treatments included acupuncture, traction, physical and aqua therapy, and multiple injections. Decompressive laminectomy and bilateral total knee replacements were recommended but the patient refused.

Past History: Depression, osteoporosis.

Medications: citalopram, risedronate, aspirin, prn ibuprofen, calcium and vitamin D

Physical Examination: Mild kyphoscoliosis, bilateral sacroiliac (SI) tenderness, taut bands and trigger points of the piriformis bilaterally, and crepitus of both knees. Neurological exam revealed symmetrical reflexes, strength 5/5, gait with short step length and an anxious affect.

Follow-up: The patient was treated with physical therapy (PT) for myofascial dysfunction, gabapentin for anxiety and bilateral SI joint injections with no response. A more probing history indicated that over the past year the patient's voice had gotten softer and her handwriting had gotten smaller. Exam revealed little facial expression and mild cogwheeling of the right arm. She was started on levodopa/carbidopa 25/100 bid and PT was continued. One month later her pain was 4/10, lumbar flexion had increased from 3.5 cm to 4.6 cm, and her posture, balance and mobility were markedly improved.

DISCUSSION:

Painful sensory symptoms are reported in up to 46 percent of patients with Parkinson's disease (PD). About 25 percent of these patients present with pain that precedes motor symptoms. Pain may be caused by peripheral factors and presents as dystonia, muscle cramps or tightness (typically of the neck, paraspinal or calf muscles) due to abnormal posture (e.g., scoliosis, kyphosis, and/or exaggerated cervical/trunk flexion). This type of pain is dopamine-responsive. PD-associated pain can also be caused by abnormal central processing of nociceptive stimuli that is generally unresponsive to levodopa. In our patient, abnormal pain physiology associated with PD acted as a perpetuating factor of myofascial pain (i.e., taut bands and trigger points) and treatment with dopamine was an essential component of pain management.

CONCLUSION:

Contributors to muscle dysfunction and myofascial pain should be evaluated and treated comprehensively to afford optimal outcomes in the older adult with chronic pain. PD is one such factor.

D18

Elderly female with congenital adrenal hyperplasia and severe osteoporosis.

R. O. Navia, R. Malik. *Geriatrics, Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY.*

Introduction

Fifty years have passed since the introduction of glucocorticoids for the treatment of congenital adrenal hyperplasia (CAH). Over this time, considerable experience has developed in treating the pediatric patient, but much less is known about long-term outcomes and complications for the elderly population. CAH is a group of autosomal recessive disorders resulting from the deficiency of one of the five enzymes required for the synthesis of cortisol. The most frequent type of CAH is steroid 21-hydroxylase deficiency which is detected in approximately 1 out of 16,000 births and accounts for more than 90 percent of cases.

Case

RP is a 62 year old female with CAH who has been treated with glucocorticoids since her diagnosis was made at the age of 13 years. Due to the congenital pathology, the resident underwent a clitoroplasty at the age of 18 years. She had dilatation and curettage performed three times because of dysfunctional uterine bleeding. Complications of glucocorticoid treatment were evident during her adult life including: pneumonias, bilateral rotator cuff syndrome, cataracts, osteoporosis with lumbar compression fracture and hypertension.

Biphosphonates were prescribed for osteoporosis but she developed mandibular osteonecrosis. A recent fall resulting in a right hip fracture led her to have an arthroplasty and be admitted as a permanent resident to a nursing home.

Conclusion

Patients with CAH should be carefully followed from childhood through late life by multidisciplinary teams who have knowledge of the disease and who can provide preventive care to avoid the deleterious effects from chronic steroids. It is important to note that there is actually no consensus on the treatment for adults including the type of glucocorticoids, the timing of steroids (circadian versus daily dosing), and the method for calculating dosage (weight or surface area). Despite the conflicting information, it is universally recommended to screen for osteoporosis through BMD (Bone Mass Density) measurements. It is also possible that 25-hydroxyvitamin D deficiency, induced by glucocorticoid use, plays a role in the loss of bone mass. Finally, glucocorticoid therapy has been linked with increased risk for cardiovascular diseases (dyslipidemia, hypertension and decreased insulin sensitivity). Prospective studies are needed to better understand the late life consequences of CAH.

D19

Bisphosphonate related osteonecrosis of the jaw in a patient with underlying primary hyperparathryoidism.

R. Gundavarapu, A. Ehrlich. *Geriatrics, Montefiore Medical center,Albert Einstein College of Medicine, Bronx, NY.*

Background

The vast majority of cases of bisphosphonate related osteonecrosis of the jaw (ONJ) occur in patients receiving intravenous bisphosphonates for the treatment of malignancy.However,over 100 cases of ONJ have been reported in patients receiving oral bisphosphonates for the treatment of osteoporosis.The predisposing factors for the development of ONJ after treatment with bisphosphonates are not well understood.

Case Report:

An 85 year old female had a past medical history significant for primary hyperparathyroidism(HPTH), hypertension,congestive heart failure,lung cancer treated with pneumonectomy and breast cancer treated with modified radical mastectomy.The diagnosis of primary HPTH was made in 2002 when the patient presented with mild hypercalcemia,parathyroid hormone of 111 pg/ml(10-65 pg/ml)and normal Vitamin D 25-OH.Bone density at that time showed moderate osteoporosis and the patient was started on Alendronate.In 2007,the patient underwent routine extraction of two teeth.She presented several months later with an occult fracture of the mandible at the site of the extraction,severe pain,erythema and recurrent extra and intra oral fistulas.She was treated with multiple courses of antibiotics for presumed osteonecrosis of the jaw.Alendronate was discontinued at this time.She underwent a bone biopsy,which confirmed the clinical diagnosis of osteonecrosis of the mandible.Her course was complicated by antibiotic associated Clostridial Difficle colitis and severe weight loss.She recovered spontaneously and has not had a recurrence for over 18 months.

Discussion:

A review of the medical literature reveals that ONJ has been associated with dental extractions in the setting of oral bisphosphonates.Three co morbid conditions,diabetes, rheumatoid arthritis and steroid use,have also been associated with ONJ.However,there is no data regarding preexisting bone pathology or the severity of osteoporosis in patients who developed ONJ.Current recommendations include undergoing a comprehensive oral examination before beginning treatment with oral bisphosphonates.Primary HPTH is prevalent in the general population and rises with advancing age.Further research is needed to determine which patients are at risk for the development of ONJ and whether primary HPTH is an additional risk factor for the development of this serious complication of a frequently prescribed medication.

D20

Refocusing the Geriatric Lens: a Case of Ataxia and Inattention.

R. Brown,[1] R. Broudy,[2] A. Fabiny,[2] R. Starr.[2] *1. Medicine, Beth Israel Deaconess Medical Center, Boston, MA; 2. Medicine, Cambridge Hospital, Cambridge, MA.*

CASE:

An 83 yo woman with advanced AD, hypothyroidism and B12 deficiency was noted by caregivers at her ALF to have acute onset of irritability, confusion, and unsteady gait. There was no preceding fall or medication change. Physical exam was remarkable for L>R dysmetria on FNF and markedly ataxic gait. MMSE showed new inattention, and therefore work-up for delirium was pursued. CBC, chemistries, LFTs, TSH, and B12 were unremarkable; U/A was negative and EKG was unchanged from prior. She was re-evaluated in the office the following day, where neurological deficits were again noted, including L>R impairment of cerebellar tasks and persistent ataxia. In this case, the usual work-up for reversible causes of delirium was negative, and focal neurological findings were present. Therefore, head CT was ordered, and revealed a single mass in the L cerebellum and pons. Because primary cerebellar tumors are rare in older adults, the mass was most consistent with a solitary met. Chest CT showed a LUL lung mass, consistent with a primary lung carcinoma and the patient's history of tobacco use. The patient's family opted to pursue palliative care.

DISCUSSION:

Older patients often have atypical and non-specific disease presentations. Common conditions such as UTI, for example, may present with functional or cognitive impairment as the first sign of acute illness. Frailty, age >80 years, and multiple medical conditions including dementia increase the likelihood of atypical presentation.

Though several of our patient's symptoms were non-specific, gait and cerebellar tasks showed focal abnormalities consistent with a cerebellar lesion. While the neurologic exam has poor sensitivity for detecting cerebral hemisphere lesions, the specificity of certain signs including RAM and pronator drift approaches 100% for detecting a focal lesion.

CONCLUSION:

Older people are more likely to have atypical presentations of common conditions. When older people develop new functional or cognitive impairment, it is reasonable to screen for metabolic abnormalities and infection. When focal neurological deficits are present, however, brain imaging may be appropriate.

References

1. Beloosesky Y et al. Atypical Illness Presentation in the Elderly. Israel Med Assoc J. 2000;2:540-543.

2. Anderson LE et al. Detection of focal cerebral hemisphere lesions using the neurological examination. J Neurol Neurosurg Psychiatry. 2005;76(4):545-9.

D21

Recurrent cerebrovascular ischemia associated with drug-induced eosinophilia.

R. Magu.[1,2] *1. Geriatrics, Monroe Community Hospital, Rochester, NY; 2. Division Of Geriatrics, University of Rochester, Rochester, NY.*

We present a case of recurrent stroke in an elderly patient with marked eosinophilia secondary to nitrofurantoin therapy.

A 75 year old caucasian female was admitted to the hospital with new onset left sided weakness and a watershed cerebrovacular infarct was suspected. At admission patient had marked eosinophilia with eosinophils making up 38% of differential. Patient had been receiving nitrofurantoin therapy for 14 days prior to her admission due

to urinary tract infection. MRI and MRA showed no significant atherosclerotic disease but showed multiple foci of acute-subacute infarcts scattered through cerebellar and cerebral hemispheres bilaterally affecting all three vascular territories. Carotid doppler showed no evidence of significant stenosis in both carotid arteries. A trans-thoracic echocardiogram did not show significant valve abnormalities or left ventricular dysfunction. Patient remained in sinus rhythm throughout the hospitalization. The patient was started on high dose steroids after stopping the antibiotics with complete resolution of her eosinophilia. Patient was orally anticoagulated at the time of discharge. The patient was rechallenged with nitrofurantoin for another episode of UTI with immediate rise in eosinophil count to 7.5%. Although medication was immediately stopped this patient developed new right sided weakness within 1 week suggesting another CVA.

This patient's presentation suggests temporal association between eosinophilia and cerebrovascular events. Traditional risk factors for recurrent vascular events were ruled out with appropriate studies although further cardiac evaluation for rhythm disturbance is warranted. Hypereosinophilia is a known pro-thrombotic state and vasculitis associated with hypereosinophilia can cause occlusion in multiple peripheral arteries. Exact mechanisms by which eosinophils cause disturbance in coagulation is largely unknown. It is important to recognize drug-induced eosinophilia as cessation of offending agent and short term steroid therapy promptly normalizes eosinophil count and may shorten the hypercoagulable state associated with these cells.

D22

Prolonged remission of large B-Cell Non-Hodgkin's Lymphoma after one cycle of combination chemotherapy.

R. Lands. *Family Medicine-Geriatric Medicine, Univ of Tennessee Knoxville, Oak Ridge, TN, TN.*

Supported By: Nothing to disclose

A 77 year old white female presented to her family doctor with an enlarging mass in her neck causing difficulty with swallowing. She did not have fever, sweats or weight loss. She had suffered for decades with chronic pain from severe osteoarthritis and had well controlled hypertension. Her only medicines were rofecoxib and diltiazem. Physical exam demonstrated a palpable mass in the neck with shoddy cervical nodes. There were no abnormal nodes in the supraclavicular, axillary or inguinal areas.

Computerized axial tomography (CT) of the neck and thorax demonstrated a 4.4 by 6.8 cm thyroid mass, displacing the trachea to the left of midline. There was no pulmonary pathology. CT of the abdomen and pelvis demonstrated no adenopathy.

Biopsy of the thyroid mass demonstrated malignant B-Cell Lymphoma, large cell type, of moderate to high grade.

LDH was 239 u/L (100-250), SPE-normal, Beta-2-microglobulin 5.3mg/L (<3.0), Alk phos 86 u/L (20-150), AST 19 U/L (2-35), ALT 5 u/L (2-40), Creatinine 1.7 mg/dL BUN 24 Calcium 10.1.

She reluctantly agreed to chemotherapy, reasoning not that her tumor was curable but that the potential for symptoms related to the rapid growth of the mass in her neck might be prevented. She reserved the right to discontinue treatment.

On day 14 of her only cycle of combination chemotherapy, she was admitted to the hospital, febrile and neutropenic. Her family described several days of irrational behavior and hallucinations. There was no mass detectable at this time. She recovered completely but declined further chemotherapy.

Over the following five years, she continued to struggle with her arthritis, occasionally accepting opiods for pain control while her functional status declined to the point she was housebound. At the end of the fifth year she agreed to repeat CT scanning which still demonstrated no evidence of lymphoma.

Discussion: This complete and durable remission of an intermediate grade non-Hodgkin's lymphoma to a single dose of combination chemotherapy highlights the heterogeneity of tumor biology and our struggle to balance risk to benefit. It also applauds an elderly lady who participated in her care and tempers our pride in her remission with the competing morbidities with which she has continued to struggle in the interim.

D23

Thyrotoxicosis mistaken as a fear response in a non-communicative resident of a nursing home.

J. Tompkins, C. Pearman, R. Lands. *Family Medicine-Geriatric Medicine, Univ of Tennessee Knoxville, Oak Ridge, TN, TN.*

Supported By: Nothing to disclose

A 57 year old female who suffered a large parietal infarct at age 27 was a resident at a long term care facility. She was unable to communicate with staff or family and was dependent on tube feedings for nourishment. Her family had observed for several weeks that she had become easily excitable with minimal stimulation, creating an appearance of panic or fear characterized by wide eyed staring.

The patient was admitted to the family medicine inpatient service after nurses at the nursing home discovered her to be in acute respiratory distress. Physical exam on admission demonstrated a pulse of 140 with respirations of 36 and oxygen saturation of 96%. She was hypotensive, flushed and diaphoretic. Cardiac exam demonstrated only the tachycardia. Her lungs were clear to auscultation. CXR demonstrated left lower lobe air space disease. She was treated with broad spectrum antibiotics and fluids for hospital acquired pneumonia.

Admission laboratory also included a TSH of 0.0 uIU/ml (nl 0.3-3uUI/ml). The T4 was 2.8 ng/dL (nl 0.7-1.4 ng/dL), repeat TSH 0.01 uIU/ml and T3 4.05 pg/ml (nl 1.7-3.7pg/ml). Thyroid ultrasound demonstrated a suspicious nodule and a biopsy was recommended. TSH taken during an admission 18 months earlier was 7 uIU/ml.

After noting the abnormal thyroid functions, re-examination demonstrated a slight band of visible sclera above the iris and under the upper lid in both eyes, a fine tremor, and with minimal stimulation, a panicked appearance after which she would become agitated requiring anxiolytics to calm her.

Before the patient could be further evaluated, she developed respiratory distress again requiring transfer to the intensive care unit where she was found to have suffered a myocardial infarction. She declined relentlessly, and given her multiple permanent disabilities, her family opted to treat her with comfort measures rather than pursue painful, meaningless interventions.

Discussion: In retrospect, this patient's change in behavior was probably due to thyrotoxicosis, and the cause of her symptoms was misconstrued. Early diagnosis might have allowed simple medical interventions that could have prevented unnecessary suffering. Hyperthyroidism should be considered in poorly communicative patients who demonstrate a change in behavior, especially one interpreted as fear.

D24

A Case of Dysphagia in an Elderly Woman With a Large Goiter.

S. R. Kadam,[1] T. V. Caprio,[1] S. Kulshrestha.[2] *1. Medicine-Division of Geriatric Medicine, University of Rochester, Rochester, NY; 2. Medicine, Rochester General Hospital, Rochester, NY.*

Supported By: HRSA Geriatric Training Program D01HP08792

History: An 83 year old Caucasian woman presented with syncope and hypoglycemia. She had dysphagia for six months which was ascribed to gastroesopageal reflux disease. She had undergone upper endoscopy which showed a hiatal hernia and an esophageal stricture at the gastroesophageal junction. Even after dilatation of the stricture, she continued to have dysphagia for solids and liquids. This led to anorexia and weight loss of 30 lbs. Functionally, she was independent in her activities of daily living and lived alone. On examination,

thyroid swelling was not appreciated in the neck. Other cardiac and metabolic causes of syncope were ruled out. CT scan of chest revealed an enlarged left thyroid lobe in her mediastinum with tracheal deviation to right. Ultrasound of her thyroid showed a multinodular goiter with the largest nodule in the left lobe. A radio-iodine uptake thyroid scan had abnormally low iodine uptake but no discrete hot or cold nodules. Her past records showed low TSH levels for the last 5 years.

Hospital Course: The patient likely had subclinical hyperthyroidism manifest by low TSH and normal free T4 but she was clinically euthyroid. After discussion of the risks and benefits of undergoing goiter surgery for compressive symptoms and to evaluate for malignancy; she declined surgical options and was discharged on modified diet

Discussion: In our patient, a substernal goiter was an important cause of dysphagia and functional decline. In older adults, the classic manifestations of hyperthyroidism are usually absent and low TSH and normal T4 may not always be hyperthyroidism. Aging and fasting cause decreased conversion of T4 to T3 so T4 levels may be high-normal. Free T3 level must be checked in such cases. Surgery can be considered in substernal goiters even in asymptomatic patients as (1) The goiter size may increase (2) It is inaccessible to needle biopsy and malignancy can be missed. No data is available on the perioperative risk of thyroid surgery in an older adult population.

D25

Delayed diagnosis of a significantly reversible dementia due to patient comorbidities and family influence.

S. Zammam, M. J. Beelen. *Geriatric Medicine, Lancaster general hospital , Lancaster, PA.*

Objective: To increase awareness of this treatable and relatively common cause of dementia that is often overlooked and underdiagnosed. The hallmark symptoms of NPH, gait disturbance, cognitive dysfunction and urinary incontinence commonly occur in the elderly due to comorbid conditions. However the presence of all three symptoms in one patient should raise the suspicion of NPH.

Case report: An 86 year-old retired internist developed gait disturbance in 2007. His prior history included spinal stenosis. His gait disturbance was attributed to spinal stenosis. He also exhibited deterioration in executive function and was no longer able to manage his finances. In January, 2008 he moved to an independent living setting, where he became acutely confused. His son who happened to be a physician suspected Alzheimer dementia and initiated him on donepezil. He was seen by a geriatrician, who ordered lab work which was normal, and performed MMSE on which pt scored 26/30. Ct scan of head was not ordered. A diagnosis of Alzheimer dementia was presumed. Within few months patient's gait disturbance worsened and he frequently fell. He then started to have urinary incontinence and became quite forgetful. His son was alarmed by his rapid deterioration and questioned the possibility of NPH. The patient was subsequently admitted to the hospital for further evaluation and management. MMSE in the hospital was 20/30. Clock drawing was significantly impaired, CT and MRI of the brain showed vetriculomegaly. High volume LP was performed which led to rapid improvement in gait that lasted for few hours. MRI flow study showed hyperdynamic CSF flow. Ventriculosystemic shunt was performed with sustained improvement in gait. One month later the patient was walking with a walker, his urinary incontinence resolved completely. His score on MMSE became 29/30 and his clock drawing normalized

Conclusion: maintaining clinical perspective of NPH is essential since none of the imaging studies is specific enough to diagnose NPH. Usually gait disturbance is the first clinical symptom. The exact cause of primary NPH is unknown. Symptoms include problems with walking, impaired bladder control, cognitive dysfunction. The patient may complain of feet feeling "stuck". Many cases go unrecognized and never treated. Some people recover completely after treatment. Early diagnosis and treatment improves the chance of good recovery.

D26

The Costs of Delayed Diagnosis: Pain, Isolation, Functional Decline.

T. Hartenstein, M. Brennan. *Baystate Medical Center, Springfield, MA.*

Over 99 million Americans live with a chronic illness, osteoarthritis (OA) being one of the most common; it can be debilitating. The complexity of the health care system exacerbates the problem. The authors report a case in which poor coordination of care resulted in delayed hip replacement surgery, imposing an enormous burden of suffering on a previously high functioning elder.

Case:

Mr. B is a 70year old man who was a high school principal when he developed right hip and buttock pain. Intensification of pain forced him to retire, eventually requiring a walker. He had no PCP, but initially was seen by an orthopedist. Imaging indicated a spinal cord problem and referral to a spine specialist ensued. The spine surgeon, however, was convinced that the problem was hip OA; the patient was referred to a hip specialist. The third physician agreed the patient had hip OA and recommended evaluation at a hip center. He could not make a referral as the patient lacked a PCP. Mr. B had trouble finding a PCP, not understanding the insurance referral system, and continued to decline functionally. After a year of pain he presented to a geriatrician. Exam revealed an antalgic gait, partial flexion of the hip and decreased range of motion and quadriceps strength. Reflexes were intact. Advanced right hip OA was suspected; records from the other providers were requested, arriving only after a house officer personally faxed releases and spoke to all the involved physicians. A fourth orthopedist was consulted (as the third had retired) and an uneventful total joint replacement followed. Mr. B is doing well, now home with improved function, though he sustains a flexion contracture.

Discussion:

This case highlights challenges inherent in our healthcare system, particularly for those with chronic illnesses. Mr. B lived for a year without relief as he had no advocate to coordinate and synthesize the opinions of the different specialists. In addition, the mainstays of OA treatment are education and pharmacologic management, with surgery being the last resort. Earlier diagnosis may have resulted in decreased pain and continued ability to work.

Conclusion:

Geriatricians and primary care doctors have critical roles in providing continuity and comprehensive coordination of care for patients with chronic illnesses. As our population ages, additional research into innovative models of care to improve communication and coordination across sites and specialties will be imperative.

D27

The IMPACT Study: Maintenance of Gains After a Brain Plasticity-Based Intervention for Age-Related Cognitive Decline.

E. Zelinski,[1] H. Mahncke,[2] K. Yaffe,[3] G. Smith,[4] R. Ruff,[3,5] R. Kennison.[6] *1. University of Southern California, Los Angeles, CA; 2. Posit Science Corporation, San Francisco, CA; 3. UCSF, San Francisco, CA; 4. Mayo College of Medicine, Rochester, MN; 5. Stanford University, Palo Alto, CA; 6. California State University, Los Angeles, CA.*

Supported By: Posit Science Corporation

Purpose: A randomized controlled double-blind trial to determine if improvements after a cognitive intervention are maintained after a 3-month no contact period.

Methods: The experimental intervention consisted of a brain-plasticity based intensive series of adaptive computerized exercises targeting speed/accuracy of auditory language processes. 487 adults ≥ age 65 with normal cognition (MMSE ≥ 26) were randomized to experimental training (ET) (n=242) or an active control group (AC) receiving computer-based learning matched for novelty and intensity (n=245). Predefined endpoints distinct in design and content from the

training exercises included standardized assessments of memory/attention and participant-reported outcome (PRO) measuring perceptions of everyday cognition. Endpoints were measured at pre-training, post-training, and after a no-contact 3-month follow-up.

Results: Mean age=74.9(6.3), education=15.8(2.6), estimated IQ=114.3(7.7). 87% of the ET and 83% of the AC group completed 3-month follow-ups. Maintenance of training effects was evaluated for each endpoint by comparing statistical significance and effect size over the pre-training/post-training period to the pre-training/3-month follow-up. Measures showing statistical significance at the end of the training period included a directly trained processing speed measure ($p<0.001$, d=0.87), the primary outcome measure (RBANS Auditory Memory/Attention p=0.02, d=0.23), a secondary composite measure (Overall Memory p=0.002, d=0.30), the overall PRO (p=0.001, d=0.33) and the cognitive subscale of the PRO ($p<0.001$, d=0.39). Many of those measures, continued to show significance at 3-month follow-up, including the directly trained processing speed measure ($p<0.001$, d=0.81), and one of the two composite scores (Overall Memory p=0.01, d=0.25). The cognitive subscale of the PRO was significant (p=0.006, d=0. 0.27). The primary outcome measure (RBANS Auditory Memory) was not significant at the 3-month follow-up (p=0.25, d=0.11).

Discussion: Specific cognitive benefits from this intervention are maintained 3 months after the completion of training.

D28

The effect of intra-articular hyaluronic acid on gait in older people with knee osteoarthritis: Preliminary results from a randomized, controlled study.

J. E. DeCaria,[2] R. J. Petrella,[1,2] M. M. Montero-Odasso.[1] *1. Departement of Medicine, Division of Geriatric Medicine, The University of Western Ontario, London, ON, Canada; 2. Faculty of Health Sciences, Kinesiology, The University of Western Ontario, London, ON, Canada.*

Supported By: Funded by CIHR

PURPOSE: Knee OA affects gait leading to a less stable pattern with decreased velocity and high variability. This may result in a higher risk of falls and fractures in elderly people. Intra-articular hyaluronic acid (HA) knee injections are an approved treatment to control pain in this population. However, the effect of this treatment on quantitative gait variables and risk of falls is unknown. Our purpose was to test the effect of weekly HA injections in older adults with knee OA compared with matched controls receiving placebo (P).

METHODS: Twenty-nine older adults with knee OA (15 intervention and 14 controls) were observed. Participants were randomized to receive 3 consecutive weekly knee injections of 2ml HA (20mg of HA) or 1.2 ml P (0.001mg of HA). Gait characteristics were determined with the GAITRite System and clinical outcomes were assessed using the WOMAC OA Index. Treatment effects were determined by comparing week 1(W1) to week 4(W4) outcomes. Intra-group comparison and inter-group comparison were done using Wilcoxon signed-ranks tests and Mann-Whitney tests, respectively. Given the directionality of our hypotheses, one sided $p<0.05$ was considered significant.

RESULTS: Groups were comparable in age (72y), number of comorbidities (35), and history of falls (17). At W1 normal gait velocity for the HA group (HAN) = 113.72 (SD=23.80)cm/s and for the P group (PN) = 113.08 (SD=23.98)cm/s. By W4 HAN = 126.04 (SD=24.79)cm/s (p=.0015) and PN = 121.50 (SD=21.79)cm/s (p=.0165). At W4 WOMAC pain, stiffness, and function scores for the HA group were 8.54 (SD=2.88) (p=.007), 4.14 (SD=.92) (p=.005), and 31.74 (SD=10.97) (p=.002), respectively. No significant changes were found for the P group. The HA group showed greater improvement in WOMAC scores, and were significantly different from P scores at W4 for pain (p = .036), stiffness (p = .031), and function (p = .02).

CONCLUSIONS: HA injections provided a modest improvement in gait function and clinical symptoms one week post-treatment. In particular, normal gait velocity, pain, and stiffness were improved. These findings may indicate that HA treatment in older people with knee OA may improve gait variables associated with higher risk of falls.

D29

The AGELESS Study: The Effect of Aliskiren vs Ramipril Alone or in Combination With Hydrochlorothiazide and Amlodipine in Patients ≥ 65 Years of Age with Systolic Hypertension.

D. A. Duprez,[1] J. Botha,[2] A. N. Charney.[3] *1. University of Minnesota, Minneapolis, MN; 2. Novartis Pharma AG, Basel, Switzerland; 3. Novartis Pharmaceuticals Corporation, East Hanover, NJ.*

Supported By: This study was funded by Novartis

Purpose: To demonstrate non-inferiority between monotherapy with the direct renin inhibitor aliskiren and the angiotensin-converting enzyme inhibitor ramipril on the change from baseline in mean sitting systolic blood pressure (msSBP) after 12 weeks of treatment in patients ≥65 years of age. If non-inferiority was demonstrated, then superiority was tested. Changes from baseline in msSBP and msDBP were also measured at week 22 and 36 endpoints. The proportion of patients achieving BP goal (msSBP<140/90 mmHg), the proportion of patients requiring add-on therapy, and safety/tolerability were also assessed.

Methods: In this 36-week, double-blind, multi-center study, patients ≥65 years with msSBP≥140 and <180 mmHg were randomized to aliskiren 150 mg/d or ramipril 5 mg/d for 4 weeks. If SBP was not at goal at 4 weeks, doses were doubled and SBP was evaluated at 12 weeks. If SBP was still not at goal, hydrochlorothiazide (HCTZ) (12.5→25 mg/d) followed by an amlodipine (5→10 mg/d) regimen (after Week 22) were added and SBP was evaluated at 36 weeks.

Results: 901 patients were randomized (aliskiren n=457, ramipril n=444). Mean age was 72.1 years, 52% were female, 21% were diabetic, 40% were obese (BMI>30 kg/m2), and 85% were Caucasian. Patients >75 years made up 33% of the total population. Change from baseline in msSBP (mmHg) at Week 12 endpoint was -13.96 and -11.64 for aliskiren monotherapy and ramipril monotherapy, respectively (p=0.0241). Significantly more patients on aliskiren-based therapy achieved BP goal at Week 12, 22 and 36 endpoints ($p<0.05$ for each endpoint) and significantly fewer required add-on HCTZ by Week 22 endpoint (p=0.0048) or amlodipine by Week 36 endpoint (p=0.0481). Both treatments were well tolerated but significantly more patients on ramipril had cough at Week 12 and 36 endpoints ($p<0.0001$).

Conclusions: Direct renin inhibition with aliskiren provided greater reductions in SBP and DBP, greater attainment of BP goal, and required less add-on therapies compared to ramipril in elderly patients with hypertension.

D30

High Degree of Agreement between a Point of Care System to Measure Hemoglobin and the Hospital Core Laboratory.

S. Teruya,[1] H. Gil,[1] J. Teresi,[2] J. Kong,[2] J. Eimicke,[2] S. Helmke,[1] M. S. Maurer.[1] *1. Medicine, Columbia University, New York, NY; 2. Hebrew Home for the Aged at Riverdale, Bronx, NY.*

Supported By: NIH/NIA (R01AG027518-01A1)

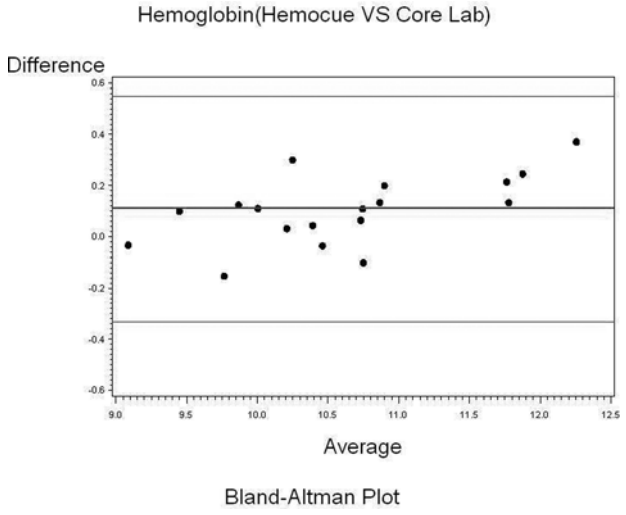
Recruiting and retaining older adults with heart failure (HF) and anemia in randomized clinical trials (RCTs) of erythropoietin (EPO) is difficult, because weekly monitoring of hemoglobin (Hgb) is required to avoid rapid increases that result in adverse events. Accordingly, we are performing home visits during a RCT

(NCT00286182) using a point of care measure (Hemocue). The purpose of this study is to evaluate the agreement of the Hemocue with the hospital laboratory.

Methods: 18 subjects, age 77±11 years, 61% women with diastolic HF in a RCT evaluating EPO were studied. Whole blood obtained each week was compared by two methods: (1) hospital laboratory (Sysmex XE 2100) and (2) Hemocue. Using a random effects model, the mean Hgb of the repeated weekly measures for each subject was determined used to construct a Bland-Altman Plot.

Results: The Hgb as determined by Hemocue and lab did not differ among the 235 samples (10.7±1.2 vs. 10.7±1.0 gm/dl). The intraclass correlation coefficient was high (ICC=0.948, p<0.0001). As shown by the Bland Altman plot below, the limits of agreement were 0.5 gm/dl and –0.3 gm/dl and 100% of the cases within this range. The mean difference was 0.1 gm/dl.

Conclusions: A point of care system for measuring Hgb has excellent agreement with the hospital laboratory. This approach may improve recruitment and retention of older adults in clinical trials in this arena.



D31

Effects of Memantine on Language and Functional Communication in Patients with Moderate to Severe Alzheimer's Disease: a Pooled Analysis.

J. Saxton,[1] M. Tocco,[2] R. K. Hofbauer,[2] S. M. Graham.[2] *1. Department of Neurology, Alzheimer's Disease Research Center, University of Pittsburgh, Pittsburgh, PA; 2. Forest Research Institute, Jersey City, NJ.*

Supported By: Forest Laboratories, Inc.

Objective: To assess the effects of memantine treatment on language abilities and functional communication in patients with moderate to severe Alzheimer's disease.

Background: Memantine is an uncompetitive NMDA receptor antagonist, approved in the US, Europe and in many countries worldwide for the treatment of moderate to severe Alzheimer's disease (AD). In this *post hoc* analysis, the effects of memantine on language and functional communication in patients with moderate to severe AD were analyzed by pooling data from two previously published 24-week, double-blind, placebo-controlled trials of memantine (20mg/day): van Dyck et al, 2007, and Tariot et al, 2004.

Methods: Language items from the Severe Impairment Battery (SIB) were grouped into three subscales: Naming, Reading/Writing, and Comprehension/Repetition/Discourse. Similarly, a Functional Communication score was created using caregiver-reported items that assessed verbal and non-verbal communication abilities from the 19-item AD Cooperative Study - Activities of Daily Living scale (ADCS-ADL$_{19}$) and the Behavioral Rating Scale for Geriatric Patients (BGP). For each measure, treatment groups were compared in terms of change from Baseline at Week 24 (LOCF, OC, MMRM). A third memantine study in moderate to severe AD (Reisberg et al, 2003) did not use the BGP and thus was excluded.

Results: At Week 24, patients receiving memantine (20 mg/day) significantly outperformed placebo-treated patients on the SIB Naming subscale (OC: P=0.035; LOCF: P=0.032; MMRM: P=0.028), and on the Functional Communication score (OC: P=0.004; LOCF: P=0.002; MMRM: P=0.004).

Conclusions: Compared to placebo, memantine treatment was associated with statistically significant benefits in naming and in caregiver-reported functional communication abilities.

D32

Continuous Actigraphy Monitoring in Elderly Heart Failure Patients with A-fib.

N. Verma,[1] A. Biviano,[1] S. Kachnowsi,[2] B. M. Strong,[2] J. Weisenberg,[3] P. Cuddihy,[3] M. S. Maurer.[1] *1. Internal Medicine, Columbia University, New York, NY; 2. Healthcare Innovation Technology Lab, New York, NY; 3. GE Global Research, Niskayuna, NY.*

Supported By: GE Global Research

Background: A-fib commonly afflicts elderly patients with heart failure. Some evidence shows an increase in functional performance in controlled situations with rhythm control; however, little data exists on continuous, long term activity measurements.

Methods: A 3 month, prospective study on a convenience sample of 61 (61±15 years, 48% women, EF 41±16%) subjects with heart failure was conducted. All subjects wore an actigraph, a wrist-watch like device, to measure activity levels and energy expenditure. In addition to demographic and clinical characteristics, quality of life measures (SF-12, CES-D, and MLWHFQ) were also collected. A subset of 13 patients with a-fib was further studied to determine differences in activity levels and quality of life (QOL) measurements.

Results: The a-fib population was significantly older but, otherwise, no different in baseline characteristics. After adjusting for age, the a-fib population did not differ in total energy expenditure; however, patients with a-fib spent more time in sedentary activity, less time in light activity and had less inter-day variability in activity levels than patients without a-fib. Patients with a-fib showed a trend towards significantly less activity during their most active 30 minutes and 6 minutes of the day. There appeared to be no difference between the two groups in QOL measures. (Table)

Conclusions: These data suggest that elderly patients with heart failure and a-fib are less active than those with heart failure alone. Despite these differences, the lower activity levels do not translate to a worsened quality of life. Acitgraphy can be used to measure physical performance in this population and may be useful to determine the impact of interventions for a-fib on real time functional performance.

	A-fib (n=13)	Non A-fib (n=48)	p-value
Age	69.8 ± 15	57.4 ± 15	0.005
Total Energy Expenditure (METs)	2917 ± 1136	3164 ± 899	0.61
Sedentary Activity (min)	831 ± 190	678 ± 130	0.002
Light Activity (min)	545 ± 143	675 ± 107	0.009
Interday Activity Stability	0.53 ± .11	0.45 ± .08	0.01
Most active 30 min (METs)	75 ± 12	84 ± 10	0.09
Most active 6 min (METs)	18 ± 3	21 ± 3	0.07
MLWHF Questionnaire (Mean Score)	36 ± 27	38 ± 24	0.69
Depression (by CES-D)	38%	31%	0.22
SF-12 (Mental Scale Mean Score)	36 ± 10	41 ± 11	0.07

D33

Duloxetine 60 to 120 mg Once Daily Versus Placebo in the Treatment of Patients With Osteoarthritis Knee Pain.

S. E. Edwards,[1] A. S. Chappell,[1] D. Desaiah,[1] H. Liu-Seifert,[1] S. Zhang,[1] V. Skljarevski,[1] Y. Belenkov,[2] J. P. Brown.[3] *1. Eli Lilly and company, Indianapolis, IN; 2. Moscow Medical Academy, Moscow, Russia; 3. Rheumatology and Bone Diseases Research Group, Quebec City, QC, Canada.*

Supported By: Eli Lilly and Company

Introduction: Reduction of pain is crucial to the management of osteoarthritis (OA) as it is a common cause of disability in OA patients.1 Duloxetine is efficacious in treating diabetic peripheral neuropathic pain and fibromyalgia.2,3 In this study, duloxetine (60-120 mg once daily) was evaluated in the treatment of OA knee pain.

Methods: This was a 13-week, randomized, double-blind, placebo-controlled trial in patients meeting American College of Rheumatology clinical and radiographic criteria for OA of the knee, with pain for ≥14 days of each month for 3 months before study entry and a mean 24-hour average pain score of ≥4. Patients were randomized to duloxetine (N=128) or placebo (N=128) and stratified by nonsteroidal anti-inflammatory use. At week 7, patients (33/128) who did not respond to 60-mg dose (≤30% reduction in pain) increased their dose to 120 mg. The primary efficacy outcome was Brief Pain Inventory (BPI) 24-hour average pain, analyzed using a mixed-effects repeated measures approach. Secondary outcomes included Patient's Global Impressions-Improvement (PGI-I), Western Ontario and McMaster Universities (WOMAC) pain and physical functioning, Clinical Global Impressions-Severity (CGI-S), BPI-Severity and -Interference, and weekly 24-hour average pain. Tolerability was also assessed.

Results: Compared with placebo-treated patients, duloxetine-treated patients had significantly greater reductions from baseline on the primary outcome, BPI average pain, from visit 3 through visit 5 ($P<0.001$). Compared with placebo, duloxetine significantly reduced the WOMAC total scores ($P=0.044$), weekly 24-hour average pain ($P=0.008$), and CGI-S ($P=0.009$). The PGI-I was improved significantly in duloxetine treated patients from visit 3 through visit 5 ($P\leq0.05$). Frequency of nausea, constipation, and hyperhidrosis were significantly higher in duloxetine group compared with placebo ($P\leq0.05$). Significantly more duloxetine-treated patients discontinued due to adverse events ($P=0.002$).

Conclusions: Compared with placebo, duloxetine treatment effectively reduced the pain and improved function in patients with OA knee pain; it was well tolerated.

D34

Safety and Immunogenicity of 13-valent Pneumococcal Conjugate Vaccine Given Concomitantly with Trivalent Inactivated Influenza Vaccine in Healthy Adults.

T. Schwarz,[1] J. Flamaing,[2] H. C. Rumke,[3] J. Penzes,[4] C. Juergens,[5] A. Wenz,[5] D. Jayawardene,[6] P. C. Giardina,[7] W. C. Gruber,[7] B. Schmoele-Thoma.[5] *1. Central laboratory and vaccination centre, Stiftung Juliusspital, Wuerzburg, Germany; 2. Geriatric Medicine, University Hospital, Leuven, Belgium; 3. Vaxinostics, Rotterdam, Netherlands; 4. Konszenzus Plusz Kft, Csongrád, Hungary; 5. Wyeth Research, Muenster, Germany; 6. Wyeth Research, Collegeville, PA; 7. Wyeth Vaccines Research, Pearl River, NY.*

Supported By: Wyeth Research

Background: Safety, tolerability and immunogenicity of 13-valent pneumococcal conjugate vaccine (PCV13) given with (+) trivalent inactivated influenza vaccine (TIV) in adults naive to 23-valent pneumococcal polysaccharide vaccine was evaluated. This study provides data on the compatibility of the vaccines before start of a Netherlands-based 2008 efficacy study against community-acquired pneumonia in approximately 85,000 subjects, half of whom may be given PCV13 and TIV concomitantly.

Methods: Subjects aged ≥65 (N=1160) were randomly assigned (1:1 ratio) to receive at 0 and 1 month PCV13+TIV followed by placebo or TIV+placebo followed by PCV13. Immune responses to TIV (A/H1N1, A/H3N2, B antigens) and PCV13 (serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F) were determined before and 1 month after vaccination. Local reactions and systemic events were assessed.

Results: The percentage of evaluable subjects (PCV13+TIV n=549; TIV+placebo n=547) with a 4-fold increase in TIV antibody titer after PCV13+TIV compared to TIV+placebo was A/H1N1 80.3% vs 78.6%, A/H3N2 58.0% vs 62.6%, B 52.2% vs 54.0%. Noninferiority was met for all except A/H3N2, with lower limit of CI = -10.4%, slightly below the predefined lower limit of -10%. The percentage of subjects with HAI titers ≥40 was 94.0%, 96.5%, 81.9% for A/H1N1, A/H3N2 and B after PCV13+TIV. PCV13 IgG geometric mean concentrations (GMCs) 1 month after PCV13+TIV were 1.08 to 11.93 μg/mL, and 1 month after PCV13 alone were 1.15 to 17.10 μg/mL; noninferiority (GMC ratio > 0.5 [2-fold criterion]) was met for all serotypes except 19F, with lower limit of CI=0.49. For PCV13+TIV compared to (1) TIV+placebo, (2) PCV13 alone, any local reactions were mainly mild: 46.9% vs (1)15.9%, (2) 46.6%; systemic events were more frequent after PCV13+TIV: 60.2% vs (1) 50.7%, (2) 48.6%.

Conclusions: PCV13+TIV has an acceptable safety and immunogenicity profile compared to TIV or PCV13 given alone.

D35

30-Day Serious Events in Older Patients With Syncope.

B. Sun,[1,2] S. Derose,[3] A. Moore,[2] W. Mower,[2] C. Mangione.[2] *1. WLA Veterans Affairs Medical Center, Los Angeles, CA; 2. UCLA, Los Angeles, CA; 3. Kaiser Permanente-Southern California, Pasadena, CA.*

Supported By: Dr. Sun was supported by a UCLA National Institute of Aging K12 award (K12AG001004) and an American Geriatrics Society Dennis Jahnigen Career Development Award (20051687).

Objectives. Syncope is a common emergency department (ED) presentation in older adults. Understanding the epidemiology of associated serious events is essential for clinical management and design of prediction instruments. Existing studies are limited by small sample sizes of older patients. We describe 30-day serious events in a large cohort of geriatric syncope visits.

Methods. This is a retrospective cohort study of ED visits for syncope by patients aged 60 and greater. Eligible visits occurred during 2002-2005 at 3 managed care EDs. Study patients were identified by ED discharge code for syncope. Exclusion criteria included head trauma preceding syncope, seizures, and ongoing confusion. Research assistants reviewed charts for study eligibility and screened for predefined serious events. 'Delayed' events were diagnosed after the ED evaluation. All events were reviewed by a physician. Reliability for all elements of screening and chart review was high(K=0.6-0.9).

Results. Of 3,727 potentially eligible ED visits, 2,871(77%) met all eligibility criteria. The mean age was 75 years. There were 744 patients(26%) who experienced a 30-day serious event, and 185(6%) of these events were diagnosed after the ED evaluation. Hemorrhage/anemia requiring transfusion was identified in 3% of patients and was almost always diagnosed in the ED. Over 6% had a concurrent urinary tract infection(UTI), and 4% experienced traumatic head bleed or bony fracture. Cardiac events, including arrhythmia, myocardial infarction, cardiac procedures, and structural heart disease, represented the most frequent category of total(11%) and delayed events(4%). Other events such as death and stroke were rare(<0.5% each).

Conclusions. Serious events are common in older patients with syncope. In addition to routine ECG testing, there should be low test threshold to identify anemia, UTIs, and traumatic injuries. Prediction

models should focus on delayed cardiac events, as delayed recognition of other conditions is rare and unlikely to yield stable instruments.

D36

Predictors of 30-Day Delayed Cardiac Events in Geriatric Syncope.

B. Sun,[1,2] D. Stephen,[3] A. Moore,[2] M. William,[2] C. Mangione.[2] *1. WLA Veterans Affairs Medical Center, Los Angeles, CA; 2. UCLA, Los Angeles, CA; 3. Kaiser Permanente- Southern California, Pasadena, CA.*

Supported By: Dr. Sun is supported by a UCLA National Institute of Aging K12 award (K12AG001004) and an American Geriatrics Society Dennis Jahnigen Career Development Award (20051687).

Objectives. Asymptomatic older adults presenting with syncope are frequently hospitalized to exclude occult cardiac conditions. Prediction instruments may identify older patients most likely to benefit from admission. Prior studies have been limited by small sample sizes. We identify predictors of delayed cardiac events in a large, geriatric cohort.

Methods. This is a retrospective cohort study of ED visits for syncope and near-syncope by patients aged 60 and greater. Eligible visits occurred during 2002-2005 at 3 EDs in a regional managed care system. Research assistants reviewed charts for study eligibility, performed data abstraction, and screened for predefined 30-day, serious events. Serious events included death, cardiac events, pulmonary embolism, stroke, and anemia/ bleed. Cardiac conditions included arrhythmia, major cardiac procedures, myocardial infarction, and structural heart disease. 'Delayed' events were identified after the initial ED evaluation. Reliability for all elements of screening and chart review was high (K=0.6-0.9). Predictors were identified using multivariate logistic regression.

Results. Of 3,727 potentially eligible ED visits, 2,871(77%) met all eligibility criteria. The study cohort consisted of 2,584(90%) who did not have a serious condition identified after the ED evaluation. The mean age was 77. There were 102(4%) patients who experienced a 30-day delayed cardiac event. Predictors included a history of arrhythmia (OR 2.6, 95CI:1.7,4.2), an abnormal electrocardiogram(OR 2.2, 95CI:1.4,3.5), systolic blood pressure(OR 1.01 per mmHg, 95CI: 1.0, 1.02), and a presentation of near-syncope compared to syncope (OR 0.5, 95CI:0.3,0.9). Event rates in the top and bottom quartile risk groups were 12% and 1%.

Conclusions. Delayed cardiac events are infrequent in older adults presenting with syncope. Our model defines a risk gradient and may potentially improve disposition decisions, although prospective validation studies are required.

D37

Potentially inappropriate medication administration during emergency department visits by geriatric patients: 2000-2006.

T. A. Potti,[1] B. T. West,[2] W. J. Meurer.[1] *1. Department of Emergency Medicine, University of Michigan, Ann Arbor, MI; 2. Center for Statistical Consultation And Research, University of Michigan, Ann Arbor, MI.*

Supported By: Medical Student Training Program in Aging Research : National Institute of Aging; University of Michigan Department of Emergency Medicine

Introduction: Guidelines regarding potentially inappropriate medications (PIMs) in older adults exist; prior work has demonstrated an unacceptably high prevalence of PIM administration older patients in the ED. Objectives: To estimate the proportion of older U.S. patients who received a PIM between 2000 and 2006. To determine which demographic and clinical factors could predict PIM administration. Methods: Data from the National Hospital Ambulatory Medical Care Survey were utilized. This survey collects data from a representative sample of U.S outpatient and emergency department visits. Our analysis is a cross-sectional study. Inclusion criteria were age 65 or greater, and final disposition to home. Weighted frequencies of patient level characteristics and PIM administration were calculated. Univariate associations between these descriptive characteristics and the outcome of any PIM administration were calculated using chi-square or logistic regression. Results from the univariate analyses were used to construct a multivariable logistic regression model and estimate odds ratios (OR). 95% confidence intervals are reported for all statistics. Results: The population included 116 million visits based on weighted estimates. This population was 58.9% (58.2-59.6%) female, 69.1% (66.7-71.4%) Caucasian, and had a mean age of 77.3 (77.26-77.51). Approximately 80% of the visits were seen without resident involvement. Overall, at least one PIM was administered or prescribed in 16.8% (16.1-17.4%) of visits. PIM administration was significantly less likely in the more recent years 2005 and 2006 when compared to the earlier years: 16% versus 17%; OR for 2000 versus 2006 1.14(1.014-1.28). At least one PIM was administered in about 2.7 million visits per year in the target population. The strongest predictors of PIM administration in multivariable analysis were total number of visit medications (1 or less versus 2 or more) OR 7 (6.49-7.55); regional location (rest of the U.S. versus the Northeast) OR 2.04(1.61-2.58); female gender OR 1.49(1.36-1.64); and lack of resident involvement OR 1.19(1.01-1.42). Conclusions: A high proportion of older ED patients receive PIMs. Factors predictive of PIM administration may aid in developing interventions to reduce use and improve outcomes.

D38

Trends in Hospitalization for Fall-related Injuries among older adults, 1988-2005.

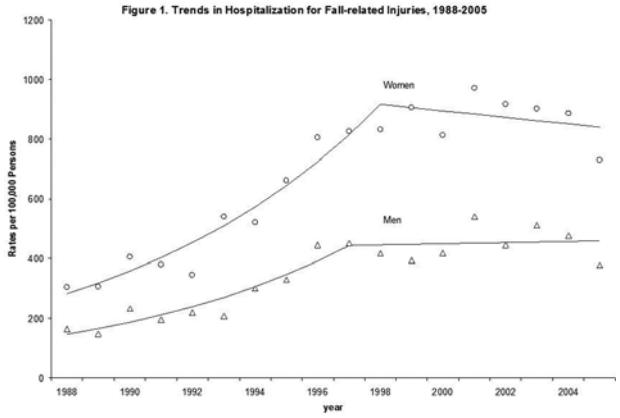
C. H. Orces. *Medicine, Laredo Medical Center, Laredo, TX.*

Objectives: The purpose of this study was to examine trends in hospitalizations for fall-related injuries among persons aged 65 years or older from 1988 through 2005 in the US.

Methods: The National Hospital Discharge Survey was used to estimate injury hospitalizations. Fall-related injury hospitalizations were based on the recommendations for using hospital discharge data for injury surveillance by the State and Territorial Injury Prevention Directors Association. Population data were used to calculate sex-, and age-specific rates per 100,000 persons. These data were directly adjusted to the 2000 US population. Trends were analyzed using joinpoint regression models.

Results: A total estimated of 3,320,000 hospitalizations for a fall-related injury occurred in US during the study period. The number of hospitalizations increased significantly from 69,400 in 1988 to 224,600 in 2005. Furthermore, hospitalization rates increased across all age groups, except in men aged 85 years or older. Women aged 85 years or older showed a steady increase in rates until 1999. Thereafter, the rates considerably declined 8% per year during the period 1999-2005. After age adjusment, rates in women increased 12.5% per year during 1988-1998. From 1988 onward, there was a non-significant decline in rates. In men, age-adjusted rates also increased 13.2% per year during 1988-1997. Subsequently, fall-related hospitalizations in men remained stable (Figure 1).

Conclusions: Hospitalizations for fall-related injury increased considerably among older adults in the US during the study period. Additional measures are needed to implement fall-prevention programs targeting high-risk groups.



D39

Ankle Arm Index and Walking Endurance in Community-Dwelling Older Adults.

E. Spangler,[1] N. Watson,[1] L. Venkitachalam,[1] K. Sutton-Tyrrell,[1] A. Newman,[1] J. Brach,[1] R. H. Mackey,[1] R. Boudreau,[1] E. Simonsick,[2] S. Najjar,[2] B. G. Windham,[2] D. Bauer,[3] N. Rodondi,[4] K. Johnson.[5] *1. for the Health ABC study, Univ. of Pittsburgh, Pittsburgh, PA; 2. National Institute on Aging, NIH, Baltimore, MD; 3. Univ. of California, San Francisco, San Francisco, CA; 4. Univ. of Lausanne, Lausanne, Switzerland; 5. Univ. of Tennessee, Memphis, TN.*

Supported By: This research was supported in part by the Intramural Research Program of the NIH, National Institute on Aging (contracts: N01-AG-6-2101, N01-AG-6-2103, N01-AG-6-2106) and training grant #1T32-AG-2-1885

BACKGROUND: Low Ankle-Arm Index (AAI), reflecting atherosclerosis, predicts reduced walking endurance in older women. Both noncompressible arteries (NCA), indicating arterial stiffness, and low AAI predict incident cardiovascular events in older adults. However, the association of NCA with physical endurance has not been previously explored; we hypothesize older adults with low AAI or NCA have poorer walking endurance than older adults with normal AAI.

METHODS: Using 1997-98 baseline data from the Health ABC Study, we evaluated the association of AAI in categories of low (≤0.90), normal (0.91-1.30), high (>1.30), and NCA (pulse not obliterated with pressures ≥250 mmHg) with time taken to complete a 400 meter walk; inability to complete the walk was also modeled. Health ABC eligibility criteria included: age 70-79, no self-reported difficulty walking ¼ mile, climbing 10 steps or doing activities of daily living. We excluded participants with a history of lower extremity revascularization or missing AAI.

RESULTS: Among 2886 older adults (mean age 73.6±2.9 years, 51.7% women, 40.6% black), AAI was low in 383 (13.3%), normal in 2299 (79.6%), high in 141 (4.9%), and NCA in 63 (2.2%). In logistic regression adjusting for age, race, study site, systolic pressure, BMI and diabetes, odds ratios of inability to complete a 400 meter walk were higher in women and men with low AAI compared to normal AAI; odds ratios were also higher in women with NCA but not in men (table). In 2213 walk completers, AAI was low in 243 (11.0%), normal in 1816 (82.1%), high in 114 (5.1%), and NCA in 40 (1.8%). Multivariable linear regression with gender and above covariates showed both low AAI and NCA were associated with significantly longer walk times compared to normal AAI (table).

CONCLUSION: In community-dwelling older adults, walking endurance limitation is related to atherosclerosis (low AAI) in both genders and arterial stiffness (noncompressible vessels) in women.

Relative to normal AAI group:	OR [95% CI] of inability to complete 400 meter walk in women	p	OR [95% CI] of inability to complete 400 meter walk in men	p	β (SE) Coefficient of time needed to complete 400 meter walk	p
Low	1.84 [1.32-2.57]	.0003	1.70 [1.17-2.46]	.005	20.03 (3.71)	<.0001
High	1.73 [0.85-3.50]	.13	0.82 [0.45-1.49]	.51	-7.42 (5.24)	.16
Non-compressible Arteries (NCA)	5.27 [2.17-12.78]	.0002	0.82 [0.34-2.02]	.67	20.87 (8.69)	.02

D40

Diabetes and functional limitation in older Taiwanese adults.

Y. Lee,[1] C. Shih,[1] F. Lu.[1,2] *1. Department of Geriatrics and Gerontology, National Taiwan University Hospital, Taipei, Taiwan; 2. Institute of Health Policy and Management, National Taiwan University, Taipei, Taiwan.*

OBJECTIVE: Little is known about the impact of diabetes on physical disability among older Taiwanese adults. Aims of this study were to describe the association between diabetes and physical disability in older adults, and to examine risk factors associated with disability among older adults with diabetes.

METHODS: We analyzed data from a cross-sectional, nationally representative sample of 2,021 community-dwelling adults age 65 or older who participated in the Taiwan Health Interview Survey in 2001. Diabetes and comorbid conditions (heart disease, hypertension, stroke, hyperlipidemia, pain, depression, and visual impairment) were assessed by questionnaire. Physical disability was assessed by self-reported difficulty in activities of daily living (ADLs), household tasks, walking one kilometer, and climbing one flight of stairs.

RESULTS: Of the study population, 48.6% were female. Mean age of the subjects was 73.4 years. Prevalence of diabetes among subjects was 16.8%. Basic demographics were not different between diabetic and non-diabetic older adults. Prevalence of physical disability was higher in diabetics than non-diabetics (ADLs difficulty, 26% vs. 13%; housework difficulty, 35% vs. 19%; mobility difficulty, 66% vs. 48%). Diabetes was associated with a 2.5- fold increase in risk of physical disability. After adjustment for basic demographics and comorbidities, diabetes was associated with a 74-86% increased risk of physical disability for specific tasks. Among older adults with diabetes, multivariate analysis revealed that female gender, lower educational level, depression, chronic pain, visual impairment, and regular insulin use were independently associated with physical disability.

CONCLUSIONS: Diabetes is associated with excessive burden of physical disability among older adults in Taiwan, which may link to poor quality of life and adverse outcomes. Several risk factors were potentially modifiable and clinicians should increase their awareness. Targeted intervention to decrease risk of disability in older diabetic adults are warranted.

D41

Incidence of Antibiotic-Requiring Nosocomial Infections in the Geriatric Psychiatry vs. Long-Term-Care Geriatric Wards of a Teaching Psychiatric Hospital.

J. Westphal,[1,2] F. Jehl,[2] M. Hittinger.[1] *1. Dept of General & Geriatric Medicine, Etabt Public de Sante Alsace Nord, Strasbourg-Brumath, France; 2. Bacteriology Laboratory, University Hospital, Strasbourg, France.*

Supported By: No financial disclosure

BACKGROUND: Data on nosocomial infections (NI) in mental healthcare setting are still limited. We report the results of a 3-year continuous surveillance of antibiotic-requiring NI in the geriatric inpatient population of a 600-bed teaching psychiatric hospital comprising geriatric psychiatry (>65y) wards (70 beds) and long-term-care (LTC) geriatric wards (128 beds).

METHODS: Surveillance was performed through a computer-assisted infection declaration program that linked the infection declaration process to the computerized physician antibiotic order entry. All declarations were reviewed by the Infection Control Unit. Definition criteria for infections were those from the French Health Ministry.

RESULTS: Mean age of infected patients was 78 y. in geriatric psychiatry vs. 83.8 y. in LTC geriatric patients ($p<0.001$). The total number of antibiotic-requiring NI recorded was 938, of which 419 were in geriatric psychiatry patients and 519 in LTC geriatric patients: the corresponding incidence rates were, respectively, 5.7/1,000 and 3.8/1,000 patient-days (95%CI on the difference 1.3/1,000-2.5/1,000; $p<0.0001$). The leading infectious sites were symptomatic bacteriuria (40%) and pneumonia (19%) in geriatric psychiatry patients vs. bronchitis (34%) and symptomatic bacteriuria (27.5%) in LTC geriatric patients ($p<0.001$). The incidence rate of NI associated with extrinsic risk factors for acquiring infections (urinary catheter, pressure sore, iatrogenic illness) was 6 times higher in the geriatric psychiatry vs. LTC geriatric patients: respectively, 1.2/1,000 vs. 0.2/1,000 patient-days ($p<0.0001$). Comparatively the incidence rate of NI associated with only intrinsic risk factors for acquiring infections (chronic/debilitating diseases) was less significantly different between the two patient categories: 3.2/1,000 vs. 2.7/1,000 patient-days in geriatric psychiatry vs. LTC geriatric patients, respectively ($p=0.044$).

CONCLUSION: In this survey, incidence of antibiotic-requiring NI was significantly higher in geriatric psychiatry vs. LTC geriatric wards. This finding might be due in part to a higher frequency of extrinsic risk factors for acquiring infections in the geriatric psychiatry vs. LTC geriatric patients.

D42

Appropriateness of Drug Prescribing in the Geriatric Psychiatry Inpatient Population of a Teaching Psychiatric Hospital.

J. Westphal,[1] C. Nonnenmacher.[2] *1. Dept of General & Geriatric Medicine, Etabt Public de Sante Alsace Nord, Strasbourg-Brumath, France; 2. Dept of Pharmacy, Etabt Public de Sante Alsace Nord, Strasbourg-Brumath, France.*

Supported By: No financial disclosure

INTRODUCTION: There is limited data on the appropriateness of drug prescribing in geriatric psychiatry. The aim of the study was to evaluate the prevalence of potentially inappropriate drug orders (PIO) in the geriatric inpatient population of a 470-bed teaching psychiatric hospital.

METHODS: The study consisted of a 1-day cross-sectional review of all the ongoing drug regimens in the geriatric psychiatry inpatient population (≥65 y) of the hospital, repeated on 3 separate days 1 year apart. Data from the 3 study days were pooled for analysis. The screening tool for reviewing drug regimens was the explicit criteria list by Beers et al. (2003). According to these criteria, drugs were classified as inappropriate in 3 categories: drugs that generally should be avoided in older adults because of a high risk of adverse effects (I), drug orders exceeding a maximum recommended dose (II), drugs to be avoided in combination with some comorbidities (III).

RESULTS: The 227 geriatric inpatients present in the acute psychiatry wards on the study days were included. Median age was 72 (range 65-93). Taking all Beers criteria together, 95 PIO were recorded, giving a global prevalence rate of 41.8% (96%CI 35.4%-48.2%), with 20.7%, 12.8%, and 8.3% in categories I, II, and III, respectively. In total 34.8% (n=79) of the study patients received at least one PIO, and 8.8% (n=20) more than one PIO. The most frequently prescribed PIO in category I were propoxyphene-containing products, hydroxyzine, diazepam, and amiodarone. While considering dose (category II), the drugs most frequently prescribed in a supratherapeutic daily dose were lorazepam and oxazepam: respectively, these drugs were used in 8.5% and 11% of the study patients and prescribed in a supratherapeutic daily dose in 42% and 28% of users. Orders for anticholinergic drugs in patients with cognitive impairment or prostatic disease were most frequently found, accounting for 73% of PIO in category III. CONCLUSION: Utilization of the Beers criteria in this study showed a relatively high prevalence of potentially inappropriate medications in geriatric psychiatry, a picture similar to that previously reported in other geriatric healthcare settings using the same evaluation tool.

D43

HMG-CoA Reductase Inhibitor Medication Use and Persistent Lower Extremity Limitation in Community Elders. The Health, Aging and Body Composition Study.

J. T. Hanlon,[1,2] R. M. Boudreau,[7] S. A. Studenski,[1,2] A. B. Newman,[1,7] E. M. Simonsick,[3] R. I. Shorr,[4] D. C. Bauer,[5] S. L. Gray.[6] *1. Medicine (Geriatrics), UPITT, Pittsburgh, PA; 2. CHERP/GRECC, Pittsburgh VAHS, Pittsburgh, PA; 3. Intramural Research Program, NIA, Baltimore, MD; 4. GRECC, North Florida/South Georgia Veterans Health System, Gainesville, FL; 5. Gen. IM, UCSF, San Francisco, CA; 6. School of Pharmacy, University of Washington, Seattle, WA; 7. Epidemiology, UPITT, Pittsburgh, PA.*

Supported By: This study was primarily supported by National Institute of Aging grants (R01AG027017; P30AG024827, N01-AG-6-2101, N01-AG-6-2103, and N01-AG-6-2106). This research was supported in part by the Intramural Research program of the NIH, National Institute on Aging.

Background: HMG-CoA reductase inhibitor medications (statins) have anti-inflammatory effects and may improve walking speed, and physical performance.

Objective: To evaluate whether statin medication use in older adults was associated with a lower risk of incident persistent lower extremity limitation (PLL).

Methods: This longitudinal cohort study included 3055 baseline participants from the Health Aging and Body Composition (Health ABC) Study (41% black, 51% female, mean age 74.0 ± 2.9 years). Statin medication use, duration, and dose were determined at baseline (year 1) and years 2, 3, and 5. The primary outcome was self-reported PLL as defined by two consecutive self-reports 6 months apart of having any difficulty walking 1/4 mile or climbing 10 steps without resting over a six year period. Multivariable Cox Proportional Hazard analyses were conducted adjusting for baseline demographics, health-related behaviors, health status, and time-varying potential indications for statin medication use (i.e., myocardial infarction, diabetes, and stroke)

Results: Statin medication use increased from 12.9% at baseline to 25.2% at year 5. At baseline, 8.9% of current users were taking > 1 standardized daily doses (high dose) and 30.9% had been taking these drugs for two or more years (long duration). By year 6, 49% of participants reported PLL. Statin medication use compared to non use was not significantly associated with incident PLL (Adj. HR 1.03; 95% CI= 0.89- 1.20). Moreover, neither higher doses (Adj. HR 0.99; 95% CI= 0.73, 1.36) nor longer duration (Adj. HR 0.96; 95% CI= 0.79- 1.15) of statin use were significantly associated with incident PLL compared with non-use.

Conclusions: Statin use was not associated with either a higher or lower rate of incident persistent lower extremity limitation.

D44

Practice Patterns for Vitamin D Deficiency/Insufficiency in Long-term Care: Are We Doing Enough?

K. Braddy, S. N. Imam, K. R. Palla, T. A. Lee. *Edward Hines, Jr. VA Hospital, Hines, IL.*

Purpose: Vitamin D deficiency/insufficiency is a widespread problem in the elderly, particularly in institutionalized and geriatric

populations. Consequences of low serum vitamin D may include progressive bone loss, fracture and other health implications, though studies show vitamin D supplementation restores bone mineral density and reduces falls and fractures among older individuals. This study aimed to evaluate the prevalence, awareness, treatment and follow-up of vitamin D deficiency/insufficiency in a single Veterans Administration long-term care facility (LTCF).

Methods: This is a retrospective observational cohort study of LTCF residents between January 2001 and December 2006. We reviewed medical records of patients with documented vitamin D levels during the specified time period to assess the following: serum 25-hydroxyvitamin D (25[OH]D) level, vitamin D therapy regimen, length of time to repeat vitamin D level, post-treatment 25[OH]D level, and documented adverse events to vitamin D therapy. We estimated the rates of vitamin D deficiency and insufficiency among screened residents and assessed the appropriateness of vitamin D regimens prescribed.

Results: Of 2218 patients admitted to the LTCF during the study period, 229 (10%) had a vitamin D level measured. Among these 229 patients, 49% were vitamin D sufficient, 14% were insufficient, and 37% were deficient. Sixty-nine percent of patients with low vitamin D levels received some form of vitamin D therapy, while 43% of patients received treatment as well as follow-up evaluation of vitamin D status within three months. The percentage of patients that received a formulation of vitamin D appropriate for the severity of their deficiency/insufficiency along with concurrent calcium supplementation and follow-up evaluation was significantly lower (13%).

Conclusion: Vitamin D levels were measured infrequently in long-term care residents. Among those monitored, the rate of vitamin D deficiency/insufficiency is high. Furthermore, few long-term care patients with low vitamin D status received proper treatment and follow-up. These data support the need to educate providers regarding the high prevalence and associated co-morbidities of vitamin D deficiency/insufficiency among LTCF patients and to ensure that patients with low vitamin D levels are identified and treated appropriately.

D45

Rapid Decline in GFR is associated to Functional Decline in Indigent Patients.

K. M. Daniel,[1] B. Vicioso,[2] P. Gleason-Wynn,[1] C. L. Cason,[1] R. Sesso.[3]
1. School of Nursing, University of Texas at Arlington, Arlington, TX; 2. Internal Medicine, University of Texas Southwestern Medical School, Dallas, TX; 3. Escola Paulista de Medicina, Sao Paulo, Brazil.

Supported By: The research team received institutional support for the support of this research.

Purpose: to compare the functional status of ambulatory elderly patients who experience a rapid decline in GFR to those who do not.

Description of methods: a retrospective chart review provided data on 240 patients cared for in a publicly funded geriatric clinic. All patients had been referred for dietary counseling. Data collected included age, ethnicity, creatinine, recreational activity participation and 3 IADLs: cooking, shopping and medication management. Data were collected at the time of dietary referral and 2 years later. Rapid decline in GFR was defined as greater than 20cc/2years using the MDRD formula.

Results: Over a two year period, 23/240 patients experienced a rapid decline in GFR. These patients were 52% African American and 48% Latino. Seventy-four percent of those with rapid decline were female. The mean amount of eGFR decline among those with rapid decline was 31cc (SD11)/2 year period. The mean age of patients with rapid decline was the same as the mean age of the sample: 73 (SD6). Mean eGFR of patients who experienced a rapid decline was 96 upon entry into the study. Mean eGFR of patients upon entry into the study who did not experience a rapid decline was 74. This difference was statistically significant (p=.001). Of the rapid decliners, 65% were dependent in cooking upon entry into the study compared with 31% who did not experience a rapid decline (p=.002). Thirty-two percent of the rapid decliners were dependent in medication management compared with only 14% of patients who did not experience a rapid decline (p=.024); 73% were dependent in shopping compared with 40% of patients who did not experience a rapid decline (p=.003). Ninety-six percent of patients who were rapid decliners reported no recreational physical activity, compared with 31% of patients without rapid decline who reported walking or attending a senior center (p = .008)

Conclusions: Compared to patients without rapid decline in GFR, patients with a rapid decline were more likely to be functionally impaired and less likely to report recreational physical activity. Dependent functional status may precede rapid decline in GFR and reflect underlying vascular burden. Elderly patients who are functionally impaired may have a greater risk of rapid decline in eGFR.

D46

Delta project: DElirium in hospiTAlized elderly.

M. Thibodeau, F. Gaba, F. Massoud, M. Vu. *Geriatrics, Centre Hospitalier de l'Université de Montréal, Montreal, QC, Canada.*

Introduction: Delirium is a common problem in acute care hospitals. In the medical population, its prevalence is estimated to be 15-25%, while its incidence is 5-10%. In the surgical population, the incidence is 10-15% in general surgery, 30% in cardiothoracic surgery and up to 50% in orthopedics. Diagnosis of delirium is associated with medical and administrative consequences (e.g. increased length of stay, medical expenses, mortality). However, delirium remains under-diagnosed and under-reported.

Purpose: The objectives of this study were: 1) to determine the incidence and prevalence of delirium in a medical and surgical population at the CHUM; 2) to find what keywords in the nursing and medical charts and risk factors were associated with delirium; 3) to evaluate the management and consequences of delirium; 4) to examine under-diagnosis and under-reporting of delirium.

Methods: Retrospective study of 368 charts of elderly patients (> 75yo) from medical and surgical departments of the CHUM. Diagnosis of delirium was made by reviewing the chart using a validated chart-based method previously described.

Results: Patients were on average 81,4 yo and most lived in the community. Delirium was found in 31 % and 28 % of medical and surgical patients and was present upon arrival in 4.5% and 2% respectively. A diagnosis of dementia was the main risk factor for delirium in the medical population. Length of stay (21 vs 13 days; 19 vs 10 days) and mortality (30% vs 9%; 20% vs 3%) were significantly increased in patients with delirium in medical and surgical populations. Fewer patients with delirium were discharged home. Restraints and as needed antipsychotics were used in more than 50% of patients and benzodiazepines in 26%. Delirium was missed in 40% and not reported in the chart summary in 74 % of patients. Key words such as "confusion", "incoherence" and "disorientation" were associated with a diagnosis of delirium.

Conclusions: The incidence of delirium in these populations was high. Delirium has a clear impact on length of stay and mortality. Although key symptoms are recognized by clinicians and other health care workers, delirium still remains under-diagnosed.

D47

Disability after stroke is greater in patients at high risk of Obstructive Sleep Apnea independent of stroke severity.

M. Mansukhani, M. Bellolio, B. Kolla, S. Enduri, V. K. Somers, L. G. Stead. *Mayo Clinic, Rochester, MN.*

Supported By: Mayo Clinic, Rochester, MN, USA.

OBJECTIVE:

Evaluate the risk and presence of sleep apnea in patients presenting with acute ischemic stroke, and its correlation with disability and death.

METHODS:

This was a prospective cohort study of 174 consecutive patients presenting with acute ischemic stroke during a 9-month period. Patients were administered the Berlin Sleep Questionnaire which included questions about snoring pattern, work abilities during wake time, presence of hypertension and increased body mass index. Positive response in 2 or more categories identified the patient as high risk for obstructive sleep apnea (OSA). T-test and Chi-square test were used for normally distributed data and non-parametric tests were used for non-normally distributed variables. Multivariate analyses were performed adjusting by age and National Institute of Health Stroke Scale (NIHSS).

RESULTS:

A total of 174 patients were included, with a mean age+/-SD of 71.6+/-14.2 years, 54.5% were female. Three quarters (74.6%) of the cohort had a modified Rankin score ≥3 at the time of dismissal from hospital, meaning that they needed some form of assistance with daily activities. Overall 105 patients (61%) were identified as having a high risk of sleep apnea and of these 7 had a previous diagnosis of OSA.

After adjusting for age and NIHSS, high risk for OSA and previous diagnosis of OSA were identified as independent predictors of worse outcome i.e. worse modified Rankin score (each $p<0.0001$) which increased by 0.2 points (R-square adjusted 38%) in patients at high risk of OSA and by 1 point (R-square adjusted 40%) in those with OSA.

A total of 11 patients died. Those with previous diagnosis of OSA had a higher risk of death within the first month following the stroke (Relative Risk: 5.1, 95%CI 1.3 to 19.1) when compared to those without OSA.

CONCLUSIONS:

Patients with high risk or presence of obstructive sleep had significantly worse functional outcome after an ischemic stroke. The presence of sleep apnea independently increases risk of death after acute ischemic stroke.

D48

Angiotensin-converting Enzyme Inhibitor (ACEI) Medication Use and Persistent Lower Extremity Limitation (PLL) in Community Elderly: The Health, Aging and Body Composition Study.

S. Gray,[1] R. Boudreau,[2] A. Newman,[2,3] S. Studenski,[3,4] R. Shorr,[5] D. Bauer,[6] E. Simonsick,[7] J. Hanlon.[3,4] *1. School of Pharmacy, University of Washington, Seattle, WA; 2. Department of Epidemiology, School of Public Health, University of Pittsburg, Pittsburg, PA; 3. Department of Medicine (Geriatrics), School of Medicine, University Pittsburgh, Pittsburg, PA; 4. Center for Health Equity Research and Geriatric Research Education and Clinical Center, Veterans Affairs Pittsburgh Healthcare System, Pittsburg, PA; 5. North Florida/South Georgia Veterans Health System Geriatric Research Education and Clinical Center, Gainesville, FL; 6. Division of General Internal Medicine, University of California at San Francisco, San Francisco, CA; 7. Intramural Research Program, National Institute on Aging, Baltimore, MD.*

Supported By: This research was supported by NIA contracts N01-AG-6-2101, N01-AG-6-2103,and N01-AG-6-2106 as well as in

part by the Intramural Research Program of the NIH, National Institute on Aging.

Background: ACEI medications may have direct effects on skeletal muscle and slow lower extremity muscle mass loss in older adults.

Objective: To evaluate whether ACEI medication use was associated with a lower risk of incident PLL.

Methods: This longitudinal cohort study included 3055 baseline participants (41% black, 51% female, mean age 74.0 ± 2.9 years). ACEI medication use, duration, and dose were determined at baseline (year 1) and years 2, 3, and 5 and modeled as time-varying. The primary outcome was self-reported PLL as defined by two consecutive self-reports 6 months apart of having any difficulty walking 1/4 mile or climbing 10 steps without resting over a six year period. Multivariable Cox Proportional Hazard analyses were conducted adjusting for demographics, health-related behaviors, health status, and potential indications for ACEI medication use. Sensitivity analyses were conducted restricting the sample to those with treated hypertension.

Results: ACEI medication use increased from 15.2% at baseline to 25.6% at year 5. At baseline, 16% of current users were taking > 2 standardized daily doses (high dose) and 58.3% had been taking these drugs for two or more years (long duration). By year 6, 49% of participants reported PLL. ACEI medication use compared to non use was not significantly associated with incident PLL (Adj. HR 0.94; 95% CI= 0.81- 1.08). Furthermore, neither higher doses nor longer duration of ACEI use was associated with incident PLL. Similar results were observed when restricting the sample to participants with treated hypertension.

Conclusion: ACEI use was not found to protect against the development of incident PLL.

D49

CT Evaluation of Aortic Dimension, Calcification, and Pericardial Thickness in a Geriatric Population with History of Smoking.

C. W. Mi,[1] V. Balasubramanian,[2] G. Kim,[2] J. G. Goldin.[2] *1. Medicine, Case Western Reserve University School of Medicine, Cleveland, OH; 2. Radiological Sciences, University of California, Los Angeles, Los Angeles, CA.*

Supported By: MSTAR Program

Thoracic Imaging Research Group

Objective: To use a well characterized, high risk cohort of geriatric subjects with history of heavy smoking to describe the physiologic ranges of aortic dimensions, aortic valve calcification, and pericardial thickening in elderly smokers.

Methods: Sixty-four participants of the National Lung Screening Trial (NLST) cohort at the University of California, Los Angeles were selected for this study (mean age 69.0 ± 2.8 years, 57.8% male). NLST participants had minimum 30 pack-year smoking history and received one chest CT per year for the three years they were followed. They were stratified into three age ranges (65-67, 68-70, 71-74 years) and 64 were randomly selected to represent the proportions in the 65 years and older NLST cohort (mean age 68.6 ± 2.6 years, 61.6% male). Aortic dimensions were measured at the ascending aorta (AAD), descending aorta (DAD), and aortic arch (AARD). Additionally, the ratio of main pulmonary artery diameter (MPAD) to ascending aortic diameter (AAD1), aortic valve calcification (AVC), and pericardial thickness (PT) were evaluated. Means, standard deviations, and significant differences were calculated based on gender and age group at baseline and year 2. Correlation analysis was done between pack years and all cardiac measurements.

Results: We found no significant differences in cardiac measurements among age groups though there was a significant gender difference. The mean AAD at baseline was 35.72 ± 3.86 and 38.86 ±3.50 mm in females and males, respectively ($P = 0.0012$). Likewise, DAD, MPAD, AAD1, and AARD showed significant gender differences. Pack years was not a predictor of outcome except for MPAD/AAD1 ($P = 0.032$). None of the cardiac measurements were found to have significant changes from baseline to year 2 though Pearson's correlation showed a significant correlation between the two measurements.

Conclusions: While it is common clinical practice to assume an increase in vessel size and calcification with increase in age, our study indicates that this assumption is unreliable, even when evaluating

high risk elderly with heavy smoking history. Comparison of this cohort with the general adult and geriatric populations show no observed differences in aortic dimensions and calcification.

D50

Evaluation of a Required Palliative Care Rotation for Internal Medicine Residents.

A. Olden, T. Quill, S. Ladwig. *Palliative Care, University of Rochester, Rochester, NY.*

Introduction: Geriatric Fellowship and Internal Medicine (IM) programs are now required by the ACGME to integrate Palliative Care (PC) into teaching conferences, and PC content is already being tested on both board examinations. Previous research has focused on the integration of PC into existing rotations and seminars, but none has studied a required inpatient PC rotation.

Objective: We evaluate the impact of a required PC rotation for IM residents in four domains: pain management, non-pain symptom management, communication/ethics, and terminal care. These domains correspond to learning objectives that are modeled after the ACGME core competencies and provided to residents at the beginning of the rotation.

Methods: All second-year IM residents (R2's) completed a required two-week rotation in inpatient palliative care, and were asked to complete a previously validated PC examination immediately before and within two weeks after the rotation. During the same year, all interns (R1's) were also asked to complete this examination, as were third-year residents (R3's) who had completed the rotation one year earlier, to provide a basis for comparison. Participation was voluntary for all.

Results: All interns (100%), and 71% and 87% of R2's and R3's respectively completed the examination. Mean examination scores improved by 12.4% between internship and start of the PC rotation, and by an additional 9.7% by the end of the rotation ($p<0.003$). Mean exam scores were consistent from the R2 to the R3 year. At all levels, residents scored well above the national average on the examination. Knowledge improved in all domains measured.

Conclusions: Palliative care knowledge, as tested by objective examination, improves during IM residency at our institution and specifically over the course of a required, two-week PC rotation. Further study is warranted to determine whether this improvement relates to the rotation itself, or to institutional culture and interest in the bio-psychosocial model. The next step in this research will be to determine whether implementing this required rotation in Geriatric Fellowship programs will lead to a similar improvement in scores. This type of intervention may prove to be valuable in educating Geriatric Fellows in the principles of Palliative Care.

D51

Perceptions of Learning: Town versus Gown.

A. Pomidor, W. Wertman, K. Brummel-Smith, S. Baker, C. Smisson, S. Milton, F. Curva. *Geriatrics, Florida St Univ College of Medicine, Tallahassee, FL.*

Supported By: Florida St. Univ. College of Medicine

HRSA GEC grant D31HP08843

PURPOSE: Compare and contrast learning needs between town (community-based) practitioners and gown (university faculty educators) working with geriatrics.

BACKGROUND: Community practitioners (CP) and university faculty (UE) serving geriatric populations acquire best practices training and education from different sources and by different methods of learning. To plan effective educational interventions, 2 needs assessment (NA) surveys were conducted examining the current level of geriatric training, the level of interest in further training and training preferences among CP and UE health care providers.

METHODS: The first NA was mailed to UE associated with one of the three Live Oak Geriatric Education Center (LOGEC)university faculties. UE subjects received a paper survey questionnaire between Nov. 2004 and Feb. 2005. The second NA was mailed to a randomly selected population of CP in the LOGEC catchment area between Mar. 2007 and Apr. 2007.

RESULTS: The UE survey indicated that only 29% of responders had some training in geriatrics but 43% claimed they spent half or more of their work time with geriatric clients or patients. Overall, 76% answered that they would be interested in receiving further training which varied by discipline. Favored topics include Depression, Medicare/Medicaid, Delirium/Dementia, and Healthy Aging and differed across disciplines. In contrast, the second NA survey found that 45% of CP respondents had some training in geriatrics and 39% of respondents spent half or more of their work time with geriatric clients or patients. Overall, 68% of CP respondents answered that they would be interested in receiving further training. Favored topics differed as Healthy Aging, Exercise and Depression but did not vary across disciplines as in the first NA. CONCLUSIONS: While it is encouraging that most university faculty are interested in receiving more training, it is of concern that so few have received geriatric training when these persons are responsible for training our future workforce. It is equally encouraging that that nearly 70 percent of community health providers in our region are interested in receiving further geriatrics training, even if less than half of these individuals have ever had geriatrics training in their respective professions. Different disciplines appear to have distinct educational preferences for both the topics and methods of education. These needs must be assessed and met.

D52

Medical Education Curriculum for Geriatric Medicine Fellows: Improved Knowledge and Comfort.

A. G. Botts. *Beth Israel Deaconess medical Center, Boston, MA.*

Supported By: Rabkin Medical Education Fellowship

Purpose: At our institution, geriatric medicine fellows have traditionally provided geriatric education to a variety of healthcare providers. However, the fellows have received little formal teaching in the basic tenants of medical education. To address the healthcare needs of the rapidly growing geriatric population, the Institute of Medicine report Retooling for an Aging America: Building the Health Care Workforce challenged geriatricians to increase basic competence standards for all healthcare providers. To begin addressing this imperative, we chose to train our fellows in the fundamentals of medical education. We believe this will prepare the fellows to provide meaningful geriatric education to diverse healthcare providers.

Methods: A medical education curriculum was developed and presented to six first-year geriatric medicine fellows over five sessions. Topics covered included adult education, micro skills of teaching, feedback, assessment, and leadership/affecting change. Fellows participated in educational activities including preparatory reading, didactics, case discussions, and small group activities. At the beginning and end of the curriculum, fellows completed pre and post assessments of self rated knowledge, self rated comfort, and willingness to learn utilizing a Likert scale (0 = none and 5 = high).

Results: All fellows completed the curriculum. There was significant improvement in their self rated knowledge and self rated comfort for all measures including adult learning theory, micro teaching, providing effective feedback, utilizing feedback in the teaching-learning cycle, understanding assessment instruments, and choosing appropriate assessment instruments. Scores on willingness to learn were high, 4.28, on a 0 to 5 scale.

Conclusions: First-year geriatric medicine fellows participating in a medical education curriculum had substantial improvement in their self rated knowledge and self rated comfort regarding a variety of medical education topics. As the elderly population skyrockets, it is

increasingly important to train skilled geriatric educators to teach basic geriatric principles all healthcare providers.

D53

A Quality Improvement Project.

F. Ralls, S. Qaseem, J. So, D. Hemphill, K. Bhatti, G. Parker.
Geriatrics and Sleep, UNM, Albuquerque, NM.

Hypothesis:

Resident care in the nursing home could be improved by having geriatric fellows literally experience a "night in the nursing home" and using their experiences to develop plans to implement improvements for resident care.

A Quality Improvement Study:

Three fellows each spend one night in the local nursing home with simulated disabilities such as poor eyesight, neurologic impairment from a stroke, poor hearing, and an inability to ambulate. During this predetermined night the fellows are treated exactly as inpatient residents including eating pureed food. Through this firsthand `experience it is hoped that the fellows would become more empathetic to the unmet needs of the nursing home residents. The fellows' experiences are subsequently presented to the geriatric faculty and also to key nursing home staff.

Method:

On a predetermined date each of the three fellows is admitted to a local nursing home following a set protocol. Each fellow has an impaired dominent side simulating a CVA, deafness by wearing earplugs, and poor eyesight by wearing glasses covered with lubricant gel. The fellows are admitted for regular care and are given placebo medications at a regular interval of two hours throughout the day and night. They take all meals in the dining room on a pureed diet and they are required to have assistance for mobility and toileting. Fellows participate in routine resident activities. All are in shared rooms with a full-time regular resident.

The fellows' collective experiences resulted in several areas targeted for improvement. These were presented to the geriatric faculty and the nursing home staff, along with plans for implementation.

Results: Fellows' experiences identified the following areas for improvement.

Resident's sleep hygiene can be improved by avoiding unnecessary disturbances at night. Obtaining vital signs and giving medications during waking hours will not diminish the level of care; rather this will improve the resident's sleep and overall add to the resident's quality of life.

Allow the resident to choose food items.

Respect personal and physical boundaries (their "home").

Conclusion: A firsthand experience obtained by spending a night in the nursing home with simulated impairments, improves physician's awareness of common problems that are frequently overlooked in the nursing home. By improving the physician's awareness, problems can be identified and orders modified so that the resident's quality of life is improved.

D54

Can We Buy A Geriatrician And If So, At What Cost?

A. Galasso,[1] R. Hussain,[2] W. Burton,[3] G. El-Kass,[1] O. Garankina,[1] G. P. Wolf-Klein.[4,1] *1. NSLIJ Health System, New Hyde Park, NY; 2. Krasnoff Institute, Great Neck, NY; 3. Albert Einstein College of Medicine, Bronx, NY; 4. The Lorber Center for Medical Education, New Hyde Park, NY.*

BACKGROUND: Despite the explosion of the geriatric population, estimated to be 70 million Americans by 2030, there is a striking shortage of trained geriatricians. For the 2006-2007 academic year, 54% of geriatric fellowship positions went unfilled in the US. This study aims to identify factors deterring medical students and residents from selecting Geriatric Medicine.

METHODS: A survey of students and residents from 7 New York medical programs was conducted in the fall of 2008. Descriptive statistics, as well as univariate analyses, were used to explore student and resident subspecialty choice.

RESULTS: Of 105 surveys received, 88 were adequate for analysis: 23.2% were completed by PGY1, 29.1% by PGY2, 23.3% by PGY3, and 24.4% by medical students, with average age 26-30 (54.7%), single (52.3%) and without children (83.7 %). Out of 10 subspecialties, the vast majority rated Cardiology as most popular (90.1%) and most competitive (95.3%), while 71.6% ranked Geriatrics as least popular, and 80.7% as least competitive. However, regardless of their subspecialty choice, 56.8% believed that formal geriatric fellowship training would likely benefit their career. Determining factors were family time (mean Likert=4.22), mentors (mean Likert=3.83) and salary (mean Likert=3.66). Though 42.1% rated their personal financial situation as concerning, a third (34.1%) indicated that adequate salary for geriatricians would influence their career decision. Over half (51.1%) believed that geriatricians' average salary was between $121k and $150k. Of interest, 67.5% of respondents indicated that an annual salary above $151k would entice them to consider a career in Geriatrics, while only 11.6% would never consider Geriatrics regardless of salary. Trainees also stated that increased Medicare reimbursement (48.8%), Federal Student Loan repayment programs for geriatricians (27.6%) and Federal limitations capping malpractice (26.3%) would encourage them to pursue Geriatrics.

CONCLUSION: Given the burden of debt carried by many medical students and the perceived lack of reimbursement to geriatricians, financial considerations weigh heavily in the subspecialty career choice. These data suggest that better reimbursement, as well as specific loan repayment for physicians, would increase recruitment into Geriatric Medicine.

D55

A web-based interactive curriculum to teach physicians rational prescribing principles for older adults.

H. H. Atkinson,[1] K. M. Sink,[1] D. P. Miller,[1] R. Anderson,[2] D. Bowton,[1] J. Lawlor,[3] C. D. Furberg.[3] *1. Internal Medicine-Geriatrics, Wake Forest University School of Medicine, Winston-Salem, NC; 2. Public Health Sciences, Penn State College of Medicine, Hershey, PA; 3. Public Health Sciences, Wake Forest University School of Medicine, Winston-Salem, NC.*

Supported By: This grant was funded by states' Attorney General Consumer and Prescriber Education Grant Program, funded by the multi-state settlement of consumer fraud claims in the marketing of the prescription drug Neurontin.

Purpose: To develop a concise, interactive web-based educational curriculum to teach medical students and physicians at all levels of training principles of rational prescribing for older adults.

Methods: With funding from the Attorney General Consumer and Prescriber Education Grant Program, we developed an on-line lesson on rational prescribing in older adults. This 30-minute module includes interactive mini-lectures on polypharmacy, adverse drug events, medications to avoid or use with caution in older adults, and pitfalls of off-label prescribing. Participants also play a novel drug interaction game which teaches common potentially avoidable drug-drug interactions. After internal pilot testing of the program at our institution, a link to the program was posted on the Portal of Online Geriatric Education in September 2008. Ongoing evaluation includes demographic information and feedback from physicians and trainees who enroll in the program. This lesson is part of SmartPrescribe—an online curriculum of five learning mod-

ules covering critical appraisal of drug treatment studies, FDA regulatory policies, pharmaceutical marketing, polypharmacy, and rational prescribing principles. All five lessons are freely available on the internet (www.smartprescribe.org) and can be taken for CME credit.

Results: Thus far, 8 physicians (2 family practice, 1 general internal medicine, and 5 specialty physicians) from 6 states have provided demographic data. Seven of these physicians are in private practices, and 5 provided feedback on the module. All of those providing feedback reported that their educational needs were met and that the material was presented in an interesting and effective manner. Three of the 5 agreed that they would immediately incorporate something new that they learned into practice.

Conclusions: This new, interactive online curriculum on rational prescribing in older adults was developed for all specialties and levels of physician learners. Initial feedback from practicing physicians from a variety of specialties has been favorable. Active dissemination and evaluation of the program is ongoing.

D56

Learning After the Death: A Geriatrics/Pathology Educational Collaborative.

J. Nkrumah,[2] E. Paal,[1] J. Lichy,[1] E. Cobbs,[1,2] K. Blackstone.[1,2] *1. Department of Veterans Affairs, Washington DC, DC; 2. George Washington Univ, Washington, DC.*

Background: Geriatrics/Palliative care consult teams increasingly care for dying patients in hospitals. While autopsy rates have declined, geriatricians may be in a unique position to promote awareness of the importance of autopsy among clinicians, families, and trainees. Geriatricians may be especially well prepared to develop successful learning environments for post-mortem case review.

Objective: To review the impact of an educational collaborative between Geriatrics/Palliative Care and Pathology divisions at one VA Medical Center

Methods: We reviewed all inpatient deaths, geriatrics/palliative care consultations, and autopsy requests between 1/08 – 6/08. We developed an educational collaboration between Geriatrics/Palliative Care and Pathology divisions including participation in gross specimen review during autopsy and an interactive, interdisciplinary Clinical/Pathologic Case Conference. We reviewed conference content, interdisciplinary attendance, and written anonymous evaluations.

Results: 153 inpatients died (70%=acute care, 30%=nursing home). Twenty families consented to autopsy (autopsy rate = 13%), including relatives of 14 patients followed by the Consult Team. During autopsy, Consult Team physicians, nurses, and trainees provided clinical context and reviewed initial findings with pathologists. Several nurses and trainees reported this to be their first experience at autopsy. Six Clinical/Pathologic Case Conferences were attended by staff and trainees from geriatrics/palliative care, pathology, hematology, oncology, surgery, gastroenterology, neurology, infectious diseases, psychiatry, and pulmonary divisions. Geriatric topics discussed included advance care planning, frailty, cachexia, falls, capacity evaluation, and dementia. Pathologic review revealed findings of frontotemporal dementia, lymphoma, lung cancer, AIDS, ARDS, and pneumonia, as well as many unexpected findings. Evaluations were consistently positive.

Conclusion: This educational collaborative successfully presented clinical and pathologic review of many concepts important in geriatric/palliative care education in an innovative and unique forum. Future collaboration may impact the rate of autopsy requests, awareness of geriatrics/palliative care consultative services, clinician competency in geriatrics/palliative care syndrome management and pathology, and clinician/trainee/family satisfaction.

D57

A New Geriatric Palliative Home Care Experience For Third Year Medical Students During the Family Medicine Clerkship.

L. Vargish,[1,2] S. G. Smith,[2] L. Mailliard,[2] D. Cox-Hayley.[2] *1. Family Medicine, The University of Chicago, Chicago, IL; 2. Medicine, The University of Chicago, Chicago, IL.*

Supported By: The Aetna Foundation

The Human Resources and Services Administration: Geriatrics Academic Career Award

Background: Medical students have little exposure to home care. Current demographic trends require a physician workforce well-trained to care for the growing aging population. Major organizations, including the American Geriatrics Society, endorse the need for more training in home care.

Purpose: To create, implement and assess a new curriculum for third year medical students in which students learn how to provide geriatrics palliative care in the home utilizing a multidisciplinary approach.

Description of Experience: We developed a required geriatrics palliative home care curriculum for third year medical students during the family medicine rotation which includes the following experiences: 1 Introductory lecture, including video of patient interview in hospital and at home; 2 Independent review of written and online materials highlighting core concepts in home care for the elderly; 3 Participation in interdisciplinary home visit, including pre-visit chart review and post-visit discussion; 4 Completion of reflective assignment and group discussion.

Evaluation: Pre/Post self-assessment of knowledge, confidence and attitudes toward home care and knowledge content assessment was conducted. Curricular components were also evaluated.

Results: There was significant improvement in students' appreciation, knowledge, and confidence regarding the provision of home care to patients. On average, all components of the curriculum received ratings greater than 4.0 on a 6 point Likert scale (1-not helpful, 6-very helpful). Making the home visits and participating in debriefing discussions received mean ratings of 5.95 and 5.76 respectively on a six point scale. Overall, students wanted more opportunities to conduct home visits. They greatly appreciated that seeing patients in their homes provided different perspectives from that of the hospital or clinic. Reflective assignments yielded diverse ranges of materials demonstrating strong emotional response to the experience.

Conclusions: Students learn much from their home care experience that may help them in caring for patients in other clinical settings. Reflective assignments may provide additional information about the impact of curricula that may not be captured in other more traditional measures, such as pre and post knowledge tests.

D58

Novel Program for Faculty Development of Geriatrics Educator Clinicians.

L. McNicoll, A. Nanda, A. Fulton Tuya, A. Curtin, C. Dexter, M. Hurley, R. Roach, N. McMackin, R. Besdine. *Medicine, Alpert Medical School of Brown University, Providence, RI.*

Supported By: Department of Health and Human Services Geriatric Academic Career Awards, Donald W. Reynolds Foundation

Introduction: Few clinical departments have structured faculty development programs for geriatric educator clinicians (GEC) to expand their teaching skills. The Sheridan Center for Teaching and Learning (SC) offers free pedagogical programs for Brown faculty and graduate students. The Division of Geriatrics partnered with the SC to develop a unique faculty development program.

Purpose: To develop a structured faculty development program for GEC that accommodated the unique needs of geriatrics faculty teaching various learners, while incorporating established pedagogical principles.

Methods: Four physician geriatricians and 4 geriatric nurse practitioners participated in the SC program. Workshops were created specifically for the group; a geriatrician senior faculty member and a SC educator served as workshop facilitators. Seminar and workshop topics included syllabus development, goal development, reflective teaching, teaching to different learning styles, effective communication, and gauging the learner's feedback and assessment. SC faculty observed the GEC during a 5-minute presentation and gave group feedback on presentation style, group engagement and organization. The SC also videotaped a formal classroom lecture for each participant, and gave detailed feedback regarding style, communication, audience engagement, and learner understanding. The lecture served as a final evaluation for each participant and was created using principles learned through the certificate program.

Results: Final evaluation of each participant's videotaped lecture revealed improvements in style and awareness of learner feedback. Each participant evaluated the program, and demonstrated an improvement in confidence, organization, and ability to create measurable goals and objectives for each teaching opportunity. In its second year, advanced geriatric fellows are completing the certificate program and the original working group continues with monthly meetings, to improve geriatrics clinical teaching programs, including the compulsory intern geriatrics rotation and in-patient geriatrics rotation.

Conclusion: The SC geriatrics working group provided a unique opportunity for enhancement of GEC teaching skills, while allowing for exchange of ideas and individual growth. Other geriatrics programs should consider using similar university resources to improve GEC teaching abilities.

D59

A Computer-Based Workbook for Geriatric Teaching for Medical Residents.

M. Eskildsen, T. Price, J. Flacker. *Medicine, Emory University School of Medicine, Atlanta, GA.*

Supported By: Source of Funding: Donald W. Reynolds Foundation

Purpose: Delivering effective education in the context of limited teaching resources is an ongoing challenge. The Emory Division of Geriatric Medicine implemented a computer-based learning (CBL) curriculum to address this need for internal medicine residents during their geriatric medicine rotation. This study measures the effectiveness of the CBL approach.

Methods: Starting in July 2007, internal medicine residents participating in their monthlong geriatric medicine rotations at Emory were assigned to complete a CBL workbook as a requirement for the completion of their experience. The workbook consists of nine self-directed learning modules. The nine modules cover the following topics: delirium, dementia, falls, incontinence, medication use, pain management, hazards of hospitalization, adult failure to thrive, and care transitions. Each module contains a clinical vignette followed by a set of tasks that include reading a general overview of the topic, as well as a test with at least three "boards-style" multiple-choice questions. The key information and resources to complete each module are located on the division's educational website, which is available to the public: (http://medicine.emory.edu/ger/edu_resources/module/index-Alpha.cfm).

At the beginning of the rotation, residents completed a multiple choice pre-test based on the module topics, and at the conclusion of the rotation they are given a post-test on the same topics. We tabulated test scores for all residents completing the tests, as well as means for the pre- and post-tests. We used an independent two-tailed t-test to calculate statistical significance.

Results: 63 Emory medicine residents completed the rotation as well as the pre- and post-tests between July 2007 and October 2008. The mean pre-test score was 19.16 (SD=2.45), and the mean post-test score was 27.03 (SD=4.06). A two-tailed independent t-test of the pre- and post-test results showed that the difference was statistically significant ($p<0.0001$).

Conclusion: Emory medicine residents who completed their geriatrics rotation as well as this computer-based learning curriculum significantly increased their fund of knowledge in core geriatrics topics. Because the CBL product and web resources are freely available, they represent an effective educational approach with little additional faculty time commitment.

D60

Perceived needs of practicing physicians regarding geriatric medicine education.

N. A. Kayani, J. Pokimica, S. Hazelett, K. Allen. *Summa Health System, Akron, OH.*

Background: Resident physicians often express disinterest towards relatively low-tech geriatrics rotations. However, once these residents enter private practice they are confronted with the reality that an ever expanding proportion of their patients are elderly, requiring knowledge of geriatric principles.

Purpose: To describe the perceived geriatric education needs and attitudes of practicing physicians.

Methods: Survey of all Internal Medicine and subspecialty physicians at a moderately sized teaching hospital in northeastern Ohio.

Results: Of 300 surveys distributed, 77 were completed (27%). When asked what areas these practicing physicians would like more training in, 38% responded pharmacology of aging, 20-30% responded hospice/palliative care, long term care, or physiology of aging, 10-20% responded outpatient geriatric medicine, rehabilitation, caregiver needs or interdisciplinary team work, <10% responded inpatient geriatric medicine or advance directives, and 22% indicated no need for further training in geriatrics. When asked which geriatric syndromes they "wish they had more experience treating", 30-40% responded incontinence, delirium, dementia, polypharmacy, failure to thrive, or chronic pain, 27% said falls, 10-20% said depression or sensory deficits, and 16% said they didn't need more experience treating any geriatric syndrome. The perceived educational needs were lower among those who completed residency training more recently, though the differences were not statistically significant. Overall, 86% said that caring for the elderly and learning/benefiting more from what geriatric medicine has to offer is important. 82% said they had referred a patient to a Geriatrician, with 60% of the referrals for functional decline/failure to thrive, 48% for caregiver issues, 27% for memory loss, 16% for falls, and 5% for depression. These reasons for referral generally match the stated education needs.

Conclusions: Despite resistance during residency training, this data suggests that, once in practice, physicians value the geriatrics education they received and over 70% expressed a need for further training, especially in the areas of pharmacology of aging, incontinence, delirium, dementia, failure to thrive, chronic pain, and falls. The results of this study can be used to inform the design and content of geriatrics residency training programs to better prepare non-geriatricians in the care of their elderly patients.

D61

Improved Knowledge of Geriatrics After Implementation of a New Geriatric Rotation for Residents in Internal Medicine.

J. A. Vasallo, P. R. Casner. *Internal Medicine, Texas Tech University HSC-Paul L. Foster School of Medicine, El Paso, TX.*

Supported By: Supported By: Donald W. Reynolds Foundation

Purpose: The growth of the older population will mean that more physicians will require expertise in dealing with geriatric medical problems. With this in mind the American Board of Internal Medicine and the American Geriatrics Society have called for improved and expanded training in geriatrics for residents in Internal Medicine training programs. A new rotation in Geriatrics was started

in the Department of Internal Medicine. We collected information to assess knowledge of geriatrics before and after the rotation for each resident. We also asked every resident to evaluate the components of the rotation.

Methods: The rotation consisted of clinical and didactic components. The clinical components included 2 half days at an outpatient geriatric clinic, one half day at hospice (including a home visit), one half day at a nursing home, one half day at a rehabilitation hospital and one day at a PACE unit. The didactic components consisted of required reading in selected areas of geriatrics with self-study questions. The self-study questions were reviewed with each resident at a session once a week. Residents were given a pre-test at the beginning of the 4-week rotation and a post-test at the end of the rotation. Residents completed a 14-item questionnaire at the end of the rotation to evaluate the rotation. Pre and post-test results were compared using Student's t-test for paired samples.

Results: Fourteen residents participated in the rotation over a 12 month period. Nine residents were at PGY-3 level and 3 were PGY-2 level. One resident was from Family Medicine, the rest were from Internal Medicine. The mean + S.D. pre-test score was 54.3 + 8.5 (range 40-70). The mean post-test score increased significantly by 25 points ($x = 79.3 + 10.7$; range 60-100; $p<0.001$). In response to the question "I feel that I improved my knowledge base of geriatrics from this rotation," 71% strongly agreed and 29% agreed.

Conclusion: A newly implemented geriatric rotation that incorporated clinical and didactic components significantly improved resident knowledge of geriatrics. The rotation was well received by residents and the majority of residents felt more comfortable caring for elderly patients after the rotation.

D62

Physician knowledge and confidence in potentially inappropriate prescribing for the elderly: A multi-institutional cross-sectional survey.

R. Ramaswamy,[1] V. Maio,[2] J. J. Diamond,[3] A. R. Talati,[2] B. Roehl.[1] *1. Family Medicine, Underwood-Memorial Hospital, Woodbury, NJ; 2. Health Policy, Thomas Jefferson University, Philadelphia, PA; 3. Family and Community Medicine, Thomas Jefferson University, Philadelphia, PA.*

Introduction: Research has shown a high prevalence of potentially inappropriate prescribing for older adults, yet little is known about why physicians prescribe medications of potential concern. This study assesses physician confidence and knowledge regarding appropriate prescribing practices for the elderly.

Methods: Family and Internal Medicine attendings and residents at three teaching institutions in the Philadelphia area were asked to complete a 25-item paper or online survey. Physician characteristics, including age and current level of practice, were analyzed. Confidence in prescribing for the elderly was assessed using a 5-point Likert scale. Six clinical vignettes based on the 2003 Beers criteria were used to evaluate physician knowledge about medications to avoid in the elderly. Topics tested included common chronic conditions: hypertension, osteoarthritis, arrhythmia, insomnia and depression.

Results: Eighty-nine physicians (40 attendings, 48 residents and fellows, 1 unclassified) completed the survey, for a response rate of 45%. Mean age of the attending was 43.8 years (SD: 8.3) and that of the resident was 29.5 years (SD: 3.3). Half of the physicians estimated that over 25% of their practice consisted of patients 65 years or older. When knowledge of Beers criteria was tested, the mean correct response was 3.9 (SD: 1, min=0, max=6). Overall, attendings performed better than the residents, with 45% of attendings scoring above-average; only 17% of residents achieving the same. Mean score was 4.4 (SD: 0.8) for the attendings and 3.6 (SD: 1) for the residents. Interestingly, 42% of physicians scoring above average had used the Beers criteria for prescribing as compared to only 21% of those scoring below average. Overall, 75% of physicians felt confident about their prescribing practices irrespective of their knowledge scores.

Conclusions: This study demonstrates that knowledge of the Beers criteria correlates with better prescribing. Unfortunately, a high proportion of physicians is unaware of the Beers criteria and is over confident despite a lacking knowledge base. Educational interventions need to be integrated into the training and continuing medical education process.

D63

Insights to teaching geriatrics in an Evidence Based Medicine format.

S. B. Bhattacharya. *Family Medicine, Division of Geriatric Medicine, University of Kansas Medical Center, Kansas City, KS.*

Supported By: Kansas Reynolds Program in Aging

Background: Teaching geriatrics in an Evidence Based Medicine (EBM) format has been a challenge with many residency programs. EBM education has primarily focused on appraisal of current literature, yet has been sparse on clinical questions centered around actual geriatric patients. We introduced a required monthly Geriatrics Journal Club to our Family Medicine Residency centered around clinical geriatric questions that arose during their inpatient, outpatient or nursing home settings. We present data from our 1st group of residents.

Objectives: 1)To improve the comfort level of residents in addressing their bedside geriatric questions using EBM;

2)To assess whether there is a difference in comfort level and perception of clinical relevance of EBM searches among each year's residents;

3)To assess whether the residents feel it is worth the time invested and to create a resident-driven forum to share their EBM search techniques.

Methods: Residents were given a dry-erase board in their work area where they wrote geriatric questions that arose in their clinical practice. Residents were paired and presented a 1 hour geriatric journal club answering a question from the dry-erase board using faculty guidance. For 10 minutes, residents presented a geriatric case that led to their question and asked the audience where they would find the answer. 30 minutes was spent guiding the audience to the geriatric-specific EBM resources they used including on-line databases, journals, textbooks and websites to get their answer. 15 minutes were for lessons learned and practice relevance. After each session, all residents completed an 11 item survey; presenters and participants had slightly different surveys. Ten questions were in Likert format assessing EBM comfort level, clinical relevance, current and future EBM use and session's efficacy. 1 question asked how they would change the session.

Results: 17 participant and 2 presenter surveys have been done. All residents except one felt the time spent was worthwhile. First year residents found the journal club session to be more clinically relevant, were less likely to use EBM to find answers to their geriatric questions and found the session more effective than 2nd and 3rd year residents. Interestingly, 2nd year residents had the highest comfort level in using EBM geriatric resources, 3rd years the least. All felt it was a good forum to explore EBM and common geriatric bed-side problems.

D64

Self-Directed E-Learning to Enhance Palliative Care Education for Medical Students.

S. K. Levine,[1] S. Limaye,[1] A. Baron,[1] A. Bial,[1] B. Patel,[1] S. Williams,[1] S. Smith.[2] *1. Internal Medicine, Section of Geriatrics and Palliative Medicine, University of Chicago, Chicago, IL; 2. Family Medicine, University of Chicago, Chicago, IL.*

Supported By: The University of Chicago Excellence in Education and Clinical Care Award and the Donald W. Reynolds Foundation

Purpose: 1)To develop self-directed web-based exercises on pain management for third-year medical students(M3)

2)To evaluate the impact of this learning on students' knowledge and satisfaction

Introduction: End-of-life education for medical students at the University of Chicago is an area needing substantial improvement. In July 2007 a 4-hour palliative medicine workshop was built into the M3 ambulatory Internal Medicine rotation. Content: introduction to hospice and palliative medicine, pain management, final hours of living, and breaking bad news. To date, feedback has been positive. However, 4 hours is insufficient to cover the topics thoroughly. Also, it is unclear how these principles are subsequently reinforced or utilized in clinical practice. One solution is to provide a web-based repository of supplemental exercises for self-directed learning. This method would reinforce principles learned in the classroom and introduce material that was not covered.

Methods: Three new web-based modules were developed: 1) Pain in persons with substance abuse issues; 2) Neuropathic pain; and 3) Management of opioid side effects in the older adult. Module content: learning objectives, ACGME competencies addressed, links to a reading assignment/trigger video, and an unfolding case with multiple-choice questions. Students access these modules via a public website, created by U of C geriatricians entitled "Care of the Hospitalized Aging Medical Patient," http://www.champ.bsd.uchicago.edu. These modules prepared students for small group discussion during the workshop. Students completed pre and post knowledge tests as well as satisfaction surveys on use of the modules.

Results: 71 students completed both 12-item knowledge tests. Mean scores increased significantly from 4.4 to 9.2 (paired t-test, SD 2.1, $p<0.001$). Satisfaction surveys showed students felt more prepared to care for patients with pain issues (100%), recommended using electronic case-based modules during other clerkships (81%), and overall felt this was a valuable educational experience (100%).

Conclusions: Self-directed web-based modules may be a valuable method to add supplemental material to a palliative medicine curriculum where time and resources are limited. Future work will assess this method of learning for other geriatrics content.

D65

Opioid Use for Chronic Non-Cancer Pain in Older Adults: Understanding Provider and Patient Perspectives.

A. Spitz,[1] M. Papaleontiou,[1] A. A. Moore,[2] Y. Olkhovskaya,[1] M. C. Reid.[1] *1. Division of Geriatrics and Gerontology, Weill Cornell Medical College, New York, NY; 2. Division of Geriatrics, David Geffen School of Medicine, University of California, Los Angeles, CA.*

Supported By: Medical Student Training in Aging Research (MSTAR) Program,

Robert Wood Johnson Foundation, John A. Hartford Foundation

OBJECTIVE: To describe the perspectives of health care providers and patients regarding the use of opioids as therapy for chronic non-cancer pain (CNCP) in older adults.

METHODS: We conducted focus groups with English- or Spanish-speaking older (aged 65 or above) CNCP patients and their health care providers. Participants were recruited from four primary care sites in New York City, each serving a predominantly Hispanic, black or white community. Separate provider and patient focus groups were conducted, which were audiotape recorded. Standard qualitative methods were used to analyze the transcribed data.

PARTICIPANTS: To date, 18 providers (13 physicians, 5 nurse practitioners) and 29 patients (mean age 80 years, 14 current opioid users) participated in one of 4 and 6 focus groups, respectively. Additional focus groups are scheduled for January 2009.

RESULTS: Analysis of the provider transcripts revealed 5 salient themes: 1) cautious use of opioids for CNCP in older adults; 2) barriers exist at the provider, patient and systems level, most notably insufficient training, adverse effects and patient stigma or fear of addiction; 3) higher comfort level prescribing opioids for palliative care than for CNCP; 4) NPs, but not MDs voiced legal/regulatory concerns; and 5) opioid abuse/misuse not observed in older CNCP patients. Review of the patient transcripts revealed 2 major themes: general willingness to take opioids if prescribed; and side effects, particularly constipation and mental status changes, limit use. Limited cultural/racial differences were observed; however, reduced access and greater perceived stigma were patient-level barriers perceived in communities of lower socioeconomic status.

CONCLUSIONS: Providers perceive opioids to be effective medications in certain older adults when well monitored and used cautiously, yet providers and patients reported substantial barriers to their use for CNCP. Provider and patient educational initiatives may facilitate use in appropriate patients. Initiatives targeted at providers should address evidence-based guidelines for opioid use, management of adverse effects and infrequent addiction potential in older adults.

D66

Prevalence and Characteristics of Vitamin D Deficiency on a Geriatric Inpatient Consult Service.

W. Zafirau, S. Hazelett, S. Fosnight, A. Castilano. *Summa Health Syatems, Akron, OH, OH.*

William Zafirau, MD
Sue Hazelett, MSN
Sue Fosnight, BS
Amy Castalano, BS

Introduction: Vitamin D deficiency is becoming an increasingly recognized geriatric syndrome and has been associated with fractures, falls, osteomalacia, and functional decline in the general geriatric population. The prevalence and characteristics of vitamin D deficiency in specific geriatric sub-populations are not well known. Further defining the prevalence and risk factors for vitamin D deficiency could form the basis of developing rational screening and treatment guidelines for vitamin D deficiency.

Purpose: To determine the prevalence, risk factors, and population characteristics associated with vitamin D deficiency in patients presenting to an inpatient geriatric consult service.

Methods: Retrospective chart review of all patients >65 years old referred to the inpatient Geriatric Consult Service between January, 2007 and August, 2007. Data collected included Vitamin D level, fall history, fracture history, comorbidities, mental status, depression, function, living situation, activities, muscle weakness, assistive devices, nutrition, and calcium, phosphorous, BUN/Creat, and albumin levels.

Analysis: Data were analyzed using Pearson's correlations and Chi Square.

Results: 105 patients were seen for a geriatric consult during the study's timeframe. Of these, 48 (46%) were Vitamin D deficient (< 15ng/ml) and another 35 (33%) had Vitamin D insufficiency (15-25ng/ml). There was a significant positive correlation between Vitamin D levels and the level of assistance with Activities of Daily Living (ADLs) ($p=.015$) and a significantly greater proportion of patients with dementia had Vitamin D deficiency. While Vitamin D levels were not significantly associated with falls, the correlation between falls and level of assistance with ADLs approached significance ($p=.092$). There were no other significant relationships between Vitamin D levels and any of the other variables studied.

Conclusions: This study showed a high level of Vitamin D deficiency or insufficiency in this inpatient population, suggesting that screening may not be needed and serve only to delay treatment. It also offers further support of a positive correlation between Vitamin D levels and function.

D67

The DRD2, DRD3 and SLC6A3 gene in elderly patients with delirium.

B. C. van Munster,[1,2] J. Korevaar,[1] S. E. de Rooij.[2] *1. Department of Clinical Epidemiology, Biostatistics and Bioinformatics, AMC, Amsterdam, Netherlands; 2. Department of Internal Medicine, Academic Medical Center, Amsterdam, Netherlands.*

Introduction

Dopamine excess appears to be critical in the final common pathway of delirium. The aim of this study was to investigate whether genetic polymorphisms in three dopamine related genes (the dopamine receptor 2 (DRD2), dopamine receptor 3 (DRD3) and the dopamine transporter (SLC6A3) gene) were associated with delirium.

Methods

Patients aged 65 years and older, acutely admitted to the medical department or to the surgical department following hip fracture were included. Delirium was diagnosed by the Confusion Assessment Method. 16 single nucleotide polymorphisms (SNPs) and one Variable Number of Tandem Repeats in the SLC6A3 gene, nine SNPs in the DRD2 gene, and six SNPs in the DRD3 gene were genotyped.

Results

50% of the 115 surgical patients and 34% of the 605 medical patients experienced delirium. Delirious patients were older and had more frequently pre- existing functional and cognitive impairment ($p<0.001$). After correction for multiple testing, one SNP in the SLC6A3 gene (rs393795) reduced the risk of delirium ($p=0.001$). Combining all SNPs of the three genes in a multivariable logistic regression model with age, cognitive impairment and functional impairment resulted in a significant effect of 2 SNPs of the SLC6A3 gene (rs1042098, $p=0.04$) and (rs393795, $p=0.007$) and one SNP of the DRD2 gene (rs6276, $p=0.001$)

Conclusions

Variations in the SLC6A3 gene and possibly the DRD2 gene were associated with delirium. Although validation is needed, our results support a role for the dopamine transporter and dopamine receptor 2 in the pathogenesis of delirium.

D68

Time-course of S100B and Neuron Specific Enolase in delirium in the elderly.

B. C. van Munster,[1,2] C. M. Korse,[3] J. M. Bonfrer,[3] J. C. Korevaar,[1] S. E. de Rooij.[2] *1. Department of Clinical Epidemiology, Biostatistics and Bioinformatics, AMC, Amsterdam, Netherlands; 2. Medicine, AMC, Amsterdam, Netherlands; 3. Clinical Chemistry, Netherlands Cancer Institute, Amsterdam, Netherlands.*

Background

S100B protein and Neuron Specific Enolase (NSE) can increase due to brain cell damage and/or increased permeability of the blood-brain-barrier. Elevation of these proteins has been shown after various neurologic diseases with cognitive dysfunction. The aim of this study was to compare the level of S100B and NSE of patients before, during and after delirium with patients without delirium.

Methods

Consecutive patients aged 65 years or more acutely admitted after hip fracture were included. Delirium was diagnosed by Confusion Assessment Method and preexistent global cognitive function by the 'IQCODE-SF'. In maximal four serum samples per patient S100B and NSE were determined by electrochemiluminescence immunoassay.

Results

Of 120 included patients with mean age 83.9 years, 62 experienced delirium. Delirious patients had more frequently pre-existing cognitive impairment (67% vs. 18%, $p<0.001$). Comparing the first samples during delirium to samples of the non-delirious patients, a difference was observed in S100B (median 0.16 versus 0.10 μg/L, $p=<0.001$), but not in NSE (median 11.7 versus 11.7 ng/L, $p=0.97$). S100B levels were higher during delirium from 1 day before up until 8 days after surgery.

Conclusions

Delirium was associated with increased level of S100B. Future studies are needed to elucidate the role of these proteins in the pathophysiology of delirium and to investigate the possibility as biomarker for delirium.

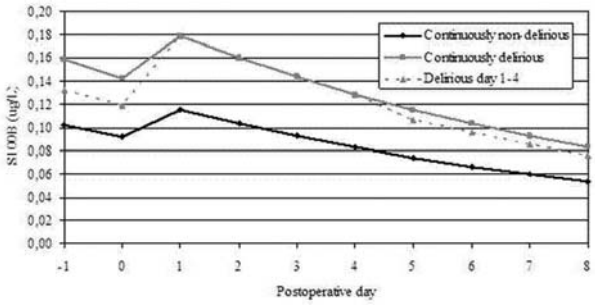


Figure 1. S100B in patients with and without delirium

D69

The APOE-ε4 allele and delirium.

B. C. van Munster,[1,2] J. C. Korevaar,[1] S. E. de Rooij.[1] *1. Clinical Epidemiology, Biostatistics and Bioinformatics, AMC, Amsterdam, Netherlands; 2. Medicine, AMC, Amsterdam, Netherlands.*

Introduction

The purpose of this study is to review studies related to the association between delirium and the presence of the APOE ε4-allele, including new study results.

Methods

Patients aged 65 years or more acutely admitted to the medical or the surgical department following hip fracture were included. Delirium was diagnosed with the Confusion Assessment Method, cognitive impairment by IQCODE-SF. A literature search was performed to identify articles analyzing the association between APOE and delirium.

Results

New data showed that 49% of 76 surgical patients and 35% of 580 medical patients experienced delirium. Delirious patients were significantly older (82 vs. 77 years) and had more frequently pre-existing functional (66 vs. 26%) and cognitive impairment (86 vs. 29%) than non-delirious patients ($p<0.001$). The odds ratio for the risk of delirium adjusted for age, cognitive and functional impairment of ε4- compared to non-ε4-carriers was 1.7 (95% C.I. 1.1-2.6).

Four studies looking at the association between delirium and the apoe-ε4 allele were identified in different study populations: two surgical (Leung, 2007;Tagarakis, 2007), one medical (Adamis, 2007) and one intensive care population(Ely, 2007). The unadjusted odds ratio for delirium in a meta-analysis including the new study results was 1.5 (95% C.I. 1.2-2.0) of ε4- compared to non-ε4 carriers (figure 1). Additionally, the APOE ε4 allele was related to a longer duration of delirium in two independent populations.

Conclusion

The APOE ε4 allele is associated with the presence of delirium and is possibly associated with a longer delirious episode.

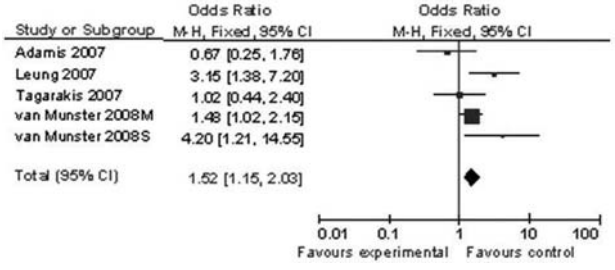


Figure 1: Forest plot of APOE studies in delirium.

D70

Inappropriate prescription in geriatric outpatients: a comparison of two instruments.

B. Montero-Errasquin,[1] M. Sanchez-Cuervo,[2] C. Sánchez-Castellano,[1] E. Delgado-Silveira,[2] T. Bermejo-Vicedo,[2] A. Cruz-Jentoft.[1] *1. Geriatrics, Hospital Universitario Ramón y Cajal, Madrid, Madrid, Spain; 2. Hospital Pharmacy, Hospital Universitario Ramón y Cajal, Madrid, Madrid, Spain.*

Objective: inappropriate prescription of drugs is frequent in older patients. Existing criteria for the detection of inappropriate prescription are still controversial. Recently, a new screening tool has been developed (STOPP-START, Gallagher et al, Int J Clin Pharmacol Ther 2007) of older persons' prescription to detect both potentially inappropriate drugs and potentially appropriate, indicated drugs. We compared these new criteria with Beers criteria in a geriatric outpatient clinic setting.

Method: STOPP-START and Beers criteria were used by an independent observer (a pharmacist not involved in patient care) in 50 consecutive geriatric outpatients older than 69 years

Results: Mean age: 81.5 ± 4.5 years, 64% women. Mean number of prescription drugs per subject: 5.8 ± 3.1. Beers criteria found that 26% of the subjects used a potentially inappropriate drug (the most frequent mistake was the use of anticholinergic drugs in patients with cognitive impairment or constipation). STOPP criteria found that 54% of the subjects received a potentially inappropriate drug (the use of benzodiazepines in frequent fallers was the most frequent problem). Besides, START criteria found that 48% of the subjects were not receiving indicated drugs for some diseases (underuse of statins in subjects with documented history of coronary, cerebral or peripheral vascular disease, and life expectancy greater than 5 years, and lack of fibre supplements in symptomatic diverticular disease with constipation were the most frequent problems).

Conclusions: STOPP criteria detect a higher number of subjects with potentially inappropriate drug prescription than Beers criteria in this outpatient geriatric population. START criteria also detected many subjects who were not receiving appropriate drug treatments for their diseases.

D71

EFFECT OF HISPANIC ETHNICITY ON FATAL FALL RISK.

D. Landy,[1] S. Dearwater,[2] M. J. Mintzer,[1,3] J. Graygo,[1] A. Vakharia,[1] A. Kressler,[1] C. Schulman.[1] *1. Univ of Miami Miller Sch of Med, Miami, FL; 2. Dept Pub Hlth, Miami Dade County, Miami, FL; 3. GRECC, Bruce W. Carter Dept of VAMC, Miami, FL.*

Background: Accidents are the 5th leading cause of death in the US, and falls are the most common accident in the elderly. Prior research identifying risk factors for falls has focused on ethnically homogenous groups. The "Hispanic paradox" refers to the decreased mortality seen in Hispanic populations despite lower socioeconomic status. We sought to describe the effect of Hispanic ethnicity on the risk and character of fatal falls in an ethnically heterogeneous community. **Methods**: A search of the FL Office of Vital Statistics identified all accidental fall deaths in Miami-Dade County in 2006. The M.E.'s report and death certificate were reviewed for each case for demographic (age, gender, ethnicity, education, marital status, living arrangement) and fall-related (activity prior to fall, fall time, fall height, fall inside, fall location, fall room) variables. U.S. Census Bureau data were used to define the 2006 MDC population by age, gender, and ethnicity. Incidence was calculated as the number of fatal falls over the population at risk and 95% confidence intervals (95%C.I.) assume a Poisson distribution. Odds ratios (O.R.) were calculated to describe the influence of gender, ethnicity, and age on fall risk with 95% C.I. and adjusted O.R.'s included. **Results**: In 2006, MDC had 341,525 residents over age 65 among whom 104 accidental fall deaths were identified, an incidence equal to 30/100,000 (95% C.I. 25-37/100,000). Hispanics had a higher proportion of fatal fall events outdoors than white non-Hispanics (27% to 6%, Fisher's Exact p = .024). Female sex (O.R. 0.50, 95%C.I. 0.34-0.75), Hispanic ethnicity (O.R. 0.61, 95%C.I. 0.40-0.91), and age under age 75 vs. over age 85 (O.R. 0.12, 95%C.I. 0.07-0.20) were associated with decreased risk of fatal fall in univariate analysis. After adjusting for each of the other variables, female sex (O.R. 0.40, 95%C.I. 0.27-0.60) and age under 75 vs. over 85 (O.R. 0.09, 95%C.I. 0.05-0.17) were significantly associated with reduced risk of fatal fall. Hispanic ethnicity trended toward an association with reduced risk after adjustment (O.R. 0.75, 95%C.I. 0.50-1.14). **Conclusion**: Increasing age and male gender are associated with an increased risk of fatal fall. Hispanic ethnicity was associated with an increased proportion of outdoor fatal falls and trended toward an association with decreased fatal fall risk.

D72

A Comparison of Human Plasma Glycoproteome between Pre-Frail and Non-Frail Older Adults.

K. Shamsi,[1,2] A. Pierce, Ph.D.,[1,2] D. Halade,[1,2] A. Richardson, Ph.D.,[1,2] S. Espinoza, M.D..[1,2] *1. The Barshop Institute for Longevity and Aging Studies, San Antonio, TX; 2. University of Texas Health Science Center San Antonio, San Antonio, TX.*

Supported By: Semp Russ Fund of the San Antonio Area Foundation, University Research Council of the University of Texas Health Science Center at San Antonio, and the Biomedical Research Foundation of South Texas.

Frailty is a clinical geriatric syndrome characterized by adverse health outcomes, vulnerability to decline, poor tolerance to stressors, and physiologic distinction from non-frail individuals. To date, physiologic alterations associated with frailty have almost exclusively demonstrated modifications in glycoproteins, such as interleukin-6 and C-reactive protein. Glycoproteins are a result of glycosylation, the most common type of post-translational modification. They are involved in various cellular processes thought to be altered with aging, particularly the regulation of cell-to-cell and cell-to-matrix interactions. The objective of this pilot study was to utilize proteomic biotechnology to analyze glycoprotein alterations between non-frail and pre-frail older adults. Plasma was isolated from 4 pre-frail and 4 non-frail community-dwelling older adults, who were matched by age (±9 years) and sex. Pre-frailty was assessed using previously validated screening criteria (1 or 2 of weak grip, slow walk, weight loss, exhaustion, or low physical activity). Glycoproteins were isolated in Concanavalin A lectin columns and eluant was separated and quantified using 2-dimensional polyacrylamide gel electrophoresis. We measured differences in spot intensity using PDQuest software (Bio-Rad, Inc) to identify glycoproteins which differed in intensity (≥ 2-fold) between pre-frail and non-frail individuals. Glycoproteins of interest were identified by matrix-assisted laser desorption/ionization time of flight spectrometry. We studied 4 men and 4 women (2 pre-frail and 2 non-frail for each gender) with an overall mean age of 81. Seven glycoproteins were upregulated in pre-frail individuals compared to non-frail (2 haptoglobin isoforms, 2 transferrin isoforms, 1 fibrinogen-G, and 2 unidentified). The up-regulation of several inflammatory glycoproteins in pre-frail vs. non-frail individuals indicates that this methodology may be useful in detecting alterations in glycoprotein expression between pre-frail and non-frail individuals. Moreover, differences in glycoproteins demonstrated at an intermediate stage, when frailty is not clinically apparent, may suggest feasibility for the identification of potential biomarkers for frailty and earlier identification of older adults at risk for adverse health outcomes.

D73

Factors Associated with Daily Estimated Peak VO2 Measured by Actigraphy in Older Adults with Heart Failure.

B. Strong,[3] P. Cuddihy,[2] J. Weisenberg,[2] S. Teryua,[1] S. Kachnowski,[3] J. Howell,[3] M. S. Maurer.[1] *1. Medicine, Columbia University, New York, NY; 2. GE Global Research, Nishkamya, NY; 3. Healthcare Innovation Technology Lab, New York, NY.*

Supported By: Funded by GE Healthcare, Inc.

Background: Impairments in functional capacity are prevalent in older adults with heart failure (HF) and can be determined by exercise testing. The ability to estimate peak oxygen consumption (peak VO2) on a daily basis would be a useful advance. Accordingly, we developed a method for estimating peak VO2 using actigraphy and evaluated the factors associated with ePeakVO2 in the real world setting in order to gain insights into potential targets to improve function.

Methods: Prospective study among 61 subjects (61±15 years, 48% women, EF 43±16) with chronic HF (NYHA Class I-III) who were provided Acticals, actigraphy devices that record minute-by-minute activity counts that approximate general activity, including exercise and sleep. Six months of continuous actigraphy data was recorded for each patient. Peak activity for the most active 6 minutes of each day were summed and expressed in units of METS and oxygen consumption, termed the estimated daily peak VO2 (ePeakVO2). Univariate analysis identified factors associated with decreased ePeakVO2 and multivariate analysis evaluated independent associations with ePeakVO2.

Results: ePeakVO2 averaged 12.2±1.9 ml/kg/min (range 6.6 to 17.9). ePeakVO2 was stable over time with no significant differences in monthly measures over the 6 month study period, indicative of a high reproducibility. ePeakVO2 correlated with 6MWT distance ($r=0.58$, $p<0.001$) Univariate analysis identified the following factors to be associated with ePeakVO2: age, NYHA Class, anemia, chronic pain, anergia (lack of energy), 6MWT distance, B-type natriuetic peptide, physical function domain of the SF-12 but not gender, EF, mental domain of the SF-12, depression or sleepiness. Multivariate analysis demonstrated that only anergia (self reported lack of energy) had residual associations with ePeakVO2.

Conclusions: Among older adults with HF, it is possible to obtain a reproducible estimate of peak daily oxygen consumption using actigraphy that is correlated with submaximal exercise performance. Several extra-cardiac factors along with traditional measures of cardiac function were associated with ePeakVO2. Anergia was independently associated with ePeakVO2 and remains an important target for intervention.

D74

Predictors of Venous Ulceration in a cohort of Community Dwelling Older Adults.

P. Y. Takahashi,[1,3] S. S. Cha,[2] S. J. Crane.[1] *1. Internal Medicine, Mayo Clinic, Rochester, MN; 2. Biostatistics, Mayo Clinic, Rochester, MN; 3. Kogod Center of Aging, Mayo Clinic, Rochester, MN.*

Supported By: Mayo Foundation

The project described was supported by Grant Number 1 UL1 RR024150 from the National Center for Research Resources (NCRR).

Introduction: Identifying risk factors for venous ulceration remains an important clinical dilemma for providers of older adults. Venous ulcers can be debilitating and time consuming for patients; however, prevention can help high risk patients.

Aim: The objective was to determine the association between the presence of predictor factors and a previous history of venous ulceration in a community dwelling cohort over 60.

Methods: This was a cross-sectional study of patients over 60 impaneled in a primary care practice on January 1st 2005. The primary predictors included demographic factors (age, gender, and marital status), comorbid health conditions, healthcare utilization, and vascular conditions. The primary outcome was an association between these factors and a history of venous ulceration. For univariable analysis, the authors used Pearson's chi square analysis for proportional variables and logistic regression for continuous variables.

Results: There were 12, 650 subjects in the study. 581 patients (4.6%) had a history of venous ulceration with an average age of 76.7 +/- 9 yrs compared to 72.5 +/- 9 yrs. ($p<0.001$) in the ulcer-free group. Age, gender, maritial status, and previous hospitalization were all significantly associated with venous ulceration. The comorbid health conditions with the highest odds ratios (over 2) included a history of venous insufficiency (OR over 900, 95% CI 792-1496), degenerative arthritis (OR 2.3, 95% CI 1.9-2.9), and a history of decubitus ulcer (OR 2.7, 95% CI 1.7-4.1). Other significant conditions with odds ratios over 1.4 included peripheral neuropathy, rheumatoid arthritis, CHF and falls.

Discussion: There appears to be a strong association between a history of venous ulceration and demographic risk factors as well as comorbid health conditions. The group with previous venous ulcers is older, more likely to be female, and more likely to have a previous admission. Venous insufficiency is the strongest risk factor for venous ulceration, interestingly a diagnosis of a previous pressure ulcer also places the person at risk for a venous ulcer. Other risk factors like CHF and arthritis may increase edema in the lower extremities; thus, placing the person at risk. Using these predictors, providers can emphasize preventative skin care and edema control in at-risk adults.

D75

Vitamin D deficiency/resistance and cerebrovascular disease.

S. A. Khalid, L. J. Ball, S. J. Birge. *Division of Geriatrics and Nutritional Science, Washington University School of Medicine, St Louis, St. Louis, MO.*

Background

Vitamin D deficiency is associated with cognitive impairment and dementia. We examined the hypothesis that secondary hyperparathyroidism, that has been associated with vascular disease, is an important determinant of cerebrovascular disease (CVD).

Methods

Consecutive geriatric clinic patients, age >60 yrs, with no or mild dementia were classified as having probable, possible, or no CVD based on major CVD risk factors (RF); coronary artery disease, stoke, diabetes, hypertension, and smoking (last 5 yrs). Minor RF included manifestations of CVD; depression, fear of falling, and orthostatic symptoms. Probable CVD was defined as 3 or more RF, 2 of which are major. Possible CVD was less than 3 RF with 2 minor RF or 1 major and 1 minor RF. No CVD was defined as one or no minor RF. Vitamin D deficiency was defined as 25OHD levels <15 ng/ml and PTH >42 pg/ml and vitamin D insufficiency as 25OHD levels 16-32 ng/ml and PTH >42 pg/ml. Vitamin D sufficiency was defined by 25OHD levels >15 ng/ml with PTH <42 pg/ml and vitamin D resistance as 25OHD >32 ng/ml with PTH >42 pg/ml.

Results

Proportion with vitamin D sufficiency was 39.1%, vitamin D deficiency 10.5%, vitamin D insufficiency 24.1%, and vitamin D resistance 26.3%. Patients with PTH >50 pg/ml had increased risk of CVD, O.R. 4.4 (1.7-11.1). Over a quarter of patients had vitamin D resistance requiring a mean replacement dose of 13,500 IU/day, range 1,785 – 42,800 IU/day. The proportion of patients with CVD that have secondary hyperparathyroidism (PTH >42) increases with advancing age suggesting that chronicity of exposure to elevated PTH increases the risk of CVD.

Conclusion

Secondary hyperparathyroidism (PTH >42) is associated with increased risk of CVD in elderly. Because significant numbers of elderly patients have vitamin D resistance, higher doses of vitamin D may be required to prevent and treat CVD in these patients.

Proportion of patients with PTH > 42

Ages	61 - 70	71 - 80	>80
No CVD	28	10	8
Possible/Probable CVD	28	46	60

D76

Delirium associated with urinary tract infection.

V. N. Vasudevan, D. Thomas, J. Flaherty, N. Bassil, S. Vegi. *Geriatrics, Saint louis university, Saint louis, MO.*

Delirium Associated with Urinary Tract Infection

V.Vasudevan M.D,D.Thomas M.D, J.Flaherty M.D, N.Bassil M.D, S.Vegi M.D

Department of Geriatrics, Saint louis University hospital, Saint louis.Missouri 63110

BACK GROUND

Delirium is common in hospitalized older adults. Urinary tract infections (UTI) and asymptomatic bactiuria are also common in this population. Conventional wisdom suggests that a urinary tract infection is a frequent cause of delirium.

METHODS

We performed the Confusion Assessment Score (CAM) on 221 consecutive admissions over a six month period to a Acute Care of the Elderly unit in a teaching community hospital in persons age 65 and older and examined the relationship to UTI.

The diagnosis of delirium was confirmed when both acute onset, a fluctuating course, and inattention were present, along with either disorganized thinking or altered consciousness (score >4. A diagnosis of UTI was positive when either pyuria >5 cells or a positive urine culture was present.

RESULTS

CAM positive delirium was present 69 (31%) of subjects. A UTI was present in 51 subjects (23%), urine was not ordered in 82 subjects (37%). There was a tendency for more urine analyses to be done in persons with delirium (X2=7.42, p=0.024). However, in patients who have delirium, the finding of a UTI is not more common than in patients without delirium (X2=0.005, p=0.946).

	UTI	No UTI	Total
Positive CAM score	20	34	54
Negative CAM score	31	54	85
Total51	88	139	

Systemic manifestations of UTI, such as urosepsis or fever, are plausible precipitating events for delirium. However, it is difficult to attribute asymptomatic bacteruria or an uncomplicated UTI as a cause for delirium. A positive urine culture was not more common in subjects with delirium. Only 3 subjects had a positive blood culture, 2 of whom had delirium; however blood cultures were done in only 49% of subjects.

CONCLUSIONS

The presence of an uncomplicated UTI or asymptomatic bacteruria may represent selection bias due to performing a urine analysis in patients suspected of having delirium. The fluctuating course of delirium may cause attribution bias when treatment of a UTI appears to have reversed the delirium. So it is advisable to look for causes of Delirium beyond UTI in a primary care setting.

	UTI	No UTI	Total
Positive CAM Score	20	34	54
Negative CAM Score	31	54	85
Total	51	88	139

D77

WITHDRAWN

D78

Validation of the Overactive Bladder Symptom Score in Spanish (OABSS-S) in the Elderly.

A. Weinberg,[1] G. Brandeis,[1] J. P. Weiss,[4] J. Bruyere,[1] M. Rutman,[3] J. G. Blaivas.[2] *1. Geriatrics, Boston University Medical Center, Boston, MA; 2. Urology, Cornell Medical Center, NY, NY; 3. Urology, Columbia Medical Center, NY, NY; 4. Urology, Downstate Medical Center, Brooklyn, NY.*

Supported By: A Medical Student Training in Aging Research (MSTAR) grant was awarded to Weinberg, AC.

Purpose: The Overactive Bladder (OAB) Symptom Score questionnaire, recently validated in English, permits a graded response for urgency.(1) Due to lack of evaluation tools for Hispanic patients, we proposed to validate the OABSS-S.

Methods: Spanish speaking subjects >18 yrs of age were recruited from primary care clinics with IRB approval. The OABSS-S, consisting of 7 questions on a 5-point Likert scale (5 regarding urgency and 2 regarding frequency), was completed twice within 10 days. The subjects were divided (OAB pos, OAB neg) by the presence of OAB, assessed by an additional proxy question. Internal consistency was determined with Cronbach's alpha. Test-retest was determined by Spearman's rho. Discriminant validity was assessed by calculating the average total scale score for each group (OAB pos, OAB neg) and comparing these scores using 1-way ANOVA and the Tukey post hoc test.

Results: 117 completed the study; 29 of these subjects were over the age of 65, mean age was 72±7 years, 21 (72%) were women, and 16 (55%) had OAB. There was a significant ($p<.001$) correlation between subjects answering the OAB proxy question and their severity score on the OABSS-S. A high level of consistency was observed among the OABSS-S items answered at visit 1 and 2. Cronbach's raw alpha =.93. The observed Spearman's rho indicated strong association between responses for all OABSS-S items at visits 1 and 2. Spearman's coefficients ranged from r= .47 to r=.85 ($p<.001$). Strong correlation was observed between the total OABSS-S score at visits 1 and 2 for all subjects (r=.92), the OAB pos (r=.61) and OAB neg (r=.96) ($p<.001$). Comparison of total scores within each group for visits 1 and 2 was not significant (12.9 ± 7.7 vs. 14.0 ± 7.1). Discriminant validity testing revealed that there were significant differences in the responses between diagnostic groups ($p<.001$) at visits 1 and 2: OAB pos vs. OAB neg; total vs. OAB neg; total vs. OAB pos.

Conclusions: The OABSS-S provides clinicians with a graded response for urgency. Even with the small elderly sample, its validation allows assessment of OAB in a Spanish speaking population; without that aid of interpreter services.

1. Blaivas JG, et al. Validation of the overactive bladder symptom score. J Urol 2007;178:543-7

D79 New Investigator Awardee

Medication Prescribing Practices for Geriatric Prisoners in the Largest State Prison System.

B. A. Williams,[1,2] J. Baillargeon,[3] K. Lindquist,[1] L. C. Walter,[1,2] K. Covinsky,[1,2] H. Whitson,[4] M. Steinman.[1,2] *1. Division of Geriatrics, UCSF, San Francisco, CA; 2. Division of Geriatrics, SFVAMC, San Francisco, CA; 3. University of Texas, Galveston, TX; 4. Division of Geriatrics, Duke University, Durham, NC.*

Supported By: Hartford Outcomes Research Scholars Award, Brookdale Leadership in Aging Fellowship (Dr. Williams), and the VA Career Development Transition Award (Dr. Steinman)

Background: Geriatric prisoners constitute the most rapidly growing prison population and the largest contributor to rising prison

healthcare costs. Despite the danger and cost of erroneous medication use in older adults, the quality of geriatric medication prescribing in prison is unknown. We assessed medication prescribing practices for geriatric prisoners in Texas, the largest state prison system with a unique academic affiliation.

Methods: 12-month cross-sectional study of all 13,117 geriatric prisoners in Texas (≥55 years). We assessed "inappropriate medication use" using Zhan criteria and compared our results to prior studies of community prescribing. We also assessed "use of indicated medications" using 6 ACOVE indicators.

Results: Inappropriate medications were prescribed to 32% of prisoners ≥55 years and 36% ≥65 years; half of inappropriate use was attributable to over-the-counter (OTC) antihistamines. When OTCs were excluded, inappropriate use dropped to 14% (≥55 years) and 17% (≥65 years), equivalent to rates in a Veterans Administration study (17%) and lower than rates in an HMO study (26%). Median rate of indicated medication use for 6 ACOVE indicators was 80% (range 12% - 95%); gastrointestinal prophylaxis for patients on nonsteroidal anti-inflammatories at high risk for gastrointestinal bleed constituted the lowest rate (12%).

Conclusions: Medication prescribing for geriatric prisoners in Texas is generally consistent with community practice, likely related to the affiliation between the Texas state prisons and the University of Texas. However, the need for improvement in geriatric-focused prescribing, including overuse of antihistamines and underuse of gastrointestinal prophylaxis, suggests a need for geriatric-oriented education for prison healthcare providers.

D80

Physicians' Ethnicity: Does it Affect Nursing Home Placement?

G. El-Kass,[1] M. Ashraf,[1] O. Garankina,[1] A. Gory,[1] B. Louis,[1] G. Alano,[1] A. Galasso,[1] S. Heidarian,[1] S. Imtiaz,[1] I. Dubson,[2] N. Bustros,[2] N. Mathew,[4] R. Hussain,[4] G. P. Wolf-Klein.[3] *1. NSLIJ Health System, New Hyde Park, NY; 2. Lutheran Medical Center, Brooklyn, NY; 3. The Lorber Center for Advancement of Medical Education, New Hyde Park, NY; 4. Krasnoff Institute for Quality Mgt, Great Neck, NY.*

Background: By 2020, 12 million elderly will need long-term care. Studies have linked institutionalization with patients' ethnicity, but none have addressed the impact of physicians' ethnicity, a correlation explored in this analysis.

Methods: An anonymous survey was distributed to physicians in 5 hospitals in New York. Data were collected on the likelihood of institutionalizing their patients, and their mother or father, based on 14 medical conditions. Statistical analysis used the Pearson correlation coefficient and Kruskal-Wallis test with χ^2 test for associations.

Results: Surveys were obtained from 204 physicians (52.9% primary care/PCPs and 9.3% geriatricians, 60.9% males and 56.8% in training). Of these, 47.0% were Caucasian, 37.7% Asian, and 8.8% African-American. Overall, all physicians were twice as likely to place their patients in assisted living (ALF) or skilled nursing facilities (SNF), as they would for their mother or father, for the following conditions: stroke (p<.001), end stage renal disease (p<.012), malignancy (p<.001), incontinence (p=.04) and dementia (p=.013). Furthermore, PCPs were significantly more likely to place, when compared to geriatricians, for malignancy (p<.005), dialysis (p<.007), stroke (p<.008), dementia (p<.01) and aggressiveness (p<.008). Male physicians were more likely to place their fathers and mothers, respectively, in ALF for malignancy (p=.008, p=.007), dementia (p=.01, p=.02), stroke (p=.03, p=.009), and for amputation (p=.01, p=.006) and their mothers only for caregiver stress (p=0.008), and incontinence (p=.01), and in SNF for caregiver stress (p=.025, p= 0.01) and for incontinence (p=.035 and p=.009). There was also a direct correlation between increasing age of physicians and placement for incontinence (p=.009) and stress (p=.002).

Physicians' ethnicity was never found to be a significant factor in the decision to place patients or parents in either ALF or SNF, in any medical conditions.

Conclusion: These data present a significant lack of association between physicians' ethnicity and placement of either patients or parents. It also underlines the potential impact of geriatricians in seeking alternative community resources for long term care.

D81

Characteristics and Types of Costs for Medicaid Recipients with Decubitus Ulcers: 2001 California Data.

C. P. Henson,[1] C. Weiss,[2] B. Leff,[2] J. Wolff,[2] T. Richards,[2] B. Clark,[2] C. Boyd.[2] *1. Northeasten Ohio Universities College of Medicine, Rootstown, OH; 2. Johns Hopkins University School of Medicine, Baltimore, MD.*

Supported By: This project was funded by the Center for Health Care Strategies (CHCS), as well as the American Federation for Aging Research (AFAR) Medical Student Training in Aging Research (MSTAR) Program.

Background: Disabled and older Medicaid recipients are groups at high risk of acquiring decubitus ulcers (DUs), which contribute to rising health care costs.

Purpose: To create a method to identify people with DUs and use it to describe their health care costs.

Methods: We created a definition of ulcers using diagnosis, procedure, pharmacy, and medical equipment codes. We then used the 2001 Medicaid Analytic eXtract (MAX) data for California to identify the individuals within this definition. Costs were analyzed for individuals with no ulcer, other ulcers, and DUs in 4 cost categories: 1) long term care (LTC); 2) hospital; 3) pharmacy; and 4) physician and coordination of care services; and, in 3 eligibility categories: 1) disabled beneficiaries with Medicaid Only; 2) disabled beneficiaries with Medicaid and Medicare; and 3) aged beneficiaries with Medicaid and Medicare.

Results: Individuals with DUs contributed 5.9% of $4.96B LTC costs, 8.5% of $1.34B hospital costs, 1.7% of $2.4B pharmacy costs, and 1.0% of $0.25B physician and coordination costs. Across eligibility categories, having a DU was consistently associated with approximately double the LTC cost per person, compared to having no ulcer, e.g. among disabled with Medicaid only, $22,724 (95%CI: $22,237-$23,211) per user of LTC with a DU vs. $8,307 (95%CI: $8,182-$8,432) for a user of LTC with no ulcer. Regardless of eligibility status, annual hospital costs per person were highest in people with DUs: $28,925 ($28,426-$29,424) per person in disabled beneficiaries with Medicaid only.

Conclusions: Persons with DUs account for greater Medicaid costs per person across several types of health services, indicating opportunity for prevention and improvement of care and efficiency.

D82

Comparing the Effectiveness of Telephone and Palmtop Computer Based Experience Sampling Methods in Hospitalized General Medicine Patients.

J. R. Wortman,[1] A. Chiu,[2] J. Siddique,[3] D. Meltzer.[2] *1. Pritzker School of Medicine, University of Chicago, Chicago, IL; 2. Department of Medicine, University of Chicago, Chicago, IL; 3. Department of Health Studies, University of Chicago, Chicago, IL.*

Supported By: Dr. Meltzer would like to also acknowledge salary support from the Agency for Health Care Research and Quality through the Hospital Medicine and Economics Center for Education and Research in Therapeutics (U18HS016967), NIGMS through an RO1 "Efficacy of TEACH Research(R01GM075292), and the National Institute of Aging through a mid-career career development award (K24 AG031326). Mr. Wortman was supported by the National Institute of Aging through the Short-term Aging-related Training Program (T35AG029795).

Background

Pain control is a key part of care for hospitalized patients. The quality of pain control is typically measured using retrospective reports of pain, which are often inaccurate. The Experience Sampling Method (ESM) is a measurement tool that takes repeated, real-time measurements of an experience, and may provide more accurate measures of the quality of pain control than retrospective surveys. The purpose of this study is to assess the efficacy of two different ESM methodologies to measure pain control in hospitalized patients: palmtop computer ESM and bedside telephone ESM. Palmtop computers offer the advantage of automated data collection, but may be difficult for some patients to use. Bedside phones are ubiquitous in hospital rooms, and are more easily used by many patients.

Methods

Participants for this study were patients admitted to the general medicine service at the University of Chicago Hospital. Participants were surveyed repeatedly throughout the day for real time reports of pain and satisfaction with pain management. Palmtop ESM patients were surveyed on a palmtop computer during their hospital stay, while telephone ESM patients were surveyed over their bedside telephone.

Results

Patients were significantly more likely to be physically able to participate in the telephone than the palmtop ESM study (97% vs. 72%, $p < 0.001$) and were also more likely to consent to the telephone study (80% vs. 65%, $p < 0.001$). Logistic regressions confirm these findings, and also show that these benefits of using telephone ESM over palmtop computer ESM were significantly greater among patients over age 65. In addition, a clustered logistic regression shows that telephone ESM patients were significantly more likely to answer the ESM survey than palmtop ESM patients (OR = 3.40 for telephone vs. palmtop ESM; $p = 0.026$).

Conclusions

This study highlights the strengths of bedside telephone ESM as a technique to gather momentary pain data from hospitalized general medicine patients, particularly older patients. Because there are bedside telephones in virtually all hospital rooms, bedside telephone ESM might be a preferred way to assess pain and satisfaction with pain management in hospitalized patients.

D83

Inappropriate Medication Dosing in Older Inpatients with Concealed Renal Insufficiency.

J. L. Kalender-Rich,[1] S. K. Rigler,[1,2] J. B. Wetmore.[1,3] *1. Internal Medicine, University of Kansas Medical Center, Kansas City, KS; 2. Landon Center on Aging, University of Kansas Medical Center, Kansas City, KS; 3. Kidney Institute, University of Kansas Medical Center, Kansas City, KS.*

Background: Older adults with normal or near-normal serum creatinine levels may have significant renal insufficiency which, if not recognized, puts them at risk for avoidable adverse effects from drugs that are not properly dose-adjusted. It is not known how often this occurs in hospital settings (where up-to-date creatinine values are immediately available), nor which drugs are most likely to be renally-inappropriately prescribed to older inpatients.

Methods: The charts of persons aged 70 years and older, admitted over a three-month period to an urban teaching hospital, were examined. Only those with admitting creatinines between 0.8 and 1.5 mg/dL were retained. The lowest creatinine during the hospital stay was used to estimate each subject's best creatinine clearance (CrCl) using the Cockcroft-Gault formula. Best CrCl values were then classified according to whether they fell below or above 50 mg/dL; this is a typical threshold for renally-based dose adjustment in clinical reference materials. Doses for commonly used medications that require renal dosing adjustment (allopurinol, digoxin, metformin, quinolones, pipercillin-tazobactam, cefepime, enoxaparin, H2 antagonists, and trimethoprim-sulfamethoxazole (TMP-SMX)) were classified as renally-appropriate or renally-inappropriate, based upon published recommendations.

Results: Two hundred eighty-eight subjects were included, with age ranging from 70 to 99 years. Mean age was 78 years, and 62% were men. The most frequent admitting diagnoses were cardiovascular, hematologic/oncologic, infectious, neurologic, and traumatic. The mean admission creatinine was 1.1. Seventy-five subjects (26%) had an estimated CrCl < 50mL/min. Among a total of 415 prescriptions for targeted drugs, 15% were prescribed in higher-than-recommended doses. The most common renally-inappropriately dosed drugs were digoxin (37%), cefepime (36%), TMP-SMX (43%), and quinolones (22%).

Conclusion: More than one quarter of older inpatients in this sample had a CrCl < 50 mg/dL. One out of seven drugs was incorrectly dosed. Older persons with normal or near-normal creatinine values are at risk to receive typically-prescribed drug doses, rather than renally-adjusted doses, increasing the potential risk for avoidable adverse drug effects.

D84

Effectiveness of PRISMA on Frail Older People Receiving Services from a Case Manager: a Nested Cohort Study.

M. Dubois,[1,2] M. Raiche,[2] R. Hebert.[3,2] *1. Community Health Sciences, Université de Sherbrooke, Sherbrooke, QC, Canada; 2. Research Center on Aging, Sherbrooke University Geriatric Institute, Sherbrooke, QC, Canada; 3. Family Medicine, Université de Sherbrooke, Sherbrooke, QC, Canada.*

Supported By: CIHR, MSSS, Estrie regional HSS Agency

Purpose: PRISMA is a 6-component integrated service delivery system for frail older people. All elders living where the PRISMA model has been implemented benefit from 4 components: 1) coordination between decision-makers and managers at the regional and local levels, 2) single entry point, 3) single assessment instrument coupled with case-mix management system, and 4) computerized clinical chart. In addition, subjects with moderate to severe disabilities are eligible (when identified) for the other 2 components: 5) case management, and 6) individualized service plans. The PRISMA model has proven its effectiveness at the population level. This study compared subjects who received only the model's first 4 components to those who also benefited from components 5 and 6.

Methods: We used data from the experimental group of the PRISMA impact study on adults aged 75 or over at risk of functional decline, in which subjects were evaluated yearly for up to 4 years. We compared subjects with and without (exposed/unexposed) a case manager, matched for functional disabilities, age, and gender. Outcome variables were changes in satisfaction and empowerment over the year during which the case manager was assigned and in annual use of services, comparing the year of assignment to the previous year.

Results: Out of the 728 subjects in the experimental group of the PRISMA impact study, 131 (18%) were assigned a case manager over the 4 years. Match pairs were created for the 78 cases for which data were available before and after assignment. Satisfaction with service organization and involvement in decisions increased among the exposed elders but remained stable for the unexposed group ($p=0.04$ and 0.02, respectively when comparing slopes). Change in the number of annual ER visits was similar across groups, but the number of annual hospitalizations tended to increase less for exposed subjects ($p=0.08$). Finally, more hours of help for personal care were added over the year for case-managed elders ($p=0.01$).

Conclusions: Case managing is effective since it improves the satisfaction and empowerment of older adults while increasing access to help for personal care and tending to slow the increase in hospital stays.

D85

Primary-care Physicians' Perspectives about Evaluation and Treatment of Cardiovascular Diseases among Older Adults in New Zealand.

M. Weiner,[1,2] S. Wells,[3] N. Kerse.[4] *1. Ctr for Aging Research, Indiana Univ, Indianapolis, IN; 2. Regenstrief Institute, Inc, Indiana Univ, Indianapolis, IN; 3. Section of Epidemiology & Biostatistics, Univ of Auckland, Auckland, New Zealand; 4. Dept of Gen Practice and Primary Healthcare, Univ of Auckland, Auckland, New Zealand.*

Supported By: This work was supported by a grant from the Auckland Faculty of the Royal New Zealand College of General Practitioners. Dr. Weiner was supported by grant number 5K23AG020088 from the National Institute on Aging.

Background. Cardiovascular (CV) diseases are a leading killer in the US and New Zealand. The two countries have comparable providers and treatment. In both countries, the Framingham Heart Study, which excluded patients 75 or more years of age, informs clinical guidelines and decision support. Risk rises with age. Higher risk yields greater treatment benefits. In New Zealand, little is known about primary-care physicians' (PCP) perspectives regarding assessing and managing CV risk in older patients. We determined such perspectives in a PCP sample. We hypothesized that PCP reports would vary according to patients' age and profile.

Methods. We designed a 39-item questionnaire including case scenarios with estimated CV risk of >30%, 20-25%, and 5-10% and scenarios combining functional and residential status. We asked under which conditions PCPs would undertake CV risk assessment or recommend drugs for cholesterol or blood pressure. Based on a registry, questionnaires were administered to 398 PCPs by Web, fax, or mail. Responses were tabulated, discussed, and summarized.

Results. 86 PCPs responded. Most were male (57%), practicing for at least 10 years (98%), and 40-59 years of age (74%). The oldest patient scenario, of 83 years but with only intermediate risk (20-25%), was least likely to get a cardiovascular risk assessment (52%) or cholesterol-lowering drug (24%). The patient with lower blood pressure but higher risk was less likely to get a drug to lower blood pressure (29% vs. 47%). PCPs indicated that they would usually assess risk for a 78-year-old patient if living in the community without dementia but not if in residential care or with dementia.

Conclusion. PCPs' decisions often deviate from guidelines by depending more on individual risk factors than on overall risk. In addition, PCPs may be applying different logic to patients in residential care. Older patients or those in residential care may not be receiving care consistent with guidelines. More aggressive attention to absolute risk could offer older adults compression of time spent in disability or dependency from CV morbidity.

D86

Frequency and characteristics of 30-day readmissions of patients 75 and older to a community hospital.

S. Diaz,[1] D. Hain,[1,3] R. Reynolds,[1] J. Ouslander.[1,2] *1. Boca Raton Community Hospital, Boca Raton, FL; 2. University of Miami Miller School of Medicine (UMMSM), Boca Raton, FL; 3. College of Nursing, Florida Atlantic University, Boca Raton, FL.*

Supported By: The Retirement Research Foundation.

Background: Hospital re-admission can result in morbidity and increased health care costs for older patients. Many re-hospitalizations are potentially avoidable. Medicare may financially incentivize lower re-hospitalization rates in the near future. The purpose of this study was to analyze data to guide a quality improvement intervention aimed at reducing 30-day re-hospitalization rates among patients age 75 and older.

Methods: This was a retrospective study of all admissions age 75+ admitted to a community hospital over a 1-year period. Administrative and medical record data were analyzed to examine characteristics of re-hospitalizations.

Results: Of 8,204 admissions of patients 75 and older, 1080 (13%) were associated with a re-admission within 30 days. Of the 5,989 patients with an index admission, 634 (11%) had one re-admission, and 188 (3%) had two or more. Selected characteristics of the re-admissions are illustrated in the Table.

Conclusions: Re-hospitalizations within 30-days were common among patients age 75+ admitted to this community hospital. A substantial proportion occurred within 7 days of hospital discharge, and many of them were for conditions that might have been managed as an outpatient if an effective transitional care program was in place. These data highlight the need to develop and test transitional care strategies for targeted conditions that commonly cause re-hospitalizations in older patients.

Number of days between discharge and re-admission	
0 - 3 days	228 (21%)
4 - 7 days	200 (19%)
8 - 30 days	652 (60%)
Discharge location after initial admission for those readmitted	
Skilled Nursing Facility	381 (35%)
Home with Skilled Home Health Care	348 (33%)
Home (self-care)	197 (18%)
Hospice, Other	154 (14%)
Most common primary and secondary diagnosis for re-admission	
Acute renal failure	150 (7%)
Congestive heart failure	106 (5%)
Lower respiratory tract infection	105 (5%)
Atrial fibrillation	84 (4%)
Urinary tract infection	68 (3%)

D87

Patient-Focused Telecommunications Technologies for Older Adults.

S. Gorbachev,[1,2] M. Weiner.[1,2] *1. Indiana University Center for Aging Research, Indianapolis, IN; 2. Medical Informatics, Regenstrief Institute, Inc., Indianapolis, IN.*

Supported By: This work was supported by the National Library of Medicine, the John A. Hartford Foundation, and National Institute on Aging grant no. 5K23AG020088.

Background: Managing health information is difficult for physicians and patients, especially older adults with complex needs. Telecommunications (TC) technologies can improve patient-physician relationships, self-management, costs, and information management, especially for the homebound. This review of patient-focused TC summarizes potential risks and benefits.

Methods: We sought articles published after January 2000, when AMA guidelines for physician-patient electronic communication were published. We searched MEDLINE and CINAHL for English-language articles published between then and Aug. 2008 with combinations of "e-mail", "web portal", "telemedicine", and "patient-physician telecommunications". We reviewed results to confirm relevance and ensure focus on patients. Initially, 207 articles were identified. We focused on randomized trials, pilots, surveys, reviews, and cost studies. We eliminated articles with only descriptive summaries, editorials, or authors' opinions. Articles were reviewed, discussed, and summarized.

Results: 35 articles were found: 8 trials, 5 pilots, 17 surveys, 2 reviews, and 3 cost studies. TC offer e-mail, portals, text messaging, and interactive televideo. Most (52%) of the patients in metro areas had used e-mail (52%) and had strong interests in TC with physicians

(80%), but physicians' e-mail with patients increased to only 4% by 2005. Barriers for physicians were lack of reimbursement, time demands, and privacy concerns. Using TC technologies requires training of physicians and patients. Studies found improved phone-call loads, spending, pain, emergency visits, and drug usage. Patients and physicians agreed that online TC are effective for non-urgent issues. Compared to phone or mail, TC increased patients' and physicians' satisfaction with patient-physician relationships. Twelve (34%) of the articles referred to participants at least 50 years of age. Internet users over 50 tended to have college education and limited or no disability. Older patients are increasingly adopting or requesting TC for healthcare.

Conclusions: Modern TC add convenience and security for delivering health information. TC can improve several outcomes for older adults, but few studies of clinical outcomes are available. Greater attention to reimbursement and training, for both older patients and their physicians, could raise physicians' adoption of TC to meet patients' interests.

D88

Are Physicians Referring Their Elderly Patients to Geriatricians?

A. Gory,[1] R. Harisingani,[1] L. Katinas,[1] B. Louis,[1] O. Garankina,[1] G. El-Kass,[1] N. Kohn,[3] G. P. Wolf-Klein.[2,1] *1. NSLIJ Health System, New Hyde Park, NY; 2. The Bette and Jerome Lorber Center for Advancement of Medical Education, New Hyde Park, NY; 3. FIMR Biostatistics, Manhasset, NY.*

BACKGROUND: A recent survey of geriatric academic programs (ADGAP) suggested that the role of geriatricians should be primarily directed to the "most vulnerable older adults" (Warshaw et al, 2008). We studied the referral patterns of physicians to geriatricians, to determine reasons and barriers for geriatric consults.

METHODS: An anonymous survey was distributed during Grand Rounds in 3 teaching hospitals with in-patient geriatric consult services. Data collected included level of training, comfort level in the management of distinct geriatric syndromes and referral patterns.

RESULTS: Of the 115 surveys gathered, 69.2% were from non-attendings (medical students, residents, fellows, and Physician assistants) and 30.8 % from attendings. Most (64.8 %) were in internal medicine and 66.4% had been in practice for 1-5 years. The majority (69.8%) reported that at least half of their patients were over 65. Although almost a third (28.7%) acknowledged limited or no training in Geriatrics, 75.7% indicated being comfortable with treating elderly patients in general, though less with specific conditions such as falls (55.7%), frailty (47.8%) and dementia (43.0%); only 34.8% were comfortable with nutritional issues and 33.0% with depression. Most physicians (81.7%) knew of the availability of the geriatric consult service and 65.4% would "probably or always" consider referring their patients to a geriatrician. Of interest, 82.1% thought a consult could "maybe, probably or always" lead to transfer of care to a geriatrician, resulting in "loosing a patient to another physician." Non-attendings were significantly less comfortable treating elderly ($p<.006$) and more likely than attendings to refer to geriatricians ($p<.003$), particularly for frailty ($p<.0005$), polypharmacy ($p<.008$), nutrition ($p<.0002$) and palliative care ($p<.002$); they also stated that geriatric consult would improve quality of life ($p<.0014$).

CONCLUSION: Attending physicians appear to underutilize geriatric consults services, despite recognized lack of geriatric training. Since our data revealed an optimistic and significant difference between non-attendings and attendings in referral patterns, we suggest that educational programs be developed to encourage the utilization of geriatric consults for the benefits of elderly patients.

D89

Unnecessary Bladder Catheterization Of Hospitalized Elderly Patients: Timing And Monitoring<b/b>

B. Louis,[1] M. S. Ashraf,[1] G. El-Kass,[1] A. Gory,[1] O. Garankina,[1] G. Alano,[1] R. Hussain,[3] C. Sison,[4] G. P. Wolf-Klein.[1,2] *1. NSLIJ Health System, New Hyde Park, NY; 2. Lorber Center for Advancement of Medical Education, New Hyde Park, NY; 3. Krasnoff Quality Management Institute, Great Neck, NY; 4. FIMR Biostatistics, Manhasset, NY.*

Background: "Almost one quarter of hospitalized medical patients 70 years of age or older receive an indwelling urinary catheter without a clear medical indication." (Holroyd-Leduc, CJGIM, 2007). We proposed to study the timing of routine ordering by physicians of indwelling catheters in hospitalized elderly patients.

Methods: The study consisted of a retrospective chart review of the first 100 patients over the age of 75, hospitalized between January and March 2008. Data included diagnosis of UTI and sepsis, presence of indwelling bladder catheters at arrival in the Emergency Room (ER) or placement thereafter, timing of placement by nursing shifts and length of stay of in the hospital (LOS).

Results: Of the 100 charts reviewed, the average age of patients was 84.7 (range 75-97) and 66% were females. Over a third of patients (37%) had a urinary catheter placed during their hospital stay. The majority of catheters (73%) were placed in the ER, and usually during the day shift (40.5%), or in the evening (32.4%). Only 27% of charts provided initial documentation to justify catheterization. Follow-up documentation consisted, on average, of 3.2 (range: 0 -10) chart entries for continued catheterization. Though only 28% had been transferred from long term care facilities, almost half (43.2%) of catheterized patients were nursing home residents ($p<.009$). When comparing patients with and without catheters, gender, co-morbidities and level of acuity were non significant. However, 21.6% of patients with Foley catheters were septic on admission, compared with 1.6% of those without ($p<.001$), and 24.3% had a discharge diagnosis of sepsis compared to 4.8% of non catheterized patients ($p= .004$). A quarter (24.3%) of patients with Foley catheter had a diagnosis of dementia, compared with 4.8% of those without catheters ($p=.004$). Finally, the average length of stay (LOS) of catheterized patients was 10.5 days compared with 6.7 ($p=.004$).

Conclusion: This study defines potential risk factors for catheterization in elderly hospitalized patients, particularly during the transfer of demented residents. These results may encourage avoiding the routine placement of indwelling bladder catheters in an effort to improve patient care.

D90

Comfort Level and Attitudes of Internal Medicine and Family Practice Resident Physicians towards Dementia Care.

O. Garankina,[1] M. S. Ashraf,[1] A. Galasso,[1] A. Gory,[1] G. El-Kass,[1] B. Louis,[1] E. Opara,[4] G. Alano,[1] E. Ciampa,[2] G. P. Wolf-Klein.[1,3] *1. North Shore-LIJ Health System, New Hyde Park, NY; 2. Krasnoff Quality Management Institute, Great Neck, NY; 3. Lorber Center, New Hyde Park, NY; 4. Lutheran Medical Center, Brooklyn, NY.*

Background: Recent studies have demonstrated that practicing physicians have limited confidence in their diagnostic skills and ability to manage demented patients. However, there is a dearth of data on the comfort level of physicians-in-training towards dementia care. Thus, we designed a study to explore attitudes of residents in Internal Medicine and Family Practice.

Methods: A standardized, validated survey tool (Kaduszkiewicz, 2008), designed to assess self-rated attitude and comfort level regarding dementia care, was administered anonymously during conferences in 3 teaching hospitals in New York. Categorical data were summarized into percentages while central tendency and variation in continuous variables were summarized into means and standard deviations. For the quantitative variables (comfort level and attitude), a

Mann-Whitney-U test (MWU) was used to determine comparisons between samples.

A Kendall's tau was used to analyze the relationships between these variables.

Results: We analyzed the first 98 surveys completed by 18 (18.4%) family practice and 80 (81.6%) internal medicine residents. A Mann-Whitney-U test found a significant difference between these residents with regards to actively searching dementia diagnosis, using cognitive tests, and finding community resources or educational programs on dementia: specifically, a post hoc Kendall's tau revealed that family practice residents were more likely than internal medicine to agree with the following statements: "I actively search for dementia in all patients over 65" (p=.001), "If I suspect cognitive problems, I regularly use cognitive tests" (p=.004), "I assist the relatives in finding community resources to help with the comprehensive care including legal issues" (p=.000), "I would welcome additional educational programs on managing demented patients and their relatives" (p=.014), and "I would like to get a formal geriatric psychiatry rotation" (p=.004).

Conclusion: Since there appears to be striking differences between internists and family medicine residents, we believe that educational curriculum on dementia care need to be developed to better prepare them to meet the growing challenges of elderly demented patients awaiting their care.

D91

The Geriatric HearCare Service, new tool in geriatric care.

M. Lerch,[1] M. Decker-Maruska.[2] *1. Geriatric Dept., Ev. Krankenhaus Bethanien Iserlohn, Iserlohn, Germany; 2. Geriatric Dept., Hospital St. Barbara, Attendorn, Germany.*

Background: Due to the demographic change and the increasing life-expectancy there is an incline of dementia (Förstl, Maelicke, Weichel 2004) as well as relevant hearing deficiencies (Sohn, Universität Witten/Herdecke, 2000) in Germany. In a current evaluation the authors were able to vindicate the hypothesis of a significant prevalence of the co morbidity of these two entities of more than 32% (Lerch, Decker-Maruska 2008)

Even in a multidisciplinary geriatric team a hearing deficiency or hard of hearing is not always detected, especially when this handicap is rarely revealed by the patient itself.

Lacking the patients information and the skill of detecting hearing problems within the team, the patients behaviour, like reduced compliance, inadequate reaction towards demands, lack of interest or social retreat up to total isolation is often falsely interpreted as a development of dementia instead of resulting from mis-or non-understanding of verbal information due to a hearing deficiency.

This assumptions may also lead to a misinterpretation of the physical and cognitive skills of the patient and therefore to a insufficient or incorrect diagnosis and treatment (Decker-Maruska, 1997).

Method: In front of this background the authors have developed and established a multimodal geriatric care model, the "Geriatric HearCare Service". It is organized, attended and documented by a specially trained nurse. Patients were screened by a geriatrician,an ENT, a hearing aid technician(audiometry) and a neuropsychologist for hearing deficiencies and signs of intelectual decline to ensure a more profound differentiation between dementia and a "pseudo-dementia" due to an undetected hearing deficiency. Besides the screening all geriatic personal with patient contact were trained in handycap-oriented forms of communication.

Result: Apart from the detection of patients with dementia or a hearing deficiency or in more than a quarter of the cases both conditions (26.1%), the improved communicative skills resulted in a optimized quality and efficiency of nursing, treatment and therapy in patients with dementia or hard of hearing..

Conclusion: The Geriatric HearCare Service enables the geriatric team to a better differentiation of patients behaviour due to dementia or a hearing deficiency and provides a structure for a follow up and provision of hearcare support (i.e. hearing aids, audio-training esc.)

D92

Dementia and hard of hearing – a co morbidity often overlooked in geriatric.

M. Lerch,[1] M. Decker-Maruska.[2] *1. Geriatric Dept., Ev. Krankenhaus Bethanien Iserlohn, Iserlohn, Germany; 2. Geriatric Dept., St. Barbara Hospital, Attendorn, Germany.*

Background: There is an incline of the co morbidity of dementia and hard-of-hearing in a geriatric clientele within the geriatric hear care service. Apart from that there are difficulties in the differentiating between dementia and pseudo-dementia due to overlapping symptoms in both entities.

Methods: Within 18 months 1556 patients of our geriatric department were screened for a relevant hearing impairment using a clinical ENT examination as well as an audiometry (speech and sound) and for cognitive skills using the Mini Mental Status Examination (MMSE). Further more we screened for symptoms and changes in behaviour patterns of the patients and the influence of communication skills on these patterns.

Results: 700 of the 1556 patients had a MMSE < 24 points, 225 of these had a relevant hearing impairment resulting in 32% of all patients with a possible dementia. Of the remaining 555 patients another 13, 9% had a relevant impairment of their hearing but with a normal MMSE. 40 of the remaining 301 patients were tested with an MMSE = 0 and had an impaired hearing, but were excluded from the evaluation due to uncertain cognitive state. During the investigation we were able to detect and describe a number of behavioral patterns in dementia patients as well as in patients with hearing deficiencies and the same reaction to the same communicative approaches but due for different reasons.

Conclusions: There seems to be a significant percentage of geriatric patients with dementia and impaired hearing. Apart from that a number of patients with normal cognitive skills show deficits in their communication and their social interaction due to an untreated hearing-impairment, leading to the possible diagnosis of a "pseudo dementia" if not thoroughly evaluated. Therefore a preventive clinical screening for cognitive skills and sensual impairment as well as and a different, handicap-oriented communicative approach of this group of patients is needed to prevent misdiagnosis and underestimation.

D93

WITHDRAWN

D94

Impact of Chest X-ray Findings on Antibiotic Ordering Behavior in Nursing Home Acquired Pneumonia.

N. D. Cella,[1] T. Radcliff,[1] K. Oman,[1] S. Linnebur,[1] D. Fish,[1] M. Ruscin,[2] R. Fish,[1] M. McNulty,[1] D. Liebrecht,[1] E. Hutt.[1] *1. University of Colorado, Denver, CO; 2. South Illinois University, Edwardsville, IL.*

Supported By: MSTAR program, UCLA School of Medicine; AHRQ Grant RO1 HS13618-01A1

Chest X-ray and Antibiotic Ordering in Nursing Home Acquired Pneumonia

Objectives: to describe the relationship between chest x-ray (CXR) findings and antibiotic ordering for nursing home (NH) residents with Lower Respiratory Tract Infection (LRTI).

Design: prospective NH medical record review.

Setting: Sixteen NHs from one corporation in 3 states between 2004-2007.

Participants: NH residents with >2 respiratory and systemic LRTI signs and symptoms.

Measurements: Subjects' NH medical records were concurrently reviewed for demographics, illness severity, comorbidity, and functional status. Trained nurse data collectors recorded whether a CXR was ordered and the radiologists' interpretation; whether and which antibiotics were ordered; and the duration of antibiotic treatment. In subjects who had CXRs, antibiotic use was compared between those with and without CXR evidence of pneumonia. We assessed the association between CXR findings and antibiotic ordering behavior adjusting for case mix using multivariate methods.

Results

Of 1123 LRTI episodes, 867 had CXRs, and 546 showed probable or possible pneumonia. Only 22 CXRs were non-diagnostic. After adjusting for study year, site, rural location, subjects' age, illness severity, functional status, and discharge to emergency department or hospital, subjects with CXR evidence of pneumonia were five times (OR 5.1; 95% CI 3.1 – 8.4) as likely to have an antibiotic initiated and were more likely to receive an anti-pneumococcal quinolone or extended spectrum beta-lactam. CXR evidence of pneumonia was also associated with longer antibiotic treatment 6.5 (SD 3.3) vs. 5.5 (SD 3.2) days, p<.01).

Conclusion

In spite of the limited quality of portable CXRs, NH physicians appear to use them to help guide antibiotic use in NH LRTI. Treatment of subjects with CXR evidence of pneumonia was more likely to be in accord with nationally promulgated, evidence-based, nursing home-acquired pneumonia treatment guidelines, than when there was no CXR evidence of pneumonia. Whether antibiotic use in the 37% of subjects without CXR evidence of pneumonia was warranted requires further study.

D95

Nursing and Dentistry: Uncovering an Underserved Geriatric Population.

R. D. Kennedy. *College of Nursing, NYU, New York, NY.*

Approximately 15 percent of the United States adult population visit their dentist each year, but do not visit a medical healthcare provider. To reach this population, the New York University College of Nursing (NYUCN) opened a nurse managed primary health care practice located within the New York University College of Dentistry (NYUCD). Patients are referred by dental students, faculty and staff that are medically underserved and underprivileged and whom may not seek out medical care or have limited access to it. The practice provides an opportunity to create a medical home for the underserved and the elderly that addresses both their oral and systemic health needs.

This unique model of care is a result of the partnership between the NYUCN and the NYUCD and has created new paradigms in interdisciplinary practice in which nurse practitioners and dentists provide primary health care and dental care under one roof. Another unique characteristic is that the Faculty Practice is an Article 28 Medicaid practice that also accepts Medicare, commercial insurance and offers an income based fee system for those with no insurance. In keeping with the international leadership that the NYUCN provides for care of the elderly, the practice has a strong commitment towards meeting the health care needs of patients 65 years and older.

This presentation will discuss strategies to create innovative, collaborative and evidence based clinical practice models between nursing and dentistry to meet the healthcare needs of an ever-increasing number of older adults. Results from the 2007 Institute for Nursing Centers national survey will be presented which not only highlight this demographic population but also disclose the failures and barriers faced during the start up phase. Providers will discuss data from the survey and the strategies that have been implemented to improve the delivery of care and to reach out to the targeted patients. Together the Colleges are implementing innovative strategies for improving the oral health and systemic health outcomes for geriatrics. Future clinical and educational goals and challenges for the practice will be shared to ensure the continuation of quality, comprehensive and cost effective health care for the elderly.

D96

The Performance of Geriatric Inpatient Units in the Care of Frail Adults with Heart Failure.

S. M. Gharacholou,[1,2] R. Sloane,[1] H. J. Cohen,[1,3] K. E. Schmader.[1,3] *1. Geriatrics, Duke University Medical Center, Durham, NC; 2. Cardiology, Duke University Medical Center, Durham, NC; 3. Geriatric Research, Education and Clinical Center (GRECC), Veterans Affairs Medical Center, Durham, NC.*

Supported By: S. Michael Gharacholou, MD is supported by a D1 Medical Training Grant through the Department of Health and Human Services and the Duke Center for Aging.

This study was supported by the Department of Veterans Affairs Cooperative Studies Program.

Background: Geriatric assessment and management of frail older adults with a history of heart failure (HF) may improve health care outcomes.

Methods: We performed a secondary analysis of hospitalized frail patients with a history of HF who were previously studied in a randomized controlled trial (NEJM 2002;346:905) of geriatric evaluation and management units (GEMU, n=155) versus inpatient usual care (UC, n=154) in Veterans Affairs Medical Centers. The GEMU used multidisciplinary teams that provided comprehensive geriatric evaluation and management. Patient outcomes at discharge and 1 year post-randomization included survival, changes in health-related quality of life (HRQOL) Short-Form general health survey (SF-36), basic activities of daily living (bADL), and total costs.

Results: Mortality at 1 year between GEMU (29.0%) and UC (27.3%) groups was similar (p=0.73). After adjusting for the baseline HRQOL scores and the number of in-hospital days, patients in GEMU had greater improvements in mean scores for physical function (PF) (0.17 versus -4.67, p=0.046) and bADLs (1.25 versus 0.67, p=0.003) at the time of hospital discharge compared to those in UC (Table). There was no difference in total costs between groups (p=0.9). No differences in any outcomes between the two management strategies were observed at 1 year.

Conclusions: Inpatient geriatric assessment and management programs were associated with improvements in PF and bADLs at hospital discharge without an increase in total costs. GEMU may represent an appropriate paradigm for management of older adults with HF.

Mean Change from Randomization to Discharge and 1 Year for Subjects With a History of Heart Failure by Treatment Arm

SF-36 Subscales	Time Point	Usual Care	GEMU	p Value*
Physical functioning	D/C 12 M	-4.7 -1.5	0.17 3.3	0.046 0.61
Bodily pain	D/C 12 M	9.8 19.0	11.1 15.5	0.74 0.37
Vitality	D/C 12 M	-2.5 0.8	-2.2 -0.4	0.9 0.69
Mental health	D/C 12 M	-2.2 -1.5	-2.0 1.0	0.95 0.41
Basic ADLs	D/C 12 M	0.7 0.8	1.3 1.1	0.003 0.24

Data are mean changes in scores from randomization to discharge and 1 year follow-up (adjusted for length of stay)

GEMU = Geriatric Evaluation and Management Unit

***p values are for between-group differences of mean changes in scores**

D97

Piloting Healthy Aging in Place: Implementation of an INN.

S. Rahim-Jamal,[1] V. Dettmers.[2] *1. Centre for Healthy Aging, Providence Health Care, Vancouver, BC, Canada; 2. Primary Health Care Network, Vancouver Coastal Health, Vancouver, BC, Canada.*

Supported By: Centre for Healthy Aging at Providence

Purpose: "Healthy aging" and "aging in place" are key areas of research and endeavor worldwide. As the world's population ages and longevity increases, these issues are taking center stage and a range of initiatives supporting the above are being piloted across the world. The Vancouver Coastal Health Region (VCH), in Vancouver, British Columbia, has identified a number of strategic priorities in support of "healthy aging in place" including Campuses of Care and Integrated Neighbourhood Networks (INNs).

Description: This project developed a vision and conceptual model for INNs. Through regional and provincial key stakeholder interviews and a comprehensive literature review, key health and non-health components that are required to support the healthy aging of seniors in place/community were identified. This presentation will discuss the key components and benefits of INNs and how the components are being piloted and evaluated within VCH. **Summary of Results:** A 2-year action plan to implement and evaluate various programs and services around the following themes was developed to: 1) Enhance community support for seniors; 2) Integrate health service providers with general practitioners; 3) Provide transition support between acute and community; and 4) Create a formal partnership among key health and social/community service providers. The specific programs and services implemented are discussed along with the key performance indicators (KPIs) used to measure each program's success. The challenges encountered in implementing the INN included financial cost, start-up time, lack of volunteers, need for ongoing communication, not all community stakeholders being at the table, and the availability of translation services. Successes included the creative use of human resources, existing organizations and services; less isolated, more independent and happier seniors; better linkages, referrals, collaboration and partnerships; improved communication amongst providers; patient-centered, seamless journey through the continuum of care; and enhanced community capacity. **Conclusion:** The health system alone cannot support seniors to age in place. Community-based organizations and agencies outside of the health care realm need to be partners. While the implementation of INNs in different communities will vary based on local nuances, the main components are consistent.

D98

A New Model of Geriatric Care: The Elder-Centered Law Practice.

T. Takacs. *Elder Law Practice of Timothy L. Takacs, Hendersonville, TN.*

Elder-centered law firms utilize a multidisciplinary approach to addressing deficiencies in the care of older persons who have chronic illnesses and need good care. The Elder-Centered Law Practice offers clients and their families a collaborative approach to the problem of how to find, get, and pay for good care.

Traditional elder law firms primarily focus on end-of-life, asset protection planning: how can the elderly client qualify for Medicaid nursing home benefits? For these lawyers, protecting a financial legacy for the client's heirs is their primary concern.

By contrast, for the practitioner of elder-centered law planning, the primary goal of the representation is not protecting assets for the client's heirs but instead helping clients and their families answer this question: "How do we find, get, and pay for good care for Mom?"

Practitioners call this "elder-centered" or "Life Care Planning" (in contrast to the asset-focus of traditional elder law attorneys). By hiring a multidisciplinary practice team that may include nurses, social workers, and other health-care related professionals, the Life Care Planning elder law firm addresses access to care and quality of care issues.

For this presentation, a Certified Elder Law Attorney and a "care coordinator" (as the staff position is called within a Life Care Planning elder law firm) will describe this new approach to elder law and present on substantive legal issues of critical importance to the lives and well-being of older persons.

Session Objectives.

1) The presenter will contrast the new elder-centered approach to the practice of elder law to the traditional estate and asset protection (legacy planning) approach.

2) Understand how an elder law firm will use a multi-disciplinary care coordination team within the firm to address client quality of care and access to care issues.

3) Understand the Chronic Care Model and how it applies to the delivery of elder care law services.

4) Understand the Elder Care Continuum and how elder-centered law firms broaden the scope of representation.

5) Remove the focus from "Medicaid asset protection planning" to "Life Care Planning."

D99

Atrial Fibrillation and Cognitive Decline: The Honolulu-Asia Aging Study.

C. Tao,[1] L. White,[1,2] C. Bell,[1] R. Chen,[2] R. Abbott,[2,1] H. Petrovitch,[2,1] L. Launer,[4] G. Ross,[3,1] P. Blanchette,[1] I. Schatz,[1] K. Masaki.[1,2] *1. Geriatric Medicine, John A. Burns School of Medicine, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Department of Verterans Affairs, Honolulu, HI; 4. National Institute on Aging, Bethesda, MD.*

Supported By: The Hawaii Medical Student Training in Aging Research (MSTAR) National Training Center (NIA, John A. Hartford Foundation and AFAR grant); The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; Honolulu Department of Veterans Affairs; National Institute on Aging; National Heart, Lung and Blood Institute.

Background: Atrial fibrillation (AF) increases risk of stroke, microemboli, and possibly low cerebral perfusion. Studies of AF and cognitive function show mixed results.

Methods: The Honolulu Heart Program (HHP) began in 1965 with 8006 Japanese-American men ages 45-68 years. The Honolulu-Asia Aging Study began with HHP exam 4 in 1991-93, when 3734 men ages 71-93 years were studied for cognitive function. Mid-life AF was assessed by 12-lead ECG at any of the first 3 exams (1965-74), and late-life AF at exam 4 or 5 (1991-96). Beginning at exam 4, cognitive function was assessed with the Cognitive Abilities Screening Instrument (CASI), score range 0-100. Cognitive decline was defined as >=1 SD decline in CASI (>=14 points at 6 years). Standardized criteria were used to classify dementia (DSM-IIIR), Alzheimer's disease (AD; NINCDS-ADRDA), and vascular dementia (VaD; California ADDTC). Incidence analyses excluded prevalent cases.

Results: Prevalence of AF was 0.7% in mid life and 4.4% in late life, and increased with age ($p<0.05$). There were no significant associations between mid-life AF and late-life cognitive decline. Late-life AF was associated with higher rates of prevalent dementia (3.3% vs 7%, $p=0.03$). This association lost significance after adjusting for covariates. In longitudinal analyses adjusting for age, education, prevalent stroke and apoE4, late-life AF was significantly associated with

6-year cognitive decline (OR=2.16, 95% CI=1.25-3.74, p=0.006). Multivariate Cox regression found a borderline significant association between late-life AF and incident AD (RR=2.06, 95% CI=0.95-4.47, p=0.066), but not with all-cause dementia or incident VaD.

Conclusions: Late-life AF was significantly associated with 6 year cognitive decline, and was marginally associated with incident AD. There was no association with incident VaD, possibly because clinically recognized VaD in this cohort is mostly due to lacunar infarcts. The association between AF and incident AD may reflect co-prevalent silent microscopic infarcts contributing to the clinical expression of Alzheimer lesions. Future interventions to reduce cognitive decline may include improved identification and treatment of AF.

D100

Marital Quality, Attitudes toward Death, and Adjustment to Widowhood.

D. Romo, L. Zettel-Watson. *California State University, Fullerton, Fullerton, CA.*

Prospective studies examining bereavement suggest that a host of predictors account for widow(er) adjustment. This study examined the role of two such constructs, attitudes toward death and marital quality, as they apply to the bereavement process. Research on marital quality has been mixed, suggesting a complex relationship between bereavement and characteristics of the marriage. Research on fatalism (the belief that events are largely beyond one's control), suggests that high levels are associated with negative outcomes, whereas research has linked acceptance of death with resiliency. Few studies have examined these factors simultaneously. Thus, this study examines whether pre-loss attitudes toward death buffer the impact of marital quality on psychological adjustment 6 months post-loss. Analyses use prospective, longitudinal data from the Changing Lives of Older Couples study (N = 244 widow(er)s). Regression analyses (controlling for demographics, religious involvement, health satisfaction, baseline psychological health, afterlife belief, and death forewarning) revealed that this was not the case. The interaction between marital quality and pre-loss attitudes toward death did not predict psychological adjustment. Rather, greater pre-loss acceptance of death was significantly associated ($p < .05$) with fewer depressive symptoms and less grief 6-months post-loss, regardless of marital quality. This suggests that individuals more accepting of death possess more overall resiliency, resulting in better recovery. Fatalism, in contrast, showed no direct association with psychological adjustment to widowhood at the 6-month follow-up. Results are discussed within the context of potential pathway variables, other risk and resilience factors, and the temporal diversity among negative mental health indicators.

D101

Relevance of Computerized Cognitive Assessment to Functional Disability in a Mildly Impaired Elderly Cohort.

G. M. Doniger,[1] D. R. Simon,[1] T. Dwolatzky,[2] D. Tanne,[3] F. C. Goldstein,[4] E. S. Simon.[1] *1. Clinical Science, NeuroTrax Corporation, Newark, NJ; 2. Geriatrics, Ben Gurion University, Beersheva, Israel; 3. Neurology, Chaim Sheba Medical Center, Tel Hashomer, Israel; 4. Neurology, Emory University, Atlanta, GA.*

Objective: To characterize the relationship between computerized cognitive assessment and ADLs in an elderly cohort.

Background: Objective cognitive assessment is a key determinant of cognitive status in the elderly. However, the relationship between cognitive measures and scales of everyday function is unclear and the differential relationship among cognitive domains and ADL categories poorly described. Further, though MCI has traditionally been defined by absence of functional disability, recent studies have suggested that ADLs are affected in MCI.

Methods: 849 elderly research participants (age: 74.2±7.9, education: 12.2±3.8, MMSE: 30 N=122; 26-29 N=558; 21-25 N=149; <21 N=20) completed a

computerized cognitive assessment (Mindstreams, NeuroTrax, Corp. NJ) and the Lawton IADL Scale. 160 participants received an expert diagnosis of cognitively healthy, and 249 were diagnosed with MCI (Petersen criteria). Relationship between cognitive function and ADLs was evaluated by Pearson correlation. The profile of correlations across cognitive domains (memory, executive function, visual spatial, verbal function, attention, information processing, motor skills) and ADL categories (phone use, shopping, food preparation, housekeeping, laundry, mode of transportation, medication management, finance management, driving) was described. Relationship between presence of MCI and Lawton scores was quantified using the Chi Square statistic.

Results: Cognitive domains most strongly correlated with ADLs were attention (strongest: finance management: r=-0.34, p<0.001) and executive function (strongest: finance management: r=-0.27, p<0.001); weakest correlations were with visual spatial (weakest: phone use: r=-0.04, p=0.25) and information processing (weakest: phone use: r=-0.05, p=0.42). Significant relationships between presence of MCI and ADLs were found only for phone use ($\chi 2$= 9.13, p<0.001) and medication management ($\chi 2$=5.55, p=0.02).

Conclusions: Cognitive measures of attention/executive function were most related to everyday function. The modest strength of correlation obtained agrees with other studies employing questionnaire/survey ADL measures. MCI individuals may have difficulty with certain instrumental ADLs.

D102

Non-Verbal Memory Performance is Associated with Conversion to Dementia Within 1 Year: A Prospective Study of MCI Using Computerized Cognitive Assessment.

T. Dwolatzky,[1] G. M. Doniger,[2] F. C. Goldstein,[3] E. S. Simon,[2,4] A. I. Levey,[3] J. Lah,[3] M. D. Friger.[5] *1. Geriatrics, Ben-Gurion University, Beersheva, Israel; 2. Clinical Science, NeuroTrax Corporation, Newark, NJ; 3. Neurology, Emory University, Atlanta, GA; 4. Neurology, Albert Einstein College of Medicine, Bronx, NY; 5. Epidemiology, Ben-Gurion University, Beersheva, Israel.*

Supported By: Institute for the Study of Aging

Objective: To evaluate the utility of baseline memory tests in identifying MCI individuals likely to convert to dementia over one year.

Background: 10-15% of individuals diagnosed with MCI convert to dementia annually, and it is challenging for the clinician to assess risk. The present study evaluates which memory measures are most informative in the prospective identification of elderly at high risk for dementia in a multiethnic cohort.

Methods: 68 individuals with MCI (Petersens criteria; age: 75.35.9; education: 13.64.1) completed computerized cognitive assessment (Mindstreams, NeuroTrax Corp., NJ) at baseline and at 1-year follow-up. Independent groups t-tests were used to compare baseline data for MCIs with controls (N=56; age: 76.26.0; education: 13.53.7) and dementia patients (DSM-IV criteria; N=28; age: 80.06.0; education: 12.13.3) as well as between MCIs converting and not converting to dementia. Logistic regression was used to assess probability of conversion to dementia among the MCIs.

Results: MCIs at baseline performed more poorly than controls on the Verbal Memory test (VMT; p<0.001) and the Non-Verbal Memory test (NVMT; p<0.001), with larger effect sizes for VMT (raw: Cohens d=1.39; normalized: d=1.47) versus NVMT (raw: d=0.82; normalized: d=0.88). MCIs performed better than dementia patients (p<0.02), again, with larger effect sizes for VMT (raw: d=1.04; normalized: d=0.60) versus NVMT (raw: d=0.79; normalized: d=0.53). MCIs converting to dementia performed more poorly than those not converting on raw VMT (p=0.04) and NVMT (p<0.001) measures, with a larger effect size for NVMT (d=1.07) as compared

with VMT (d=0.68), but only the NVMT difference persisted (p=0.004; d=0.89 versus p=0.28; d=0.30 for VMT) after normalization for age and education. Similarly, univariate regression models indicated that NVMT (p=0.044) but not VMT (p=0.38) was significantly associated with probability of conversion to dementia.

Conclusions: Non-verbal memory performance may be particularly important in identifying MCI patients at high risk for dementia who would benefit most from early treatment.

D103

PATTERNS OF USE OF MENTAL HEALTH CARE: THE BALTIMORE EPIDEMIOLOGIC CATCHMENT AREA FOLLOW-UP.

H. F. de Vries,[1] P. K. Maulik,[2] J. Unützer,[3] H. R. Bogner.[1] *1. Family Medicine and Community Health, University of Pennsylvania, Philadelphia, PA; 2. Mental Health, Johns Hopkins University, Baltimore, MD; 3. Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA.*

Supported By: This work was supported by NIMH grant MH 47447. Dr. Bogner was supported by a NIMH mentored Patient-Oriented Research Career Development Award (MH67671-01) and an American Heart Association Grant-in-aid.

OBJECTIVE: To examine patterns of prior and current mental health services use among older adults. Examination of a recent cohort of older adults is important because patterns of utilization may have changed due to treatment advances, changes in mental health care services, and greater mental health awareness.

METHODS: We studied 1067 continuing participants with complete information on health services use in 1993 and in 2004 of the Baltimore Epidemiologic Catchment Area cohort. Separately, and before the mental health assessments were made, participants were asked about their use of health services. Cognitive status and physical health were assessed using standardized instruments. Mental disorders were assessed using the Diagnostic Interview Schedule.

RESULTS: Compared with adults aged 40 to 59 in 2004, adults aged 60 and older were less likely to report specialized mental health services versus general medical care without a mental health component (adjusted odds ratio (OR) = 0.28, 95% confidence interval (CI) [0.14, 0.56]). Multivariate models controlled for potentially influential characteristics including major depression or depression associated with recent bereavement, anxiety disorders, and past use of mental health services.

CONCLUSION: Adults 60 years and older are approximately a third as likely to consult a specialist in mental health compared to adults aged 40 to 59 years even accounting for other factors associated with differential use of services. Our study strengthens evidence that primary care remains pivotal for the treatment of psychiatric disorders in the elderly.

D104

Determinants of Initial Reductions in Drinking among Older At-Risk Drinkers Participating in the Intervention Arm of a Trial to Reduce At-Risk Drinking in Primary Care.

J. C. Lin,[1,2] M. P. Karno,[3] A. A. Moore.[2] *1. Special Fellowship in Advanced Geriatrics, VA GLA Healthcare System, Los Angeles, CA; 2. Medicine, David Geffen School of Medicine, UCLA, Los Angeles, CA; 3. Integrated Substance Abuse Programs, UCLA, Los Angeles, CA.*

Supported By: Supported By: National Institutes of Health.

Purpose: To describe differences between at-risk drinking older adults who reduced drinking and those who did not approximately two weeks after receiving initial intervention, and to determine factors associated with reduction in drinking behavior.

Methods: Intervention subjects in a randomized trial (N=310) completed questionnaires about demographic and drinking characteristics, and received personalized risk reports, booklets on alcohol-associated risks, and advice from their physicians. Within two weeks of that visit, they received first of up to 3 health educator (HE) calls. Among 239 subjects (77% of intervention group), the HE noted whether participants had already reduced drinking. We compared characteristics among those who had reduced drinking and those who had not, and examined factors associated with reducing drinking.

Results: 93 subjects (39% of analyzed subjects) had reduced drinking within 2 weeks of receiving intervention. Bivariate analyses showed that those who reduced drinking had fewer years of formal education, drank less alcohol and less frequently, were identified for fewer categories of risk, were more concerned about at-risk drinking, and had worse self-rated health status. More individuals who reduced drinking reported that their physicians both discussed risks and advised changes, and more of them read through the booklet on alcohol-associated risks. Multiple logistic regression showed increased odds of having reduced drinking with increasing age (OR 1.07, CI=1–1.14), higher rating of the importance of changing drinking behavior (OR 1.43, CI=1.2–1.71), physician discussing both risks and advising changes (OR 3.31 CI=1.53-7.16), and reading through the booklet (OR 2.82, CI=1.31-6.04). Previous attempt to reduce drinking (OR 0.41 CI=0.19-0.92) was associated with decreased odds of having reduced drinking.

Conclusions: Many at-risk older drinkers reduced drinking two weeks after initial intervention. Those who reduced drinking were older, thought change was more important, reported receiving physician advice, had read the educational booklet, and were less likely to have previously attempted to decrease drinking compared to those who had not reduced drinking.

D105

Hippocampal Atrophy in Subjects with Maternal History of Alzheimer Disease.

J. P. Andrawis,[1,2] K. S. Hwang,[1,2] A. E. Green,[1,2] A. Ramirez,[1] J. Kotlerman,[3] D. Elashoff,[3] J. H. Morra,[1] P. M. Thompson,[1,2] J. L. Cummings,[1,2] L. G. Apostolova.[1,2] *1. Laboratory of Neuroimaging, UCLA David Geffen School of Medicine, LA, CA; 2. Department of Neurology, UCLA David Geffen School of Medicine, LA, CA; 3. Division of General Internal Medicine and Health Services Research, UCLA David Geffen School of Medicine, LA, CA.*

Supported By: Study supported by: NIA K23 AG026803, NIA P50 AG16570, Turken Foundation, NIBIB EB008561, NIBIB EB01651, NLM LM05639, NCRR RR019771 and NIH RR021813. Mr. Andrawis was a participant of the MSTAR program funded by the Hartford foundation.

Background: Alzheimer disease (AD) invariably results in hippocampal atrophy. Family history of dementia increases one's risk for developing AD. Subjects with maternal (MH+) but not paternal (PH+) dementia history were recently reported to show reduced PET glucose uptake in AD-vulnerable brain regions.

Objective: To investigate whether MH+ associates with greater hippocampal atrophy compared to PH+ and no parental history of dementia (H-).

Methods: We applied a robust automated hippocampal segmentation technique based on adaptive boosting to the baseline and 1-year follow-up AD Neuroimaging Initiative (ADNI) 1.5 T MRI data of 245 subjects with mild cognitive impairment (MCI), 97 with AD and 150 cognitively normal (CN). 68 were PH+, 171 MH+ and 268 H-. Baseline and 1-year follow-up hippocampal volumes were extracted for statistical comparisons. We used multiple regression models to investigate the effects of MH+ and PH+ on hippocampal volume in follow-up while controlling for baseline volume.

Results: Subjects with MH+ were significantly younger (74.2 vs. 76.0 y, p=.003) and more educated (16.2 vs. 15.6 y, p=.025) relative to H-. There were no education and age differences between PH+ and H-. There were no differences in MMSE scores, gender, race or diagnostic breakdown between the three groups. All multiple regression models were corrected for age and education. MH+ was a significant predictor of hippocampal atrophy in the full sample (right hippocampus p=.006, left p=.042) and in MCI on the right (p=.004). MH+ showed trend-level significant association with hippocampal atrophy on the left in CN (p=.06). PH+ showed no statistically significant associations with hippocampal volume. History of dementia in either parent was a significant predictor of follow-up hippocampal volume on the right in the full sample (p=.014) and in MCI (p=.035).

Conclusions: As hypothesized, MH+ but not PH+ associates with significantly smaller hippocampal volume in subjects with normal cognition or those at risk for dementia of the Alzheimer's type.

D106

The Elderly in the Psychiatric Emergency Service: Is a Different Assessment Needed?

K. C. Diller,[1] R. Lamdan.[1,2] *1. Psychiatry, Temple University Hospital, Philadelphia, PA; 2. Psychiatry, Temple Univ. School of Medicine, Philadelphia, PA.*

PURPOSE: With the "graying" of America, the number of elderly using Psychiatric Emergency Services (PES) is expected to increase. Because medical problems in the elderly can manifest as psychiatric disorders, clinicians evaluating older adults in the PES must have a high index of suspicion for non-psychiatric causes of their presentations. In this pilot study, we examined how older adult PES patients differ from younger patients in presentation and the type of work-up received. The goal is to develop a geriatric assessment protocol for in the PES.

METHODS: With IRB approval, we performed a retrospective chart review of patients seen at our busy urban PES over a 3-year period. We selected 105 patients out of 463 patients aged 65 and older seen that period and matched them to patients aged 18-64 years seen on the same day. Clinical presentations, diagnoses, work-ups and outcomes were compared.

SUMMARY: Geriatric subjects were significantly more likely to present on an involuntarily commitment ($p<0.01$) and to present disoriented ($p = 0.03$) compared to our control patients. They were likely to have more medical diagnoses and to be on more non-psychiatric medications than controls. Older adults were more likely to present psychotic ($p<0.01$) or with cognitive impairments ($p<0.01$) and to be admitted to a psychiatric facility ($p<0.01$). Despite these differences, elderly patients were not more likely to be seen in the medical Emergency Department prior to or after presenting to the PES, nor were they more likely to receive a medical workup in the ED. Urinalysis was ordered for only 10 (9.5%) older adult subjects, and brain imaging was done on only 6 (5.7%). Surprisingly, documentation of cognitive evaluation was missing in many (45.7%) of the older adult evaluations, and in 27.6% there was no mention of orientation.

CONCLUSION: Further prospective comparisons are needed to make final recommendations for the emergency evaluation of the older adult in the PES, but our study shows that clinicians are skipping basic, inexpensive elements of such a workup such as cognitive testing and urinalysis. Residency training implications are discussed.

Walsh PG, et al: Psychiatric Emergency Services for the U.S. Elderly: 2008 and Beyond. Am J Geriatr Psych 2008; 16(9):706-717.

Borja B, et al: Psychiatric Emergencies in the Geriatric Population. Clinics in Geri Med 2007; 23:391-400.

D107 New Investigator Awardee

Using structural equation modeling to examine the relationship between problem behaviors and caregivers' well being: Results from triadic data.

L. Ayalon. *Bar Ilan University, Ramat Gan, Israel.*

Supported By: German Israeli Foundation, G.I.F. Young Investigator' s Award

OBJECTIVES: Neuropsychiatric symptoms (e.g., apathy, depression, agitation; NPS) are a common concern in the care of older adults. Clinicians usually rely on reports of formal (i.e., paid) and informal (i.e., family members and friends) caregivers when evaluating these symptoms. The majority of research to date, has focused on NPS as precipitators of burden and depression in caregivers, with only very few studies evaluating caregivers' characteristics associated with care recipients' NPS. The present study is unique because it evaluates several plausible relationships between formal and informal caregivers' characteristics and care recipients' NPS as reported by these caregivers. METHODS: Data consisted of 130 triads of care recipient, family member, live-in home care worker. Plausible models of the relationship between NPS and caregivers' characteristics were examined using structural equation modeling. RESULTS: The most plausible model suggested that family members' reports of care recipients' NPS are directly influenced by formal caregivers' reports of care recipients' NPS. Whereas the well being of formal caregivers impact their perception of care recipients' NPS, family members' well being does not impact their perception of care recipients' NPS. Chi-square of the overall model (28)=37.5, p=.10. An alternative model predicting caregivers' well being from care recipients' NPS demonstrated a poor fit. Chi-square (27)=40.8, p=.04. CONCLUSIONS: Clinicians should be aware of the important role caregivers' characteristics and well being play in the reports of NPS by both formal and informal caregivers.

D108

When Cognitive Evaluation Does Not Disclose a Neurologic Disorder: Experience of a University Behavioral Neurology Clinic.

M. C. Kenfield,[1] D. B. Arciniegas,[3,4] C. Anderson,[3,4] K. L. Howard,[2] C. M. Filley.[3,4] *1. University of Colorado Denver School of Medicine, Aurora, CO; 2. Neurology, University of Colorado Denver School of Medicine, Aurora, CO; 3. Neurology and Psychiatry, University of Colorado Denver School of Medicine, Aurora, CO; 4. Denver Veterans Affairs Medical Center, Denver, CO.*

Supported By: National Institute of Aging through the MSTAR (Medical Student Training in Aging Research) grant

Background: Cognitive decline is increasingly concerning for patients and their physicians, particularly given the high prevalence of Alzheimer's Disease (AD). The accurate early diagnosis of AD and other dementias is crucial, and appropriate resource use can optimize diagnostic efficiency and improve treatment.

Objective: To ascertain the outcome of cognitive evaluation in patients sent to a tertiary behavioral neurology clinic, and to analyze referral patterns and clinical characteristics of patients evaluated.

Methods: A retrospective review was conducted of 342 consecutive patients seen in consultation at the Neurobehavior Clinic of University of Colorado Hospital from July 2006 through June 2008. All patients had an initial diagnosis by a behavioral neurologist or neuropsychiatrist, and then a consensus diagnosis by DBA, CAA, and CMF.

Results: Among the 342 patients, 68% had a neurologic disorder, the most common of which was probable AD (17%). The remainder had non-neurologic diagnoses: 20% had a psychiatric diagnosis, 7% were considered normal, and 5% had a medical diagnosis. Of those with non-neurologic diagnoses, 65% were referred by primary care providers, and the most common symptom was memory loss (72%). In the psychiatric subgroup, depression was the most fre-

quent diagnosis (56%). Concern about cognitive decline was present in all normal individuals. In the medical subgroup, medication effect was the most frequent diagnosis (50%).

Conclusion: Whereas probable AD was the most common neurologic diagnosis, 32% of referred patients had no neurologic disorder. These results highlight the opportunity for primary care intervention that can obviate the need for subspecialty referral in many cases.

D109

Missed Opportunities: Nursing Home Providers' Ability to Identify and Recognize Depressive Symptoms.

D. Lo,[1] M. A. Paniagua,[2] D. R. Thomas.[2] *1. Saint Louis University School of Medicine, Saint Louis, MO; 2. Internal Medicine, Division of Gerontology & Geriatric Medicine, Saint Louis University School of Medicine, Saint Louis, MO.*

Supported By: Daphne Lo is funded by the American Federation for Aging Research Medical Student Training in Aging Research (MSTAR) Program. Dr. Paniagua is funded by the Bureau of Health Professions Health Resources and Services Administration's Geriatric Academic Career Award (GACA).

OBJECTIVE: To evaluate nursing home providers' (NHP) knowledge of depressive symptoms and ability to identify depression in nursing home patients.

METHOD: 63 providers from four affiliated nursing homes completed a survey detailing level of education, normal shift worked, and percentage of patients within their care diagnosed with dementia. Each NHP was asked to indicate their comfort in identifying depression in nursing home residents, and to identify three symptoms of depression in elders residing in nursing homes. The survey also asked each NHP to identify depression from a series of case scenarios.

RESULTS: We compared demographic information, symptoms of depression listed by NHPs, and answers to the case scenarios to symptoms of depression defined in standard depression screening tools.

A negative correlation existed between education and NHPs' ability to identify depression cases from the cases. In CNA's, there was a positive correlation (Pearson's R: .506, p=.012) between their ability to identify depression cases and their ability to identify depression symptoms on the GDS. RN's were less able to correctly identify a depression case despite identifying more items on the GDS (Pearson's R: -.764, p=.046).

Negative correlations were found with every experience level with most unable to correctly identify a case of depression despite identifying more symptoms of depression from the GDS (Pearson's R: -.764, p=.046) or CDS (Pearson's R: -.766, p=.045 and Pearson's R: -.693, p=.038 for most experienced).

A positive relationship existed between those who classified their level as "somewhat comfortable" recognizing depression and their ability to correctly list 0-3 symptoms of depression (as listed in the CDS) and correctly identify a case scenario as depression (Pearson's R: .390, p=.044).

CONCLUSION: There is no clear relationship between NHP's ability to identify symptoms, education, comfort level, or their experience with their ability to correctly identify depression. Most were unable to identify cases of depression from the scenarios presented indicating a lack of knowledge about depression. In the future, design and testing of an education program aimed at teaching NHPs about the prevalence, presentation and identification of depression in nursing home elders is warranted.

D110

Do patients with bilateral symptoms of Parkinson's Disease (PD) receive appropriate bone prophylaxis?

P. Goldsmith,[1] D. Forsyth.[2] *1. School of Clinical Medicine, University of Cambridge, Cambridge, United Kingdom; 2. Department of Medicine for the Elderly, Addenbrooke's Hospital, Cambridge, United Kingdom.*

Patients with Parkinson's disease (PD) are at risk of falling and therefore of fracture. The likelihood of fracture will be highest in those with bilateral symptoms who often have multiple risk factors for osteoporosis (OP). We undertook an audit to assess the quality of bone prophylaxis prescribing for such PD patients.

A total of 98 patients attending our PD clinics, or having an inpatient admission, were identified with bilateral PD. Their notes were then screened for falls, fractures, OP risk factors and prescription of bone prophylaxis.

Significant risk of OP was defined as having three or more of the following: post-menopausal female, breast cancer, current smoker, reduced weight bearing, nutritional deficiency, reduced sunlight exposure, BMI <19 Kg/m2, hyperthyroidism, family history, low testosterone in men, alcohol consumption of >3units per day and medications (long-term steroids, thyroxine, SSRIs, heparin, methotrexate, anti-epileptics, aluminium containing antacids, aromatase inhibitors and diuretics).

Overall 54% of PD patients were appropriately prescribed bone prophylaxis. 46% of PD patients received bone prophylaxis following a fracture. 17% on long-term oral steroids and none with concomitant rheumatoid arthritis received appropriate bone prophylaxis. 62% of PD patients with significant risk factors for OP were treated with calcium and vitamin D. 100% of patients with osteoporosis confirmed by DEXA scan were prescribed bone prophylaxis.

In conclusion, there is considerable room for improvement in the prescribing of bone prophylaxis in PD patients at risk of falling or with risk factors for OP. The multi-disciplinary Parkinson's team should pay more attention to the importance of bone health; improve their assessment of falls and OP risk; and be more assiduous in their prescribing of bone prophylaxis. It is hoped that the implementation of these recommendations will help to reduce the risk of a patient with bilateral PD sustaining a fracture following a fall.

D111

The Effect of Systolic Blood Pressure and Pulse Pressure on Cognitive Function: The Women's Health and Aging Study II.

S. Yasar,[1,2] J. Y. Ko,[3,2] M. M. Mielke,[4,2] P. H. Chaves,[1,2] M. C. Carlson.[3,2] *1. Medicine, Johns Hopkins University, Baltimore, MD; 2. Center of Aging and Health, Johns Hopkins University, Baltimore, MD; 3. Department of Mental Health, Johns Hopkins University, Baltimore, MD; 4. Department of Psychiatry, Johns Hopkins University, Baltimore, MD.*

Supported By: This study was supported in part by NIH grants RO1 AG19825-02 and RO1 AG11703-10 from the National Institute on Aging, National Institutes of Health.

Background: Hypertension has been extensively studied as a major vascular risk factor for cognitive decline and dementia in older community-dwelling populations. While the majority of studies examine global cognitive function, few studies have focused on the effect of blood or pulse pressure on memory and executive function. Purpose: To evaluate the relationships between baseline systolic blood pressure (SBP) and pulse pressure (PP), and changes in domains of cognitive ability in the Women's Health and Aging Study II. Methods: 436 non-demented, community-dwelling women over the age of 70 participated. The were screened to be physically high-functioning and cognitively intact at baseline. Cognitive assessment included Trail Making Test, Parts A (TMT-A) and B (TMT-B), Hopkins Verbal Learning Test-Revised, and Mini-Mental State Examination (MMSE). Generalized Estimating Equations (GEE) analysis was used to evaluate associations between baseline SBP and PP, and 9-year changes in cognition. Covariates included age, education, race, vascular disease, depression, and blood pressure-lowering medications. Results: In multivariate analyses, baseline elevated PP was associated with poorer performance on TMT-B HR=0.97 [95% CI 0.94; 0.99; p=0.03]. Additionally, higher SBP was associated with poorer performance on a variable using both TMT-B and HVLT-Delayed Re-

call HR=0.96 [95% CI 0.94; 0.99; p=0.03]. Conclusion: Higher baseline PP levels predicted poorer performance on executive function, but not on memory or psychomotor speed in this population of older women. This association also suggests that PP may be a more sensitive predictor of cognitive decline than SBP. Additionally, using a variable of both TMT-B and HVLT-Delayed Recall, a concurrent measurement of executive function and memory, also predicted poorer performance on SBP,indicating that this concurrent measurement of executive function and memory maybe a more sensitive measure to evaluate cognitive function. Future research is warranted to examine how elevated BP over the lifespan, variously measured, is associated with important domains of cognition, such as memory.

D112

Walking and Eight-Year Incident Depressive Symptoms: The Honolulu-Asia Aging Study.

T. L. Smith,[1] K. Masaki,[1,2] K. Fong,[2] R. Abbott,[2,1] G. Ross,[4,1] H. Petrovich,[2,1] P. Blanchette,[1] L. White.[1,3] *1. Geriatric Medicine, Univerisity of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI; 4. Department of Veterans Affairs, Honolulu, HI.*

Supported By: The John A. Hartford Center of Excellence in Geriatrics, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; Honolulu Department of Veterans Affairs; National Institute on Aging.

Background: Associations of greater physical activity with fewer depressive symptoms have been reported from cross-sectional and longitudinal studies. However, there are few data in elderly populations. We studied the association between physical activity and 8-year incident depressive symptoms in elderly Japanese-American men.

Methods: The Honolulu-Asia Aging Study is a continuation of the Honolulu Heart Program, a longitudinal population-based study of Japanese-American men in Hawaii. At the 4th exam in 1991-93, 3734 men aged 71-93 years were examined. Physical activity was assessed by self-reported distance walked per day. Depressive symptoms were measured with an 11-question version of the Centers for Epidemiologic Studies Depression Scale (CES-D) at the 4th exam (n=3196) and again at the 7th exam 8 years later (1999-2000, n=1417). Presence of depressive symptoms was defined as CESD-11 score ≥ 9 or taking anti-depressants. Those with prevalent depressive symptoms were excluded from the incidence analysis.

Results: Incident depressive symptoms were present in 9.8% of men. Age-adjusted 8-year incident depressive symptoms were 13.6%, 7.6% and 8.5% for low (< ¼ miles/day), intermediate (¼ to 1.5 miles/d) and high (> 1.5 miles/day) walking groups at baseline, p=0.008. Multiple logistic regression analyses were adjusted for age, education, marital status, BMI, hypertension, diabetes, alcohol, smoking status, prevalent coronary heart disease, stroke, cancer, Parkinson's disease, dementia or cognitive impairment and functional impairment. Compared to the lowest walking group (reference), those in the intermediate and highest walking groups had significantly lower odds for developing 8-year incident depressive symptoms (OR=0.52; 95% CI=0.32-0.83, p=0.006; and OR=0.61; 95% CI=0.39-0.97, p=0.04 respectively). Stratified analysis found this association was stronger in those who were healthy at baseline (defined as no chronic diseases like CHD, CVA, Cancer, PD, Dementia and Cognitive Impairment).

Conclusion: Daily physical activity, even low level activity such as walking, is strongly associated with a lower risk for development of depressive symptoms over 8 years in elderly Japanese-American men, especially among those who do not have chronic diseases.

D113

The Impact of Neuropsychiatric Symptoms on Functional Status and Institutionalization.

T. Okura,[1,2] K. M. Langa.[1,3] *1. Medicine, University of Michigan Health System, Ann Arbor, MI; 2. GRECC, VA Ann Arbor Healthcare System, Ann Arbor, MI; 3. HRS&D, VA Ann Arbor Healthcare System, Ann Arbor, MI.*

Supported By: The National Institution on Aging provided funding for the HRS and the ADAMS (U01 AG09740).

(Purpose) Neuropsychiatric symptoms (NPS) are common among elderly with cognitive impairment, and may be associated with caregiver distress and institutionalization. We examined whether particular NPS were associated with worse functional status and earlier institutionalization, and whether caregiver depression modified the relationship between NPS and institutionalization in a nationally representative sample of US elderly.

(Methods) We used data from the Health and Retirement Study (HRS), a nationally representative population-based longitudinal survey of about 20,000 US adults, and the Aging, Demographics, and Memory Study (ADAMS), a sub-study of the HRS focused on cognitive impairment (N=856, mean age=81.5). From the ADAMS, we obtained: 1) the presence of NPS (delusions, hallucinations, agitation, depression, apathy, elation, anxiety, disinhibition, irritation, and aberrant behaviors); 2) the number of ADL / IADL difficulties; and 3) Caregiver depression with the CES-D Scale. Institutionalization was ascertained using 5 years of follow-up data from the HRS. Additional measures were sociodemographic characteristics, cognitive function, medical comorbidity, and relevant medications.

(Results) Most NPS were associated with worse cognitive function and more significant caregiver depression. Using ordered logistic regression in a cross-sectional analysis, we found those with agitation had more difficulty performing both ADLs and IADLs compared to those without agitation (adjusted OR 2.61; 95%CI 1.18-5.75, and adjusted OR 4.86; 95%CI 1.52-15.5, respectively). Using Cox proportional hazards regression, we found agitation was associated with earlier nursing home admission even after adjusting for ADL/IADL limitations (adjusted HR 4.56; 95%CI 1.58-13.1). Caregiver depression was independently associated with earlier institutionalization (adjusted HR 1.81; 95%CI 1.09-3.00), but did not significantly modify the association of agitation and earlier institutionalization.

(Conclusion) In a nationally-representative sample of older US adults, agitation was associated with worse functional status and earlier institutionalization. Caregiver depression may increase the likelihood of institutionalization. Comprehensive assessment to identify agitation, its possible causes, and a caregiver depression may help to delay institutionalization.

D114

The Impact of Cognitive Impairment on Glycemic Control in Diabetics.

T. Okura,[1,2] K. M. Langa,[1,3] M. Heisler.[1,3] *1. Medicine, University of Michigan Health System, Ann Arbor, MI; 2. GRECC, Ann Arbor VA Healthcare System, Ann Arbor, MI; 3. HRS&D, Ann Arbor VA Healthcare System, Ann Arbor, MI.*

Supported By: The National Institution on Aging provided funding for the HRS and the 2003 Diabetes Study (U01 AG09740).

(Purpose) Effective self-management of diabetes (DM) often requires the coordination of multiple daily tasks requiring complex cognitive functioning. We examined whether cognitive impairment was associated with worse glycemic control and whether this relationship was modified by a level of social support and depressed mood.

(Methods) We performed a cross-sectional analysis of data from the 2003 Health and Retirement Study (HRS) Mail Survey on Diabetes and the 2004 wave of the HRS (N=1,901, mean age=69.7). The HRS is a nationally representative longitudinal study of more than

20,000 US adults. Cognitive function was assessed using the 35 point HRS cognitive scale (HRS-cog). We characterized level of cognitive impairment by quartile of the score. From the Mail Survey, we obtained: 1) Hemoglobin A1c level (<7.0, 7.0-7.9, ≥8.0); and 2) DM-related social support, the level of help for daily DM care that individuals reported receiving from family and friends. Additional measures were sociodemographic characteristics, duration of DM, depressive symptoms, and self-reported understanding score of DM knowledge.

(Results) Using ordered logistic regression, we found those with HRS-cog scores in the lowest quartile had significantly higher A1c levels compared to those in the highest cognitive quartile (adjusted OR 1.74; 95%CI 1.00-3.03), and this association was modified significantly by the level of social support (adjusted OR 0.86 for individuals in the lowest cognitive quartile who had the highest level of social support, and 2.36 for those with the lowest level of social support, P-value for interaction 0.046). Depressed mood was associated with higher A1c level independently (adjusted OR 1.95; 95%CI 1.04-3.66 for moderate/severe depression); however, level of depressive symptoms did not significantly modify the association between cognitive impairment and glycemic control.

(Conclusion) In a nationally-representative sample of US adults, we found cognitive impairment was associated with worse glycemic control, but a high level of social support appeared to ameliorate this negative relationship. A comprehensive assessment aimed at identifying the presence of cognitive impairment, depressive symptoms, and level of social support may help to identify older adults with DM who are at risk for poor glycemic control.

D115

Risk factors for *Clostridium difficile* infection in Nursing Homes(NHs) settings.

A. Berling,[3] N. Hossain,[1,2] L. Mody.[1,2] *1. Division of Geriatrics, University of Michigan Health System, Ann Arbor, MI; 2. GRECC, VA Ann Arbor Healthcare System, Ann Arbor, MI; 3. Geriatrics, Harvard Medical school, Boston, MA.*

Background: *C.difficile* infections are increasing in incidence and severity accounting for resistant & recurrent disease. However, little data exists regarding the epidemiology of new *C.difficile* infection in community NHs and clinical findings that differentiate *C.difficile* associated diarrhea from diarrhea due to other causes. **Aims**: To explore the frequency of clinical findings, epidemiology and complication of new and recurrent *C.difficile* infection in NHs; **Design**: A retrospective case control study. Cases: Residents with diarrhea and documented infection, based on a positive toxin A/B or cytotoxicity assay, between March 1, 2005 & November 30, 2006, residing in five NHs in SE MI. Controls: residents who had diarrhea without a positive stool sample. Demographic data as well as the number of recent hospitalization, type & duration of antibiotics, physical exam, laboratory & radiology findings, patient outcome, including transfer to hospital & death were gathered. **Results** :A total of 40 cases & 19 controls were identified at five NHs. There was no significant difference in age, gender, or mean length of stay between the cases and controls. The mean age was 75.9 for cases & 78.7 years for controls. The average length of stay was 11.1 months for cases & 16.6 months for controls. Cases were more likely to have had a hospital stay in the prior 60 days (OR ratio 4.6, CI 1.4-15, p=0.01) compared with cases. In addition, cases were more likely to use antibiotics prior to their *C.difficile* infection compared with controls (OR 5.1, CI 1.2-23, p=0.01). However, there was no significant difference in any clinical or laboratory findings between cases & controls. Twenty two percent of *C.difficile* patients demonstrated relapse or reinfection. Seventeen percent of cases died at the end of study while there was no death in controls. **Conclusion**: The data suggest no difference in clinical findings among patients with diarrhea with or without *C.difficile infection*. Prior hospitalization and antibiotic usage, are more frequent among *C.difficile* patients. Relapse and reinfection with *C.difficile* are common in these residents.

D116

Ultrasevere Obstructive Sleep Apnea: Characterization of Patients with Apnea-Hypopnea Indices > 60 Events/Hour.

P. P. Samson,[1] J. Knepler,[2,1] R. Panos.[2,1] *1. Medicine, University of Cincinnati, Cincinnati, OH; 2. Pulmonary, Critical Care & Sleep Medicine, Cincinnati VAMC, Cincinnati, OH.*

Supported By: AFAR MSTAR grant

Background: Obstructive sleep apnea (OSA) with daytime hypersomnulence increases in prevalence from 4% of men aged 30-60 to 37.5% for men over age 60. Clinical stratification of patients with OSA is currently based on the apnea-hypopnea index (AHI). AHI categories include mild (5-15 events per hour), moderate (15-30) and severe (>30), but stratification of disease burden in the severe category is unknown. **Purpose**: Patients with ultrasevere OSA (AHI >60) have not been well studied. We **hypothesized** that ultrasevere patients would demonstrate different characteristics and treatment response than those with an AHI 30-60. **Methods:** A retrospective study was completed of 596 patients undergoing polysomnography with CPAP or BIPAP titration at the Cincinnati Veterans Affairs Medical Center, Cincinnati, OH between 2/2005 and 12/2007. AHI was examined both as a continuous variable and in discrete categories, defining severe as an AHI 30-60 and ultrasevere >60. Data abstracted from files included demographics, medical history, polysomnography results, and compliance with therapy. Differences between the categorical OSA groups and numerical variables were analyzed using one way ANOVA with Bonferroni correction. Categorical variables were analyzed using chi-squared analysis with the Marascuillo procedure for multiple comparisons. **Results:** 18.8% of our population had an AHI >60. Ultrasevere patients had a significantly lower pre-treatment minimum O2 saturation compared to severe patients (75.8 ± 10.4% vs. 81.4 ± 6.8%, $p<0.05$) as well as a higher BMI (38.8 ± 10.0 vs. 35.7 ± 6.2, $p<0.05$). Ultrasevere patients tended to demonstrate better treatment compliance then severe patients (52% vs. 43%) and were more likely to report excellent improvement after treatment (15% vs. 10%). When examined as a continuous variable, there were significant correlations between AHI and REM-related AHI ($r=0.40$, $p<0.0001$), neck circumference ($r=0.18$, $p=0.004$), ESS ($r=0.18$, $p=0.002$), CPAP level ($r=0.34$, $p<0.0001$) and BIPAP level ($r=0.35$, $p=0.0003$). **Conclusions:** Stratifications of clinical characteristics and disease do occur in the current category of severe sleep apnea (AHI > 30). Our data indicates that stratification within the current severe category of OSA is needed to prevent the further sequlae that OSA can impart on patients health and quality of life.

D117

Home-based cognitive therapy for urge incontinence.

S. A. Abbasy,[1] A. Michelfelder,[2] K. Kenton,[1] E. R. Mueller,[1] M. FitzGerald.[1] *1. Department of Obstetrics and Gynecology, Division of Female Pelvic Medicine and Reconstructive Surgery, Loyola University Medical Center, Maywood, IL; 2. Department of Family Practice, Loyola University Medical Center, Maywood, IL.*

Supported By: This study was funded by Loyola University Medical Center's Department of Obstetrics and Gynecology

Urge incontinence may result when there is loss of central control by the prefrontal cortex over bladder function. The objective of this pilot study is to determine whether a home-based cognitive therapy program using an audio recording decreases the number of urge incontinence episodes and improves quality of life in urge incontinence patients.

Patients were eligible to participate if they had urinary urge incontinence at least 7 times per week, and were stable on all bladder treatments for the past 3 months. Patients attended one physician office visit to be introduced to cognitive therapy and then listened to a 15-minute audio recording twice a day for two weeks. Weeklong pre and post-therapy diaries and validated urinary questionnaires were

completed. Analysis was done with SPSS Version 16 using the paired Mann-Whitney test.

10 patients participated in this pilot study. The mean age was 62 (range 40 to 81). Six of the 10 patients were concurrently taking anticholinergic medications. The mean number of urge incontinence episodes per week decreased from 38 (20 to 56) to 12 (0 to 45), p = 0.005. Table 1 details the pre- and post-treatment scores on validated urinary symptoms scales.

Cognitive therapy appears to be an efficacious treatment option for treatment of urge incontinence. Cognitive therapy may play a role in a multipronged approach to treating this disorder.

Table 1: Mean pre- and post-therapy scores from the Incontinence Impact Questionnaire-Short Form (IIQ-7), Urinary Distress Inventory Short Form (UDI-6), Urgency Symptom Severity and Quality of Life (USIQ) symptoms and quality of life subscales, Medical, Epidemiological, and Social Aspect of Aging incontinence questionnaire (MESA) urge incontinence subscale

	Pre-therapy	Post-therapy	p value*
IIQ-7	56 (19-95)	34 (0-100)	.028
UDI-6	60 (33-83)	41 (0-79)	.024
USIQ symptoms	72 (45-95)	50 (5-95)	.014
USIQ quality of life	43 (19-72)	24 (0-63)	.021
MESA urge incontinence	11 (4-17)	8 (0-14)	.050

*** p value denotes the significance of the paired Mann-Whitney tests comparing pre- and post-treatment values.**

D118

CHARACTERISTICS OF EOSINOPHIL AND NEUTROPHIL INFLAMMATORY MEDIATORS IN OLDER ASTHMA SUBJECTS.

S. Nyenhuis, E. A. Schwantes, S. K. Mathur. *Medicine, Section of Allergy, Pulmonary, and Critical Care, University of Wisconsin, Madison, WI.*

Supported By: Glaxo Smith Kline (GSK) Fellows Career Development Award

AMA Seed Grant

T. Franklin Williams Scholars Program (SM)

Atlantic Philanthropies

AAAAI (American Academy of Allergy, Asthma, and Immunology)

John A. Hartford Foundation

ASP (Association of Subspecialty Professors)

RATIONALE: We have previously shown differences in eosinophil effector functions in vitro and sputum neutrophil levels in young and older asthma subjects. We sought to characterize eosinophil and neutrophil inflammatory mediators involved in the pathogenesis of asthma, in young and older asthma subjects at baseline disease.

METHODS: Human subjects with mild to moderate asthma between the ages of 20-40 (younger) and 50-70 (older) were recruited. Baseline characterizations of lung function and sputum analysis were performed. Purified eosinophils and neutrophils stimulated with calcium ionophore were evaluated by ELISA for leukotriene C4 (LTC4), eosinophil derived neurotoxin (EDN), and leukotriene B4 (LTB4) production. The sputum was analyzed for cysteinyl leukotrienes, LTB4, EDN, and neutrophil elastase (NE) levels.

RESULTS: Sputum analysis revealed no difference in the percentage of eosinophils between both age groups but a trend (p=0.08) towards a higher percentage of neutrophils in older asthma subjects was found. In vitro LTC4, EDN, and LTB4 production in calcium ionophore stimulated eosinophils and neutrophils were comparable in both age groups. Sputum analysis revealed no differences in EDN or cysteinyl leukotriene production. However, there was a trend (p=0.12) for higher NE levels and significantly lower levels (p=0.02) of LTB4 in the sputum of older asthma subjects.

CONCLUSIONS: Eosinophils and neutrophils in older asthma subjects are capable of comparable leukotriene production in vitro. Despite a higher percentage of sputum neutrophils in older asthma subjects, a decreased level of LTB4 and increased level of NE was found in vivo suggesting that specific age-related regulation of neutrophil function is occurring in the airway.

D119

Highest Quartile of White Blood Cell Count Predicts Eight-Year Incident Stroke: The Honolulu Heart Program.

T. L. Ching,[1] C. Bell,[1] R. Chen,[2] G. Ross,[4,1] J. Popper,[3] P. Blanchette,[1] B. Rodriguez,[1,2] D. Curb,[1,3] K. Masaki.[1,2] *1. Geriatric Medicine, University of Hawaii, Honolulu, HI; 2. Pacific Health Research Institute, Honolulu, HI; 3. Kuakini Medical Center, Honolulu, HI; 4. Department of Veterans Affairs, Honolulu, HI.*

Supported By: The Hawaii Medical Student Training in Aging Research (MSTAR) National Training Center (NIA, John A. Hartford Foundation and AFAR grant); The John A. Hartford Foundation Center of Excellence in Geriatrics, Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii; Pacific Health Research Institute; Kuakini Medical Center; Honolulu Department of Veteran Affairs; National Institute on Aging; National Heart, Lung, and Blood Institute.

Background: Previous studies have found that inflammation is associated with atherosclerosis and stroke. We studied the association of white blood cell (WBC) count, a marker of inflammation, and prevalent and 8-year incident stroke.

Methods: The Honolulu Heart Program is a prospective population-based cohort of Japanese-American men in Hawaii, established in 1965. At exam 4 (1991-93), participants were 3,741 men ages 71-93 years. WBC count was measured as part of a complete blood count using a Coulter counter machine in 3,569 subjects. Subjects were divided into quartiles of WBC for analysis: mean WBC values were 4.4, 5.5, 6.5 and 8.6 from lowest to highest quartile, respectively. Eight years of follow-up data for incident stroke (through December 1999) were available. Those with prevalent stroke were excluded from the incidence analyses. Analyses were adjusted for age, hypertension, diabetes, smoking status, BMI, physical activity, cholesterol, and alcohol consumption.

Results: Prevalence of stroke increased significantly by WBC quartiles (2.7%, 3.2%, 5.4%, 6.3%, p=0.0004). Age-adjusted rates of 8-year incident stroke increased significantly with WBC quartiles (10, 10.5, 11.3, 16.2 per 1000 person years follow-up, p=0.004). Using multiple logistic regression, prevalent stroke was not significantly associated with WBC quartiles after adjusting for age and cardiovascular risk factors. Using Cox regression, those in the highest quartile of WBC had a borderline association with incident stroke compared to the lowest quartile (RR=1.41, 95% CI=0.97-2.07, p=0.08). Stratified analyses found that the highest quartile of WBC was significantly associated with an increased risk for incident stroke in diabetics (RR=1.82, 95% CI=1.11-2.98, p=0.02), ever smokers (RR=1.63, 95% CI=1.00-2.66, p=0.05), and men with cholesterol >190 (RR=1.81, 95% CI=1.06-3.09, p=0.03).

Conclusion: Those in the highest quartile of WBC had a borderline independent association with incident stroke in elderly Japanese-American men. This relationship was stronger among diabetics, ever

smokers, and those with higher cholesterol levels. High WBC may be useful to identify those at risk for stroke among subgroups with cardiovascular risk factors.

D120

Lactoferrin for the prevention of C. difficile associated diseases.

A. Laffan,[1] R. McKenzie,[2] J. Fonti,[3] D. Conklin,[3] R. Marcinko,[3] W. Greenough.[3] *1. Epidemiology, Johns Hopkins University, Baltimore, MD; 2. Infectious Diseases, Johns Hopkins University, Baltimore, MD; 3. Geriatric Medicine, Johns Hopkins University, Baltimore, MD.*

Supported By: This study was sponsored by Ventria BioScience, the manufacturer of the lactoferrin flush solution.

C. difficile associated diarrhea (CDAD) is a common source of morbidity in nursing homes and hospitals. Ironically, this antibiotic-associated infection is treated with antibiotics. A recent study of children in Peru showed that an oral rehydration solution enriched with lactoferrin reduced diarrhea. The current study piloted lactoferrin administration for the prevention of diarrhea and C. difficile infection in a population of tube-fed nursing home patients.

In a double-blind trial 30 participants were randomized to receive 8-weeks of a flush solution containing lactoferrin or a placebo. Those eligible for enrollment were long-term care patients with enteral feeding tubes starting a new course of antibiotics. Participants were monitored continuously for diarrhea, defined as 2 or more stools conforming to the shape of a container in a 24-hour period.

Stool data for 22 participants were analyzed (13 control and 9 lactoferrin). The remaining 8 participants were exited from the study because they were colonized with C. difficile at enrollment. Fewer patients in the lactoferrin group experienced diarrhea (4/9; 44.4%) compared to the control group (12/13; 92.3%, p = 0.023 Fisher's Exact Test). Comparisons of the number of diarrhea days (control: 9.3 vs. lactoferrin: 4.0 days, p = 0.13 t-test) and percent of study days with diarrhea (control: 17.1% vs. lactoferrin: 8.0%, p=0.17 t-test) show a trend towards more diarrhea in the control group. Overall during the study period 5 participants (2 control, 3 lactoferrin) became infected with C. difficile (positive for C. difficile antigen and toxins) and of these participants 2/2 in the control group and 1/3 in the lactoferrin group experienced diarrhea.

Patients receiving a flush solution containing lactoferrin were less likely to experience diarrhea over an 8-week period compared to a control group. Further, small differences in number of diarrhea days and percent study time with diarrhea suggest lactoferrin may reduce diarrhea in this group of patients at high risk for C. difficile associated disease. However, the study sample was small and statistical comparisons between patients who became infected with C. difficile were not possible. A larger study is needed to test the effectiveness of lactoferrin for the prevention of CDAD.

D121

Relationship of Daily Physical Activity to Physical Function in Older Overweight Adults.

B. Nicklas,[1,2] G. D. Miller,[2] C. Davis,[1] X. Wang,[1] C. Legault,[1] S. P. Messier.[2] *1. Section on Gerontology and Geriatric Medicine, Wake Forest University, Winston-Salem, NC; 2. Health and Exercise Science, Wake Forest University, Winston-Salem, NC.*

Supported By: NIH R01 AR052528

Aging is associated with a decline in physical function, but whether this is the result of less physical activity with age, or is an inevitable consequence of aging per se, is not clear. Our purpose was to determine whether the average daily level of physical activity is an independent predictor of lower-extremity function in older individuals with knee osteoarthritis. Daily physical activity (both activity calories and steps) was measured using an accelerometer worn for at least 5 days of the week. Measures of function included the Short Physical Performance Battery (SPPB; a global measure of lower-extremity function), 6-min walk distance (a measure of endurance), and self-reported (WOMAC) function, pain and stiffness. Present analyses were from baseline data collected in a subset (n=84 of 225) of older (68±7 yrs), overweight/obese (BMI 25-40 kg/m2) men and women with radiographic evidence of knee osteoarthritis. Means and SDs for physical function and activity variables were as follows: SPPB=10.4±1.6; 6-min walk distance=465±87 m; activity calories=213±116 kcal/day; steps=5682±2633. As expected, older age was associated with lower SPPB, and 6-min walk distance ($p<0.05$). In pair-wise correlation analyses, activity calories and number of steps were negatively correlated with age, but positively correlated with SPPB and 6-min walk distance (table). Daily physical activity was not related to WOMAC function or pain, but those reporting more stiffness had lower activity (r=0.23, p=0.03). After controlling for age, the relationships between SPPB and calories (partial r=0.19) or steps (partial r=0.20) were no longer significant; however, 6-min walk distance remained correlated with activity calories (partial r=0.40) and steps (partial r=0.42). These data from older, obese arthritis patients show that lower daily physical activity is associated with poorer functional endurance independent of age. Thus, identifying strategies to overcome aging-related declines in daily physical activity should delay aging-related loss of functional endurance.

Pearson Corr. Coeffs.	Activity Calories		Steps	
	r	p value	r	p value
Age (yrs)	-0.28	0.01	-0.25	0.02
SPPB	0.26	0.04	0.27	0.03
6-min walk distance (m)	0.45	<0.001	0.46	<0.001

D122

Barriers to Hand Hygiene in Nursing Homes.

M. S. Ashraf,[1] S. W. Hussain,[2] M. Rivera,[3] N. Agarwal,[4] G. El-Kass,[1] E. George-Saintilus,[7] R. Hussain,[5] N. Mathew,[5] R. Pekmezaris,[6,1] C. Charles,[5] B. Edwards,[1] G. Alano,[1] B. Louis,[1] G. P. Wolf-Klein.[6,1] *1. North Shore-LIJ Health System, New Hyde Park, NY; 2. Mayo Clinic, Rochester, MN; 3. Akron General Medical Center, Akron, OH; 4. Loyola University, Chicago, IL; 5. Krasnoff Quality Management Institute, Great Neck, NY; 6. Lorber Center for Advancement of Medical Education, New Hyde Park, NY; 7. Destin Healthcare and Rehabilitation Ctr, Ft. Walton Beach, FL.*

Background: Individual perceptions, professional education and practical limitations of healthcare settings are known to impact on hand hygiene in hospitals and ambulatory care centers. Yet, no similar data is available for long term care facilities in the US. This study focuses on hand hygiene practice among nursing homes employees.

Methods: We developed a survey, based on the 2002 CDC guidelines, to determine nursing home employees' knowledge of the current recommendations for hand hygiene and self-perceived compliance and barriers. Data analysis was primarily descriptive; for categorical variables either Chi-squared or Fisher Exact tests were used; for continuous variables, either t-tests or analysis of variance (ANOVA), were used.

Results: Surveys were distributed in 12 nursing homes in 5 states. A total of 947 subjects responded and were grouped in certified nursing assistants (CNAs) (33.8%), nurses (30.3%) and others (35.8%). Only 291 (31%) subjects scored over 90% on knowledge of current guidelines. Half (59.8%) reported not washing hands when they just went into patients' room to talk, 21.9% when they wore gloves, 27.9% when the patient needed immediate medical attention, and 13.1% when patients didn't have serious medical problems. In addition, 19.5% recognized forgetting to wash hands when busy and many blamed absence of alcohol-based product (28.1%), soaps and

towels (15.9%) or sinks nearby (15.1%). Overall, the three groups were different in identifying barriers (p<.001). Nurses were more likely than CNAs to omit washing their hands if they "just" spoke to patients (70.1% v. 48.9%, p<.001), to report lack of alcohol based rub nearby (30.4% v. 16%, p<.001) and to forget to wash their hands when they were too busy (33.7% v. 22%, p=.002).

Conclusion: In 2002, the CDC encouraged the need for future research to assess the key determinants of hand hygiene behavior among healthcare workers. Our data underlines the need to facilitate practice improvement programs in long term care geared towards minimizing the barriers identified by nursing home employees.

D123

Incidence of Inadvertent Vaccination with Pneumovax 23 in Elderly Patients.

J. Park,[1] H. Silverman,[1] E. Chang,[1] M. S. Ashraf,[1] R. Hussain,[3] N. Mathew,[3] G. P. Wolf-Klein.[2,1] *1. NSLIJ Health System, New Hyde Park, NY; 2. Lorber Center for Medical Education, New Hyde Park, NY; 3. Krasnoff Quality Mgt Institute, Great Neck, NY.*

Background: The CDC (Center for Disease Control) has identified pneumococcal pneumonia as the leading "vaccine preventable" killer in the United States. Administration of Pneumovax 23 (pneumococcal vaccine polyvalent) has been recommended as a one-time single dose, without revaccination since safety data are insufficient. We studied the incidence of inadvertent revaccinations with Pneumovax 23 in patients over 65 years of age and readmitted to the same hospital within a five year period.

Methods: We used retrospective computerized data bank for all patients over age of 65 rehospitalized at least 6 times into the same tertiary care center between 10/1/2002 and 3/31/2008. Demographics, medical conditions including malignancies, and presence of cognitive disease impacting on ability to communicate were tabulated, as well as documentation of Pneumovax 23 administration. Relationship between number of readmissions and number of revaccinations was studied using a Pearson correlation and Cox proportional hazards models were planned to determine the variables independently associated with revaccination. Predicted risk of inadvertent vaccination was proposed for analysis, according to the coefficients of patient's characteristics identified in this study.

Results: There were 5,655 readmitted patients during this time period. On average, there were 1.61 readmissions per patient (SD=1.20). The number of readmissions ranged from 1 to 19. For the purpose of this study, patients with 6 readmissions or higher were selected (N=60, total distinct medical records charts=561). In this population, the average number of readmissions was 9.35, with most (28.3%) patients having 6 readmissions and 25% with 7 readmissions; 56.7% were females, 58.3% were Caucasians, 83.3% were non-demented, 13.3% had language barriers, and 48.3% were immunosuppressed. Only 6 (10%) individual patients were vaccinated with one occurrence of revaccination. No side effects were noted.

Conclusion: In this study, patients over the age of 65 do not appear to be at risk of receiving inadvertent revaccinations with Pneumovax 23 when they are readmitted. Indeed, health care providers may need to become more diligent about routinely exploring the opportunity to vaccinate elderly patients during hospitalization to maximize the benefits of disease prevention.

D124

PACT: A Physical Activity Contract Tailored to Promote Exercise in a Geriatric Outpatient Setting.

J. B. Gerber,[1] P. Bloom,[2] A. Chun,[2] J. Ross.[2] *1. Family Medicine, University of Washington, Seattle, WA; 2. Geriatrics, Mount Sinai School of Medicine, New York, NY.*

Purpose: Physical activity improves health and maintains physical and mental well-being. Promoting this behavior remains a challenge, particularly among the elderly. Our objective was to determine whether an electronic medical record-based, standardized contract, the Physical Activity Contract Tailored (PACT), was feasible and effectively promoted physical activity among an urban population of older adults.

Methods: This is a pilot prospective cohort study conducted at an urban outpatient geriatrics practice. We recruited community-dwelling adults aged >65 years, including those using assistive devices. We excluded those with severe cognitive impairment or other contraindications to physical activity. Using the contract, one investigator counseled each participant and discussed activity goals, considering functional status and medical conditions. The PACT was then printed, signed, and given to enrollees. Daily activity minutes recorded in logs, vital signs, and quality of life scores were compared before and after the PACT at 4 and 8 weeks using paired t-tests and one-way ANOVAs with medians (last observations were carried forward for dropouts).

Results: Fifty of the 75 patients (67%) approached to participate enrolled and completed the PACT. The mean age was 80 years, 74% were female, 58% were white, 52% used an assistive device, and 42% were in the action or preparation stage of change for physical activity. Follow-up data were available for 42 (84%) participants at week 4 and 39 (78%) at week 8. At baseline, median reported minutes of physical activity was 172 per week (in walking equivalents). After PACT completion, median reported minutes of physical activity was significantly increased at week 4 (306; p<0.001) and at week 8 (329; p=0.003) when compared with baseline activity. At baseline, 26% of participants reported any pain. After PACT completion, a significantly larger proportion of participants reported any pain at week 4 (46%; p=0.03); there were no significant differences between baseline and week 8 reports of pain (38%; p=0.21). There were no other significant differences before and after PACT completion for other measures of health, including weight, blood pressure, and quality of life.

Conclusion: Individualized counseling using an EMR-based, standardized PACT increased physical activity over 8 weeks among an urban population of older adults.

D125

The SF-36 potentially shows response shift pre- to post cardiac surgery in the elderly.

I. Van der Spuy,[2] A. R. Huang,[1] N. E. Mayo,[1,3] S. Scott.[3] *1. Medicine, McGill University Health Centre, Montreal, QC, Canada; 2. Physical and occupational therapy, McGill University, Montreal, QC, Canada; 3. Epidemiology, McGill University Health Centre, Montreal, QC, Canada.*

Supported By: McGill University Health Centre Research Institute

AIMS: The SF-36 is a widely used measure of health-related quality of life (HRQL) and is one of the few patient reported outcomes used to evaluate the outcome of surgery. As major surgery is a life-altering experience, it is likely that people will experience a response shift pre- to post-surgery affecting reporting of HRQL constructs. This exploratory study assessed the extent to which the factor structure of the SF-36 changed pre- to post-surgery in an elderly cardiac surgery population. METHODS: Using the SF-36 elderly people were assessed pre- and six months following cardiac surgery. Confirmatory factor analysis was applied to the pre- and post-surgery data. RESULTS: The scores on the EQ-5D VAS was 59 pre- and 80 post-surgery. Values for the PCS were 35 and 49 and for MCS, 52 and 57, pre- and post-surgery. Pre-surgery, one factor compromised all subscales except Role-Emotional and the Mental Health Index which formed the second factor. After surgery, the first factor contained all subscales except Pain which was the only subscale in the second factor. CONCLUSIONS: The two factor physical and mental health generic structure of the SF-36 potentially does not hold for persons scheduled for cardiac surgery suggesting that living with chronic heart disease has already induced a response shift. A second response

shift potentially occurs after surgery. It is recommended that, before using complex health profiles such as the SF-36 to evaluate change after interventions which potentially could induce response shift, the factor structure be examined and a subscale specific analysis used if there is evidence for change in the factor structure over time.

D126

Factors Influencing Older Adults to Complete Advance Directives.

G. J. Alano,[1] M. Hussain,[1] J. Jeune,[1] B. Louis,[1] G. El-Kass,[1] M. Ashraf,[1] R. Reddy,[1] J. Y. Tai,[3] R. Pekmezaris,[1,2] M. Lesser,[3] G. P. Wolf-Klein.[1,2] *1. North Shore - LIJ Health System, New Hyde Park, NY; 2. The Bette and Jerome Lorber Center for the Advancement of Medical Education, New Hyde Park, NY; 3. The Feinstein Institute for Medical Research, Manhasset, NY.*

Background: Despite major research initiatives like the SUPPORT study, the rate of completion of advance directives (ADs) remains low, reaching 20% in hospital settings. We sought to determine whether there are factors which influence the process of AD completion among older adults.

Methods: Direct interviews of hospitalized and community-dwelling cognitively intact patients over the age of 65 were conducted in 3 academic settings in the NY metropolitan area. Data analysis was primarily descriptive; for categorical variables, Chi Square or Fisher's exact tests were used; for continuous variables, t-tests or analysis of variables (ANOVA) were used.

Results: Of the 200 interviews, 125 subjects (63%) had completed ADs. When comparing groups with ADs and without ADs, the following factors were significantly associated with having an AD: female gender (68% vs 41%, p=0.0002), mean age (80 vs 77, p=0.0186), Caucasian (78% vs 45%, p< .0001), and high school educated (92% vs 76 %, p=0.0016). Other demographic variables, such as religion, marital status, income level, and having children were not significantly associated with AD status. In both groups, the vast majority stated that they were "confident that their family (99% vs 97%), and their physician (98% vs 93%) would abide by their wishes". Neither group described ADs as against their religion (3% vs 4%).

In the group with ADs, most subjects had undergone major surgery (83% vs 58%, p <0.0001). Other significant factors between groups included a "formal request to complete an AD" (81% vs 26%, p <0.0001), receiving an explanation about the importance of ADs (86 % vs 41 %, p<0.0001) and having seen mass media information (77% vs 37 %, p<0.0001). In addition, ADs subjects admitted to "needing control over their medical treatment" (97% vs 80%, p< 0.0001), "not wanting to be kept alive if in a coma" (89 % vs 71%, p=0.0014) and felt that an "AD would help in the relief of suffering at the end of life" (98% vs 68% p <0.0001).

Conclusion: This study suggests that amongst older adults, the probability of completing advance directives is related to the impact of a personal request by health care providers as well as marketing efforts to explain the importance of the decision process.

D127

The Value of a Symptom Management Approach to Overactive Bladder Symptoms in Women.

H. A. Nissim,[1] T. X. Le,[2] C. Sarkisian,[3] S. L. Maliski,[4] M. S. Litwin,[2] S. Raz,[2] L. V. Rodriguez,[2] J. T. Anger.[2] *1. Albert Einstein College of Medicine, Bronx, NY; 2. Urology, UCLA, Los Angeles, CA; 3. Medicine/Geratrics, UCLA, Los Angeles, CA; 4. School of Nursing, UCLA, Los Angeles, CA.*

Supported By: NIDDK

Introduction and Objective: Overactive bladder (OAB) is defined by the International Continence Society as urinary urgency, with or without urge urinary incontinence, usually with frequency and nocturia. In the past, research has examined OAB in women with the goal of curing the condition. However, little is known about what patients regard to be the most bothersome symptoms or what they consider ideal treatment. The goal of this study was to assess women's perceptions of their OAB symptoms and treatment by conducting patient focus groups. We also sought to better understand what women consider positive outcomes and high quality care.

Methods: Women seen in the UCLA Urology clinics were identified by ICD-9 codes for OAB symptoms and recruited. Five focus groups totaling 33 patients with OAB symptoms were conducted. Non-clinician moderators conducted the focus group sessions incorporating topics related to the patients' perceptions of OAB symptoms, treatments, and outcomes. Data analysis was performed using grounded theory methodology.

Results: Qualitative analysis yielded the following preliminary themes: Impact of OAB on quality of life, strategies to control wetness, medications and side effects, and triggers for incontinence. The majority of the women who participated in the focus groups reported only a partial response to medication and other treatments for OAB. They therefore became self-reliant and developed personalized strategies to improve their quality of life. These strategies included fluid restriction, preventive toileting, and, most importantly, the use of incontinence pads.

Illustrative Quotes:

"Going on car trips, long car trips, airplane trips. I mean it doesn't stop me but you have to think where am I gonna sit, where am I gonna stop, where's the next bathroom?"

"Don't ever pass a toilet without stopping."

"I'm thankful for the pads because this problem is controlling my life, and this is my life saver so I can go wherever I want to go."

Conclusions: Most studies addressing the treatment of OAB aim at curing the condition. However, such a strategy may be unrealistic. We propose that a symptom management approach to OAB may optimize patient outcomes and improve quality of life.

D128

Improvement in Short Form 36 (SF36) Scores in a Geriatrician-Led Chronic Care Model (CCM) for Patients Selected as High Risk in an HMO.

J. E. Agens. *Geriatrics, Florida State University College of Medicine, Tallahassee, FL.*

Supported By: Florida State University College of Medicine Department of Geriatrics provided funding for the statistical analysisis

Purpose: The purpose of the study was to prospectively demonstrate improvements in quality of life as measured by SF36 as a result of a geriatrician-led intervention based on Wagner's CCM in a cohort of high risk adult HMO patients.

Methods: 224 adult patients, mean age 73, of an HMO accepted an invitation by a geriatrician-led team to change their care to a system based on the CCM. The geriatrician (MD) invited >1000 patients to participate, the sickest 1% of adults at the HMO. The DxCg system, developed at Boston University, yields a relative risk score based on ICD-9 coding. A relative risk score of >7.0 based on the DxCg score defined the target population. The MD led an intervention that included self management support (SMS) via a patient centered care plan that the MD gave in writing to each patient at every visit. The patients and MD used this to coordinate with other providers and to promote self care. Registries supported evidence based care for diabetes, heart failure, coronary artery disease, and depression. Electronic prescribing facilitated therapeutic review and there was open access to office visits.

The SF36 was measured at baseline and at one year. Eight subscales were scored from 0-100: physical function, role limits related to physical function, role limits related to emotional function, energy, emotional well being, social function, pain, and general health.

Results: The null hypothesis was no difference between the baseline and the subsequent 1 year measure of each SF36 subscale. In

other words, the average of the sum of differences would be zero. The null hypothesis was rejected. Paired t tests for each measure are shown in Table 1

Conclusion: A geriatrician led intervention based upon CCM yielded significant improvement in all eight subscales of the SF36 in a cohort of 244 high risk elderly HMO patients.

Table 1 Baseline, Improvement, and Confidence Interval (CI) of SF36 Scores 1 Year

DependentVariable	Mean Baseline Score	Mean Points Improved	CI	P-Value
Physical Function	48	5.5	3.1	<.0001
Role Limits Physical	38	10.8	6.2	<.00006
Role Limits Emotional	64	8.4	3.3	<.003
Energy Fatigue	38	5.6	3.5	<.000009
EmotionalFunction	68	3.3	1.2	<.004
Social Function	59	6.8	3.7	<.0002
Pain	47	5.7	3.1	<.0002
General Health	39	8.5	6.6	<.000000000001

D129

Exploring changes in driver habits between older urban and rural drivers.

K. M. Diaz,[1] S. Bhattacharya.[2] *1. Family Medicine, University of Kansas Medical Center, Junction City, KS; 2. Family Medicine, University of Kansas Medical Center, Kansas City, KS.*

Introduction: Per mile driven, older drivers have the highest mortality rate than any other cohort. Despite having age-related changes that could increase driving risk, most older adults continue to drive as it is their key to independence. This is amplified in rural settings where driving may be the sole transportation mode. Recent studies have shown that many factors change in the way older persons drive, but haven't explored differences between urban and rural drivers. With the growing geriatric cohort, we wanted to investigate changes in urban and rural drivers to assess how their needs differ and how health care providers can improve driving fitness. Design: We administered a voluntary survey to drivers over 65 in the waiting rooms of one urban (Kansas City) and one rural (Junction City) clinic in Kansas. The nurses distributed and collected the surveys, the surveyor was blinded and their responses didn't affect their medical care. The 1 page, 21 item survey discussed if/why they stopped driving, if they had a license, how often/where they drive now, seatbelt and cell phone use, weather conditions they avoid, their driving challenges, close-calls and accidents, changes in driving habits and what they needed from their healthcare community to improve their driving fitness. Results: Fifty rural and 50 urban surveys were collected. We found that several rural drivers over age 90 were still driving compared to urban drivers who stopped in their 70-80's; Urban drivers had more accidents and close-calls; Urban drivers drove 5-10 miles to reach their destinations, whereas rural drivers drove 1-2 miles; Rural drivers were less likely to drive in bad weather; Both sets of drivers did not use phones or GPS devices while driving; Both sets avoided unfamiliar routes unless a navigator was present; Rural drivers spent most of their time driving to appointments and urban drivers went to friends' homes; Most drivers did not intend to change the way they drove yet wanted an "older drivers education course". Conclusion: Rural and urban drivers have different driving habits. We need to discuss these habits with our patients and assess for problems that may interfere with their driving. As a medical community we need to ensure our roads and patients are safe, therefore, further investigation is needed to adequately assess the needs of our older drivers.

D130

Relationships Between Gait Speed and Balance in Community-dwelling Older Adults.

A. Goldberg,[1] S. L. Schepens.[2] *1. Department of Health Care Sciences, Program in Physical Therapy, and Institute of Gerontology, and Department of Internal Medicine, Wayne State University, Detroit, MI; 2. Department of Health Care Sciences, Program in Physical Therapy, and Institute of Gerontology, Wayne State University, Detroit, MI.*

Supported By: This study was funded by a Del Harder Rehabilitation Award from the Rehabilitation Institute of Michigan.

Introduction: Reduced gait speed (GS) is predictive of functional decline in older adults and poor performance on gait-related clinical tests is associated with falls in that population. The purpose of this study was to determine the relationship between usual GS and balance in community-dwelling older adults.

Methods: Thirty-nine community-dwelling adults (mean age 72.7y) completed the Activities-specific Balance Confidence Scale. Participants also completed clinical balance and mobility tests (unipedal stance time [UST], maximum step length [MSL], functional reach [FR], timed up and go [TUG], and usual GS). Participants were categorized as fast (GS >1m/s), intermediate (0.6m/s< GS <1m/s), or slow (GS <0.6m/s) walkers. Pearson's correlation coefficient (r) was calculated to examine relationships between GS and balance. Differences in balance measures between fast and intermediate walkers were assessed using Multivariate Analysis of Variance (MANOVA) followed by independent samples t-tests with adjustments for multiple comparisons. The intraclass correlation coefficient (ICC 3,1) was calculated to assess intrarater reliability of GS. An alpha level of $p \leq 0.01$ was used.

Results: No participants were categorized as slow walkers. Fast walkers had significantly greater GS than intermediate walkers ($p<0.001$). There were moderate to good correlations between GS and balance, as well as balance confidence (Pearson's r 0.48-0.78; $p<0.05$) such that faster walking was associated with higher confidence and superior balance performance. MANOVA ($p=0.001$) followed by independent samples t-tests indicated fast walkers performed significantly better on FR and TUG ($p<0.01$) than intermediate walkers. Similarly, a trend ($0.01 \leq p<0.05$) towards significant differences between fast and intermediate walkers was noted for balance confidence, UST, and MSL. Intrarater reliability for GS was excellent (ICC=0.96) ($p<0.001$).

Conclusions: These results suggest that higher functioning walkers have better balance capabilities and higher confidence than lower functioning walkers. This coupled with excellent intrarater reliability suggests that clinicians should include GS in their falls risk and mobility assessments.

D131

Predictors of Geriatric Rehabilitation Effectiveness and Efficiency.

G. Koh,[1,3] B. Y. Tan,[2,1] N. P. Fong,[2,1] K. M. Chan,[3] E. Menon,[4] K. K. Lee,[5] S. K. Cheong,[1] T. Y. Wong,[1] A. Cheong,[1] K. S. Chia,[1] D. Koh.[1] *1. Community, Occupational and Family Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore; 2. Medicine, St Luke's Hospital, Singapore, Singapore; 3. Medicine, Ang Mo Kio Thye Hua Kwan Hospital, Singapore, Singapore; 4. Medicine, St Andrew's Community Hospital, Singapore, Singapore; 5. Medicine, Bright Vision Hospital, Singapore, Singapore.*

Supported By: This study was supported by Singapore's National Medicine Research Council and National University of Singapore grants.

Purpose: To study the predictors of geriatric rehabilitation effectiveness (REs) and efficiency (REy) .

Methods: We extracted medical record data for all first admission patients to a 100-bedded geriatric rehabilitation hospital from 1996 to 2005 who received ≥2 weeks of rehabilitation. We collected admission data including socio-demographic details, Shah modified Barthel Index (BI) scores and medical co-morbidity type and burden. REs and REy scores (based on Shah et al's formula) were calculated. We performed backward linear regression modeling for REs and REy using variables whose p≤0.15 on bivariate analysis.

Results: 2,232 admissions had admission and discharge BI scores recorded. The overall mean REs was 43.6% (SD=36.4) and mean REy was 14.1 BI units per 30 days (SD=28.2). There was a linear positive relationship between REs and admission BI score but an inverted U-shape relationship between REy and admission BI score. Our table lists the independent predictors of REs and REy.

Conclusions: Lower admission BI scores are predictors of poorer rehabilitation effectiveness but extremes of admission BI scores are predictors of poorer rehabilitation efficiency. Dementia, peripheral vascular disease and older age are predictors of poorer rehabilitation effectiveness and efficiency.

Independent predictors of geriatric rehabilitation effectiveness and efficiency

Admission variable	β coefficient	95% CI	p-value
Rehabilitation Effectiveness			
Dementia	-14.10	-17.68 to -10.52	< 0.001
Hemiplegia	-10.30	-13.82 to -6.78	< 0.001
Admission BI score	7.77	6.29 to 9.25	< 0.001
Peripheral vascular disease	-6.95	-12.11 to -1.78	0.008
Age	-4.54	-6.02 to -3.06	< 0.001
Ischaemic heart disease	-3.60	-6.71 to -0.49	0.023
Number of carers available	-2.02	-3.50 to -0.60	0.006
Rehabilitation Effectiveness			
Dementia	-7.45	-10.38 to -4.54	< 0.001
Peripheral vascular disease	-4.31	-8.54 to -0.08	0.046
Admission BI score	-2.80	-3.99 to -1.62	< 0.001
Age	-2.29	-3.49 to -1.08	< 0.001

D132

Grip Strength and Gait Speed as Predictors of 12-year Mortality in Older Mexican American Men and Women.

S. Bindawas,[1,2] S. Al Snih,[1,3] Y. Kuo,[3] K. Markides,[2,3] E. Protas.[1] *1. Rehabilitation Science, University of Texas Medical Branch, Galveston, TX; 2. Preventive Medicine & Community Health, UTMB, Galveston, TX; 3. Sealy Center on Aging, UTMB, Galveston, TX.*

Supported By: Funded by grants: AG10939; R03-TW007614 and R01-HD051844

OBJECTIVES: To examine whether grip strength is strongly associated with death than gait speed over a 12-year period in community-dwelling older Mexican American men and women.

DESIGN: A prospective cohort study.

SETTING: Five southwestern states: Texas, New Mexico, Colorado, Arizona, and California.

PARTICIPANTS: The participants were 1,007 men and 1,3493 women from a population-based sample of 2,356 noninstitutionalized Mexican-Americans aged 65 and older.

MEASUREMENTS: Maximal hand grip strength (kg) and gait speed (usual walking pace over 2.44 meters per second) were assessed at baseline during 1993/94. Mortality was ascertained from the National Death Index. Covariates included demographics, body mass index, disability, depressive symptoms, cognitive function and comorbidity.

RESULTS: At baseline, the average age for men and women were comparable 72.8±6.14 and 72.4±6.04, respectively. Over a 12-year period, the survival rate was significantly higher in women (65.1%) than men (52.2%). Average grip strength and gait speed were significantly higher in men (29.2 kg; 0.45 m/s) than in women (18.9kg; 0.39 m/s). In Cox proportional hazards analyses adjusting for covariate effects; hazard ratios (HR) in men for the grip strength and gait speed were (HR=0.99, 95%CI=0.97-0.99) (HR=0.56, 95%CI=0.36-0.86) respectively. In women, hazard ratios for grip strength and gait speed were (HR=0.97, 95%CI=0.95-0.98) (HR=0.52, 95%CI=0.29-0.85), respectively. For men, gait speed association with death was stronger than the association between grip strength with death, and vice versa for women, based on the chi-square test and percentage of variance explained.

CONCLUSION: This study suggests that both hand grip strength and gait speed at baseline were significantly associated with 12-year mortality in older Mexican Americans. Hand grip strength was associated more with the risk of mortality over a 12-year period in older Mexican Americans men and women compared to gait speed. However, in men, gait speed measure appeared to be slightly more important than grip strength; while the vise versa with the older women. More research is needed to understand which physical performance measures are associated more with mortality in different older populations.

D133

Pain and Functional Recovery in Elderly Medicare Patients with a Hip Fracture Treated in Inpatient Rehabilitation Facilities.

S. Ganesh,[1] A. Deutsch.[1,2] *1. Physical Medicine and Rehabilitation, Rehabilitation Institute of Chicago/Northwestern, Chicago, IL; 2. Center for Rehabilitation Outcomes Research, Chicago, IL.*

Supported By: National Institute on Disability and Rehabilitation Research (H133A030807; Heinemann, Principal Investigator)

PURPOSE: The purpose of this study was to examine the relationship between pain and discharge functional status for patients with unilateral hip fracture treated in inpatient rehabilitation facilities .

METHODS: Secondary analysis of patient-level Medicare claims (billing) and assessment data for patients discharged in 2002 to 2005. The patient assessment data are the IRF-PAI (Inpatient Rehabilitation Facility-Patient Assessment Instrument) data, which are submitted to the Centers for Medicare and Medicaid Services as a part of the Inpatient Rehabilitation Facility Prospective Payment System. Setting: 970 inpatient rehabilitation hospitals and units in the United States. Participants: 58,336 geriatric patients with the admitting diagnosis of unilateral hip fracture and a discharge pain score. Interventions: N/A. Analysis: Descriptive statistics and multiple linear regression. Main predictor: discharge pain score. Covariates: age, gender, admission Functional Independence Measure (FIM) score (mobility) and Charlson co-morbidity index. Main Outcome Measures: discharge FIM mobility score (range 5 to 35, with higher scores indicating more independence).

RESULTS: Among Medicare patients 65 or older with hip fracture the mean ± standard deviation admission age was 81±7. Most patients were female (74-75%). Pain scores were negatively associated with discharge mobility FIM score (Beta coefficient -.165 to -.187) after accounting for age, gender, admission mobility FIM score, comorbidity index.

CONCLUSIONS: Pain, as described by patient report at discharge, was significantly associated with discharge mobility. Better pain control may be associated with improved outcomes. Further study is needed in this area.

D134

Spirituality seeking and Medical Outcomes Following CABG Surgery.

A. L. Ai,[1] S. F. Bolling.[2] *1. Family Medicine, University of Pittsburgh, Pittsburgh, PA; 2. Social Work, University of Pittsburgh, Pittsburgh, PA.*

Supported By: National Institute on Aging RO3 AGO 15686-01, The NIH-NCCAM Grant, Project 3 (RO1) with The NCCAM Center Grant P50 AT00011, John Templeton and John Hartford Foundations

Background and Purpose: Coronary artery bypass graft surgery (CABG) has become a common procedure in middle-age and late life. A handful of prospective studies have linked religious factors, especially strong beliefs, with positive CABG outcomes. Yet, little is know about the role of faith factors in relation to secular belief systems. The purpose of the present study was to replicate the findings in an earlier survey with a sample of east-coast patients from a middle-west cardiac center. Same medical outcomes, postoperative complications (PC) and hospital length of stay (LOS), and some similar faith factors and controls, as well as a new faith factor, sense of reverence in secular contexts, were examined. The concept, referring as to the deep respect for life in the sincere desire to do no harm, has not been well examined since it was first conceptualized by German philosopher and physician Albert Schweitzer (1965) in his the famous book, Reverence for life.

Methods: Face-to-face interviews were conducted with 177 patients (age 65+) two weeks before heart surgery at the University of Michigan Health Systems. Trained interviewers assess these factors, as well as demographics, general health, and mood state. Medical variables, including PC and LOS, were retrieved from the Medical Center's Society of Thoracic Surgeons' Database. Variables of major interest and significant correlates were analyzed through multiple regression analysis following a pre-planned sequence.

Results: Sense of reverence in secular contexts predicted fewer PC and shorter hospital LOS. Controlling for PC reduced the initial influence of reverence on LOS, suggesting the mediating role of PC between reverence and LOS. Frequency of prayer was associated with the reduced PC but not LOS. Neither attendance at religious services nor spiritual experiences that enhanced one's belief was related to outcomes. Other medical predictors of PC included number of diseased arteries and perfusion time, and that of LOS were left ventricular ejection fraction and perfusion time. Women also had longer LOS.

Conclusion: The findings support the positive influence of some faith factors, especially those in relation to beliefs, on post-CABG health outcomes in the previous study. Expanding the literature, this study indicates the potential influence of a spiritual affect, the sense of reverence in secular contexts, which predicted fewer PC that affects LOS.

D135

Clinical characteristics and hospital course of geriatric patients undergoing cardiac surgery.

B. Frilling,[1] F. Riess,[2] W. von Renteln-Kruse.[1] *1. Geriatrics and Gerontology Centre at the University of Hamburg, Geriatric Clinic, Albertinen-Haus, Hamburg, Germany; 2. Cardiac Surgery, Albertinen-Krankenhaus, Hamburg, Germany.*

Supported By: Dr. Frilling is supported by a Forschungskolleg Geriatrie Grant from the Robert Bosch Foundation, Stuttgart, Germany

Objective:

An increasing number of geriatric patients develop cardiac disease requiring surgery. With the rise of new non-surgical treatment options assessing operative risk has become one of the key aspects of clinical decision-making. Aim of this study is to evaluate the risks and benefits of cardiac surgery of the elderly.

Methods:

Interim analysis of a prospective cohort study. 165 consecutive patients who were referred for elective or urgent cardiac surgery underwent routine geriatric assessment on the day before surgery. Geriatric patients were defined as either > 80 years of age or > 70 years with two or more chronic diseases. Primary endpoints were in-hospital death or stroke. Secondary endpoints were hospital complications (renal or heart failure, sepsis, delirium or new atrial fibrillation).

Results:

Mean age was 76years; 38.8% were women. Mean STS-Score was 14.7%. 53.9% of the patients had aortic valve replacement with or without CABG, 34.5% isolated coronary surgery. Hospital mortality was 3.6%. 48.5% of the patients had one or more postoperative complications (stroke, renal or heart failure, sepsis, delirium or new atrial fibrillation). 21.8% of the patients had a prolonged hospital stay (LOS) > 14 days.

Conclusions:

Hospital mortality of geriatric patients undergoing cardiac surgery is low. Symptomatic heart failure, preoperative atrial fibrillation and low BMI as well as increasing age are significantly associated with hospital death.

In-hospital course

	In-hospital death	No in-hospital death	p-value
Age (mean, years)	80 +/- 3	75.8 +/- 4.7	0.05
BMI (mean, kg/m2)	21.9 +/-2.7	26.1+/-3.7	0.01
EF < 45%	83.3%	22.6%	< 0.05
Preoperative atrial fibrillation	66.7%	27.7%	< 0.05
Recent cardiac decompensation	66.7%	13.8%	0.001
STS-Score (estimated mortality)	31.9%	14.1%	< 0.01

D136

Laparoscopic Hysterectomy in Older Patients.

K. Heyman,[1] B. Slomovitz.[2] *1. Division of Geriatrics, Weill Cornell Medical College, New York, NY; 2. Women's Cancer Center, Morristown Memorial Hospital, Morristown, NJ.*

Supported By: Henry Adelman Fund for Medical Student Education

Background: Studies have shown that minimally invasive surgery is ideal for older patients, who are typically at higher risk of perioperative complications. No study, however, was found to have compared both older and younger patients undergoing laparoscopic hysterectomy with those undergoing more invasive procedures.

Purpose: To characterize surgical outcomes of patients ≥65 years undergoing laparoscopic hysterectomy by comparing them to 1) younger patients undergoing the same procedure and 2) patients ≥65 undergoing abdominal hysterectomy (laparotomy).

Methods: A retrospective analysis was conducted of 125 patients undergoing laparoscopic and abdominal hysterectomy between 2006 and 2008 at a large urban academic medical center by gynecologic oncologic surgeons. Indications for surgery included invasive and preinvasive disease of the endometrium and cervix, stage I ovarian cancer, suspected ovarian cancers, and prophylactic surgery in high-risk women. Data were collected on demographics, pathology, surgery time, estimated blood loss, transfusions, surgical complications, length of hospital stay and peri-operative complications.

Results: No significant differences were found between laparoscopy and laparotomy patients when comparing age, body mass index, medical co-morbidities, and surgical time. Laparoscopy was associated with lower blood loss, decreased need for transfusion and shorter length of stay, regardless of age group. Patients selected for laparotomy were more likely to have a history of abdominal surgery.

Patients ≥65 were more likely to have medical co-morbidities. No major operative complications were found in any group. Minor complications (e.g., fever, wound complications, urinary tract infection, ileus) occurred in 44% of laparotomy patients and 17% of laparoscopy patients (p=0.001). No differences were found between a subset of patients ≥75 who underwent laparoscopy and patients 65-74 undergoing the same procedure, except for median length of hospital stay (3.5 days and 1 day respectively).

Conclusions: In pre-selected patients who are good candidates for minimally invasive surgery, laparoscopic hysterectomy appears safe and practical for women ≥65. These women had fewer complications, less blood loss, fewer transfusions, and a shorter post-operative hospital stay than those undergoing abdominal hysterectomy, as well as similar outcomes to younger patients undergoing the same procedure.

D137

Laparoscopic Colectomies in Octogenarians: A Better Option to Open Surgery?

S. K. Suryadevara,[1] D. Vaughn,[1] A. Kurian,[1] S. Kim,[1] M. Zebley,[1] S. Fassler,[1] M. Hofmann.[2] *1. Surgery, Abington Memorial Hospital, Abington, PA; 2. Geriatrics, Abington Memorial Hospital, Abington, PA.*

Purpose:

To assess the safety, efficacy and outcome of laparoscopic colectomies in patients aged > age 80.

Methods:

A database for all colectomies performed on patients > 80 years from Jan. 2002 to Sept. 2007 was analyzed retrospectively for type of operation, length of operation, length of stay (LOS), estimated blood loss (EBL), American Society of Anesthetists Grade (ASA), diagnosis, complications, mortality rates and outcomes. Data were analyzed using the unpaired t-test,

Results:

139 patients had open procedures (Group A); 150 patients, laparoscopic procedures (Group B). 15 patients (10%) from Group B had laparoscopic procedures converted to open. Mean age was similar (84.9 years [A] vs. 84 years [B]) as was ASA grade (3 vs 2.7). Length of operation was similar (130 minutes [A], 122 minutes [B]). LOS was significantly longer for open procedures (13 days vs. 7 days, p= 0.0001). EBL was elevated in group A (306 cc) compared with group B (168 cc), p=0.0013. Open procedures had increased risk of postop ileus (18.7%) and acute renal failure (13%) compared with group B (9.3% and 4.5% respectively). Wound infection rate and risk of postop myocardial infarction were reduced in Group B. The mortality rate for open procedures was significantly higher (19.4%, 27/139 patients) than after laparoscopic procedures (3.3%, 5/135 patients). Only 50/139 patients (36%) were ultimately discharged home from group A compared with 115/150 patients (77%) from group B. Conversion rate to open operations was 10% (15/150 patients), most commonly for adhesions. No converted patient died. 31% (43 patients) of the open operations were performed for emergency indications, such as perforated diverticulitis or C. difficile colitis. Mortality rate was highest among this group, 18/43 patients (42%) with the most common postop complication being acute renal failure. Patients from group B having elective open resections had shorter hospital stays, reduced blood loss, decreased operative time, and improved in mortality rate (9.4% for elective open cases). No laparoscopic procedures were performed in the emergency setting on this patient population.

Conclusion:

Laparoscopic colon and rectal surgery can be performed safely and offers a better option than open surgery in octogenarians. No contraindication could be established to laparoscopic procedures in the elderly based on age.