



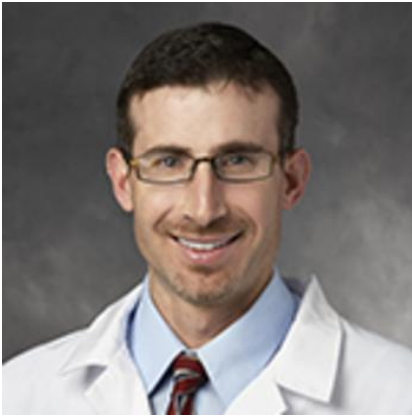
"Models and Studies of Aging"
Second Biennial GEMSSTAR Conference

Scholar Profiles and Abstracts
September 21 - 23, 2016



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Laren Becker MD, PhD

Position: Instructor in Medicine

Specialty: Gastroenterology, Internal Medicine

Affiliation: Stanford University School of Medicine

Research Interests: Aging, GI motility

Year of Award: GEMSSTAR 2013

Other Funding: K08 NIDDK, R21 NIA

Contact Info: lsbecker@stanford.edu

Dr. Becker received his MD/PhD from Albert Einstein College of Medicine. He completed his internal medicine internship and residency followed by gastroenterology fellowship at Beth Israel Deaconess Medical Center/Harvard Medical School. Since 2009 he has been faculty in the Division of Gastroenterology and Hepatology at Stanford University, specializing in neurogastroenterology. His research focus is neuroimmune interactions in the ENS and how aging influences it.



Name: Itay Bentov MD PhD

Position:

Associate Professor, Department of Anesthesiology and Pain Medicine.
Adjunct Associate Professor, Department of Medicine.

Specialty(ies): Anesthesiology and critical care.

Affiliation: University of Washington, Seattle, Washington

Research Interests: Growth factors and intracellular signaling, wound healing, frailty.

Year of Award: 2012

Professional Website: <http://www.uwmedicine.org/bios/itay-bentov>

Social Media Feed:

Publication Profile: <http://www.ncbi.nlm.nih.gov/pubmed/?term=bentov+I>

Contact Info: itayb@uw.edu 206-744-7232

Received his clinical training in anesthesiology and critical in Israel and research training in the Tel-Aviv/ NIH graduate partnership program. An Associate Professor in the Department of Anesthesiology and Pain Medicine. at the University of Washington, Seattle. Primary clinical duties are at Harborview Medical Center, the only level I trauma center in the WWAMI region. Funded research interests include Intracellular signaling of growth factors in aged cells. A mentor and advisor to trainees from underrepresented undergraduate students, medical students and residents. A member of the University of Washington and co-leads the “geriatric trauma interest group” at HMC to advance the hospital’s collaboration of clinical care and research of older adults who suffer from trauma related injuries.



Name: Miles Berger, MD PhD

Position: Assistant Professor of Neuroanesthesiology; Assistant Director, Neurologic Outcomes Research Group

Specialties: Anesthesiology, NeuroAnesthesiology, Geriatric Anesthesiology

Affiliation: Anesthesiology Department, Duke University Medical Center, Durham NC

Research Interests: Molecular, Cellular and Systems-level Mechanisms of Postoperative Delirium and Cognitive Dysfunction in Older Adults and Possible Overlaps with Alzheimer's Disease Pathogenesis, Postoperative Cognitive Resilience in Older Adults.

Year of Award: GEMSSTAR and Jahnigen Scholar awards, Fall 2015-2017

Other Funding: -International Anesthesia Research Society Mentored Research Award (2014-2016)
-Pilot Grant within Duke Pepper Center for Aging Program Project Grant (NIA P30AG028716, 2016-2018)

-ENhanced Academics in a Basic Laboratory Environment (ENABLE) Career Development Award from the Duke Private Diagnostic Clinic (2016-2018)

-American Geriatrics Society Small Project Grant (2016-2017)

-Co-Investigator, NIDA R01 "Systems Biology of Substance Abuse", PIs- David Murdoch, Christina Meade

-NIH T32 GM 008600 funding, 2014-2015

-Duke Translational Research Institute, Supplemental Project Award, 2016

Professional Website: <https://scholars.duke.edu/display/per8329292>

Publication Profile: <https://scholar.google.com/citations?user=jRqSj8QAAAAJ&hl=en>

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/48147333/?sort=date&direction=ascending>

Contact Info: miles.berger@duke.edu / 415-694-9580 (cell) / 919-684-8679 (office)

Biography: Dr. Berger graduated from Columbia University Magna Cum Laude, Phi Beta Kappa with a major in biochemistry. His undergraduate research demonstrated that different human neutrophil Gi-coupled receptors induce differential cellular functions, from chemotaxis to hydrogen peroxide generation. He then completed the MD/PhD program at the University of California, San Francisco. His PhD work (published in *PNAS* and *Annual Reviews in Medicine*) showed that Gi-coupled serotonin receptors and other Gi-coupled receptors regulate perinatal pancreatic beta cell development, and thereby modulating adult beta cell mass, glucose homeostasis, and diabetes risk. Dr. Berger then completed a transitional internship, anesthesiology residency and neuroanesthesiology fellowship at Duke University Medical Center, and joined the Duke faculty as an assistant professor in 2014. Dr. Berger's research focuses on identifying biomarkers for postoperative cognitive dysfunction and delirium; understanding potential links between these disorders, anesthesia and surgery, and Alzheimer's disease pathogenesis; and developing interventions to promote postoperative cognitive resilience in older adults.



Cynthia A. Brincat, MD, Ph.D, FACOG

Position: Associate Professor of OG and Urology

Specialties: Female Pelvic Medicine and Reconstructive Surgery

Affiliation: Loyola University Chicago, Stritch School of Medicine

Research Interests: Non-surgical management of pelvic floor disorders, quality of life issues in the fragile elderly with pelvic floor disorders, and care pathways in pelvic floor disorders.

Year of Award: GEMSSTAR 2016-17

Other Funding: Jahnigan Award

Professional Website: <https://www.loyolamedicine.org/doctor/cynthia-brincat?bk=1>

Contact Information: Email: cbrincat@lumc.edu

Cynthia is board certified in Female Pelvic Medicine and Reconstructive Surgery as well as Obstetrics and Gynecology and is an Associate Professor in the Departments of Obstetrics and Gynecology as well as Urology at Loyola University Chicago, Stritch School of Medicine. She is transitioning to aging research as the vast majority of her patients are elderly or fragile elderly. She presently is a co-investigator on Loyola's Prevention of Lower Urinary Symptoms (PLUS) Grant as well as a RO1 looking at recurrent urinary tract infections. She is active in medical education and is the clerkship director for the M-3's OB/GYN experience. She has a PhD in philosophy and prior to attending medical school taught philosophy and medical ethics for several years. She is active in the American College of Obstetricians and Gynecologists (ACOG), where she has been a National officer and presently serves as the Junior Fellow Advisor for District VI.



Benjamin S. Brooke, MD, PhD, FACS

Position: Assistant Professor of Surgery & Biomedical Informatics (Adjunct)

Specialties: Vascular Surgery, General Surgery

Affiliation: University of Utah School of Medicine

Research Interests: Surgical care coordination, information exchange between providers & patients, frailty, clinical decision support, implementation science

Year of Award: GEMSSTAR 2015

Other Funding: PCORI Pipeline to Proposal Tier I-III Awards

Professional Website: <http://healthcare.utah.edu/fad/mddetail.php?physicianID=u0079813>

Twitter Feed: @BenjaminSBrooke

Contact Information:

Email: Benjamin.Brooke@hsc.utah.edu;

Phone: 801-581-8301

Ben is a vascular surgeon and health services researcher at the University of Utah and VA Salt Lake Health Care System. He is board certified in Vascular Surgery and General Surgery, and is an Assistant Professor in the Department of Surgery at the University of Utah School of Medicine. He leads surgical health services research at the University of Utah, where he serves as Section Chief of the Health Services Research Section and Director of the Utah Intervention Quality and Implementation Research (U-INQUIRE) group. His research is focused on improving care coordination & information exchange during transitions of surgical care for older adults, which is the focus of his GEMSSTAR award as well as a PCORI Pipeline to Proposal Award. In addition, his research interests include implementation of preoperative frailty assessment tools and evaluating their role in surgical decision making.



Name: Charles Brown

Position: Assistant Professor

Specialty(ies): Anesthesiology & Critical Care Medicine; Division of Cardiac Anesthesia

Affiliation: Johns Hopkins

Research Interests: Improving outcomes for older adults after surgery, including preventing delirium, cognitive decline, and functional decline.

Year of Award: GEMSSTAR 2012-2014

Other Funding: Foundation grant (IARS), KL-2, Johns Hopkins Clinician Scientist Award

Professional

Website: http://www.hopkinsmedicine.org/anesthesiology/faculty/bios/brown_charles.shtml

Social Media Feed: N/A

Publication Profile: <http://www.ncbi.nlm.nih.gov/sites/myncbi/1Leu-ORLf3DAT/bibliography/42933892/public/?sort=date&direction=ascending>.

Contact Info: cbrownv@jhmi.edu; 410 955 7519

Biography

Dr. Brown is an anesthesiologist at Johns Hopkins, with fellowship training in cardiac anesthesia. He subsequently completed an MHS in Epidemiology at the Johns Hopkins Bloomberg School of Public Health. He has been funded by a KL-2, the GEMSSTAR, a Johns Hopkins Clinician Scientist Award, and the International Anesthesia Research Society. His research program centers on improving perioperative outcomes for older adults after major surgery, including the prevention of delirium, cognitive decline, and functional decline. He uses data from large-scale cohort studies as well as patient-enrolled cohort studies and trials. Specific areas of interest include the effects of anesthesia/depth of anesthesia on cognition, cerebral autoregulation monitoring, perioperative mobility, and frailty.



Name: Nathan Brummel

Position: Instructor in Medicine

Specialty(ies): Pulmonary & Critical Care Medicine

Affiliation: Vanderbilt University School of Medicine

Research Interests: Disabilities and impairments in physical and cognitive function after critical illness.

Year of Award: GEMSSTAR, 2013

Other Funding: KL2 from Vanderbilt Clinical and Translational Scholars Program, 2013

Professional Website: www.icudelirium.org

Social Media Feed:

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/nathan.brummel.1/bibliography/48808340/public?sort=date&direction=ascending>

Contact Info:

nathan.brummel@vanderbilt.edu
(615) 343-3957

Bio:

I am an aging-focused critical care clinical investigator with a background in clinical trials, biostatistics, epidemiology and data management. My NIH- and institutionally-funded research program seeks to understand better the processes that result in loss of independence through the development of disabilities in basic self-care activities for the growing number of patients who survive a critical illness each year. My overarching career objective is to become a national (and eventually international) leader in advancing our understanding of disabling processes that frequently accompanies critical illness through the development of better tools by which to understand underlying mechanisms and then to design and conduct randomized controlled trials of novel interventional strategies to improve patient-centered clinical outcomes for those with critical illness.



Name: Robert E. Burke MD, MS

Position: Acting Chief of Hospital Medicine, Denver VA Medical Center

Specialty(ies): Internal Medicine

Affiliation: Denver VA/University of Colorado

Research Interests: Transitions of care in vulnerable populations, skilled nursing facilities and health care policy, quality improvement and hospital medicine

Year of Award: GEMSSTAR 2015

Other Funding: VA Career Development Award

Professional Website: <https://profiles.ucdenver.edu/display/227801>;

Social Media Feed: N/A

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/16EzqG73i9f5H/bibliography/42775283/public/?sort=date&direction=ascending>

Contact Info: Robert.Burke5@va.gov; (303)-399-8020 x 2396

Bob Burke is currently the Chief of Hospital Medicine and the Associate Chief of Medicine at the Denver VA Medical Center and an Assistant Professor of Medicine at the University of Colorado. His GEMSSTAR and VA CDA funding investigate how to improve outcomes of older adults transitioning from the hospital to skilled nursing facilities. He is also implementing a nationwide expansion of a locally-developed Transitions Nurse program to improve transitions of care for rural Veterans, funded through the VA's Office of Rural Health. He is active in quality improvement, serving as an Associate Editor of BMJ Quality and Safety, and acting as the primary mentor for the Chief Resident in Quality and Patient Safety at the Denver VA. He was this year's recipient of the Young Investigator Award from the Society of Hospital Medicine.



Bihong Beth Chen, MD., Ph.D.

Position: Clinical Associate Professor

Specialty: Neuroradiology

Affiliation: City of Hope Medical Center

Research Interests: Brain functional MRI study of chemotherapy on cognition.

Year of Award: GEMSSTAR R03, 2013

Other Funding: None

Professional Website: None

Social Media Feed: None

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/bihong.chen.1/bibliography/48816342/public/?sort=date&direction=ascending>

Contact Info: Bechen@coh.org
626 831 1536 (Mobile)

I am a neuroradiologist at City of Hope National Medical Center with expertise in neuroimaging evaluation of cancer patients. I am a principal investigator for a clinical research study funded by GEMSSTAR R03: "Structural and functional brain magnetic resonance imaging findings of chemotherapy toxicity in older adults with breast cancer". This on-going clinical research study has focused on defining the short-term effects of chemotherapy on cognition in older adults with breast cancer receiving adjuvant chemotherapy. Using brain functional magnetic resonance imaging (fMRI), my team has identified alterations in brain structure and function in older patients with breast cancer receiving adjuvant chemotherapy. We are also using that information to study the long-term effects of chemotherapy on cognition in older breast cancer survivors in a separate clinical trial.



Name: John A. Dodson, MD, MPH

Position: Assistant Professor of Medicine and Population Health

Specialty(ies): Cardiology

Affiliation: New York University School of Medicine

Research Interests: Geriatric impairments and cardiovascular risk assessment; shared decision making

Year of Award: {GEMSSTAR, DWJS, or TFWS} 2013

Other Funding: {i.e. Beeson, K, etc.} American Heart Association (current); NIA K23 (current)

Professional Website: <http://nyulangone.org/doctors/1366634644/john-a-dodson>

Social Media Feed: Twitter: @JDodsonMD

Publication Profile: <http://www.ncbi.nlm.nih.gov/pubmed/?term=dodson+ja>

Contact Info: John. Dodson@nyumc.org

Caring for older adults with cardiovascular disease often falls outside of traditional evidence-based guidelines. My research aims to address some of our current gaps in knowledge in order to achieve better decision making and more patient-centered care. One area of my work has involved the use of large databases (e.g. Medicare, Veterans Administration, National Cardiovascular Data Registry) to document trends in procedure use and outcomes among seniors after cardiac interventions (e.g. percutaneous coronary intervention, valve surgery, implantable cardioverter defibrillators). In addition, through the use of smaller, well-characterized cohorts, I have investigated the association of aging-related syndromes such as frailty and cognitive impairment with outcomes including physical function, hospital readmission, and quality of life. I have served as Co-Investigator for the NIH/NHLBI-funded Comprehensive Evaluation of Risk Factors in Older Patients with Acute Myocardial Infarction (SILVER-AMI) study (<http://clinicaltrials.gov/show/NCT01755052>). I am currently Principal Investigator for a Patient-Oriented Research Career Development Award (K23) from the NIH/NIA and a Mentored Clinical and Population Research Award from the American Heart Association.



Name: Nancy J. Donovan, M.D.

Position: Associate Psychiatrist, Center for Alzheimer Research and Treatment, Center for Brain Mind Medicine, Brigham and Women's Hospital, Boston MA

Specialty: Geriatric Psychiatry

Affiliations: Brigham and Women's Hospital; Massachusetts General Hospital, Harvard Medical School

Research Interests: Neuropsychiatric symptoms in preclinical and early clinical stages of Alzheimer's Disease

Year of Award: GEMSSTAR 2013

Other Funding: Harvard Medical School Dupont-Warren and Livingston Fellowship Awards and philanthropic support.

Professional Website:

Social Media Feed:

Publication Profile: <http://www.ncbi.nlm.nih.gov/sites/myncbi/nancy.donovan.1/bibliography/45951694/public/?sort=date&direction=descending>

Contact Info: Email: njdonovan@partners.org

Nancy is co-investigator in Alzheimer's disease (AD)-related, investigator-initiated longitudinal cohort studies such as the Harvard Aging Brain Study (HABS) and clinical trials research across Brigham and Women's Hospital and Massachusetts General Hospital. She is an attending geriatric psychiatrist in the Brigham Behavioral Neurology/Neuropsychiatry memory disorders group. Her research concerns the epidemiology of neuropsychiatric symptoms in preclinical and early symptomatic stages of Alzheimer's disease and the relations of these symptoms to AD biomarkers such as cerebral amyloidosis, neurodegeneration and altered brain network function. Her work has focused on traditional neuropsychiatric symptoms (such as apathy, anxiety and depressive symptoms) as well as novel neuropsychiatric changes (such as loneliness and social disengagement) in aging and early AD. She serves on the Medical-Scientific Advisory Board of the Alzheimer's Association MA-NH Chapter, as associate editor and ad-hoc reviewer for a number of journals, and participates in the Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment and the research committee of the American Association of Geriatric Psychiatry.



Name: Kristine M. Erlandson, MD, MS

Position: Assistant Professor of Medicine

Specialty(ies): Internal Medicine/Infectious Diseases

Affiliation: University of Colorado

Research Interests: HIV and aging, frailty, physical function, body composition changes, “exercise as medicine”, qualitative research (new to this area)

Year of Award: GEMSSTAR 2011

Other Funding: K23, K23 Supplemental Funds, and R01 through the NIA; Gilead Sciences Research Scholars Program in HIV

Professional Website: (Division website under construction)

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1HELa08lc7hAp/bibliography/44146595/public/?sort=date&direction=ascending>

Contact Info: Kristine.Erlandson@ucdenver.edu

Office: 303-724-4941

Bio:

Kristine Erlandson is an Assistant Professor in the Division of Infectious Diseases, with a secondary appointment in the Division of Geriatric Medicine at the University of Colorado Denver- Anschutz Medical Campus. Her research is focused on the complications of aging in HIV-infection, specifically the mechanisms through which chronic HIV infection and the dysregulated inflammatory response leads to early frailty and physical function decline despite otherwise successful antiretroviral therapy. She is actively involved with both clinical trials in the treatment/prevention of physical function decline (exercise, statins in HIV) and observational cohort studies (AIDS Clinical Trials Group, Multicenter AIDS Cohort Study, and the Women’s Interagency HIV Study). She was recently recognized for her contributions to HIV research through the AIDS Clinical Trials Group John A Carey Young Investigator Award, the Gilead Sciences Research Scholars Program in HIV, and the Women in Medicine and Science Professional Leadership Award through the University of Colorado.



Lauren Ferrante, MD, MHS

Position: Instructor of Medicine

Specialty(ies): Pulmonary & Critical Care Medicine

Affiliation: Yale School of Medicine

Research Interests: Functional outcomes after a critical illness among older adults; early mobilization in the ICU

Year of Award: GEMSSTAR 2015 and TFWS 2015 (the ATS/AAIM-ASP Career Development Award in Geriatrics)

Other Funding: Pepper Scholar Award from the Yale Pepper Center

Professional Website: https://medicine.yale.edu/intmed/pulmonary/about/lauren_ferrante.profile

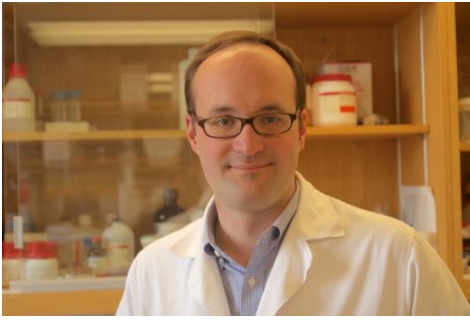
Twitter Feed: <https://twitter.com/lferrantemd>

Publication Profile:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/16g0lavKxNE5b/bibliography/47188061/public/?sort=date&direction=descending>

Contact Info: lauren.ferrante@yale.edu

I am a Pulmonary & Critical Care Medicine (PCCM) physician who conducts clinical outcomes research at the interface of PCCM and Geriatrics. The goal of my research program is to understand and improve the functional outcomes of older adults with a critical illness. My current work seeks to evaluate the effect of pre-ICU vulnerability factors, particularly frailty, on post-ICU functional outcomes. In addition, I am evaluating the performance of existing restorative interventions in the ICU (i.e. early mobilization) among older versus younger adults. My clinical responsibilities are in the Medical Intensive Care Unit (MICU) of Yale-New Haven Hospital, where I co-lead our early mobilization program. I also co-founded and am co-chair of the Aging and Geriatrics Working Group of the American Thoracic Society (ATS).



Matthew B. Friese, M.D., Ph.D.

Position: Instructor of Anesthesiology

Specialty: Anesthesiology

Affiliation: Harvard Medical School & Brigham and Women's Hospital

Research Interests: Mechanisms of post-anesthetic and post-surgical neural dysfunction

Year of Award: GEMSSTAR 2016

Other Funding: Harvard Anaesthesia T32

Professional Website: [Matthew Friese's Website](#)

Publication Profile: [Matthew Friese's Publications](#)

Contact Info:

Brigham and Women's Hospital

75 Francis St.

Boston, MA 02115

Phone: 617-525-7987

Email: mfriese@bwh.harvard.edu

Matt is a board certified Anesthesiologist and Instructor of Anesthesiology at Harvard Medical School and Brigham and Women's Hospital in Boston, MA. He is a clinical neuroanesthesiologist whose research interest revolves around mechanisms of post-anesthetic and post-surgical neural dysfunction.



Duke University Photography

Rasheeda Kamial Hall MD, MBA, MHSc

Position: Medical Instructor

Specialty(ies): Internal Medicine, Nephrology

Affiliation: Duke University School of Medicine, Durham Veterans Affairs Medical Center

Research Interests: patient-reported outcomes, functional impairment, prediction models

Year of Award: {GEMSSTAR, DWJS, or TFWS} 2015

Other Funding: {i.e. Beeson, K, etc.} American Society of Nephrology Foundation for Kidney Research- AAIM Junior Development Grant in Geriatric Nephrology; Duke CTSA KL2

Professional Website: <https://scholars.duke.edu/person/rasheeda.stephens>

Social Media Feed: https://twitter.com/Rasheeda_HallMD

Publication Profile: <http://www.ncbi.nlm.nih.gov/sites/myncbi/1t3X-yoYpsW/bibliography/40081949/public/?sort=date&direction=descending>

Contact Info: Rasheeda.stephens@dm.duke.edu; 919-660-6861

Rasheeda is a Medical Instructor in the Division of Nephrology at Duke University in Durham, NC. She leads a geriatric nephrology clinic at the Durham Veterans Affairs Medical Center. She is a Butler-Williams Scholar, and her GEMSSTAR funded research evaluates measurement of quality of life in older adults receiving dialysis. She also has funded research that aims to explore functional impairment and physical activity in older adults new to dialysis.



Name: Aluko A. Hope, MD, MSCE

Position: Associate Professor of Clinical Medicine

Specialties: Pulmonary/Critical Care

Affiliation: Albert Einstein College of Medicine

Research Interest: developing approaches to identify critically ill adults who are at high risk of adverse outcome after critical illness; improving mobility and cognitive outcomes in adult ICU survivors; understanding the impact of critical illness in the biology of aging

Year of Award: GEMSSTAR 2015

Professional Website: <https://www.einstein.yu.edu/departments/medicine/divisions/critical-care/faculty/profile.asp?id=13154>

Twitter Feed: @hopealuko

Contact Information: Email: ahope@montefiore.org; 917 715 5973

Aluko is a clinician, educator and researcher within the Division of Critical Care Medicine at Montefiore Medical Center and Albert Einstein College of Medicine. His teaching and research focuses on integrating geriatric principles into the care of critically ill older patients. He is currently a GEMSSTAR scholar and his project focuses on developing complementary approaches to measure pre-hospital frailty in critically ill adults. He is board certified in Internal Medicine, Pulmonary and Critical Care Medicine.



Name: Robin Jump, MD, PhD

Position: Assistant Professor of Medicine

Specialty(ies): Infectious Diseases

Affiliation: Louis Stokes Cleveland VA Medical Center
Case Western Reserve University, Cleveland OH

Research Interests:

Year of Award: GEMSSTAR and TFWS 2011-2012

Other Funding: Pilot Merit from HSR&D at VA (2016)
Co-I on HSR&D Merit Review (2016)
Co-I on AHRQ CUSP (2016)

Publication Profile:

http://www.ncbi.nlm.nih.gov/sites/myncbi/1BIFvhJa6_a/bibliographhy/40016918/public/?sort=date&direction=descending

Contact Info: Robin.Jump@va.gov 216-791-3800, 5628
robinjump@gmail.com 440-915-8662

Dr. Jump is a physician-scientist with the Geriatric Research, Education and Clinical Center (GRECC) and the Louis Stokes Cleveland Veterans Affairs Medical Center. Through a novel approach involving infectious disease consultations, she implemented an antimicrobial stewardship program at the Cleveland Veterans Affairs long-term care facility. Together with collaborators from several other VISNs, she implemented an educational program designed to improve the care of older veterans. Her long-term academic interests are to decrease the adverse effects of antimicrobials in older adults.



Name: Alok Kapoor

Affiliation: University of Massachusetts Medical School

Research Interests: perioperative medicine, transitions and care, geriatrics

Professional Website: <http://profiles.umassmed.edu/profiles/display/8664148>

Social Media Feed: none

Publication Profile: [Alok Kapoor pubmed articles](#)

As an investigator, I am developing expertise in evaluating and integrating different geriatric assessments and interventions for the older adult hospitalized for acute medical or surgical indication. These include self-reported functional status, observed performance such as gait speed, and inventories of comorbid disease. I have also developed a number of projects related to anticoagulation both in the setting of prophylaxis and treatment. Finally I have participated in home visits with home nursing association in central Massachusetts to better evaluate older adults after discharge who may not be proficient in administering their own medications.



Name: Jennifer C. Lai, MD, MBA

Position: Assistant Professor

Specialty(ies): Hepatology / Liver Transplantation

Affiliation: University of California, San Francisco

Research Interests: Frailty in liver transplantation

Year of Award: GEMSSTAR 2013

Other Funding: Beeson 2014

American Society of Transplantation Faculty Career Development Award 2016

UCSF Pepper Center Advanced Scholar Award 2016

UCSF Department of Medicine Patient Cohort Expansion Award 2016

Professional Website: profiles.ucsf.edu/jenniferlai

Publication Profile:

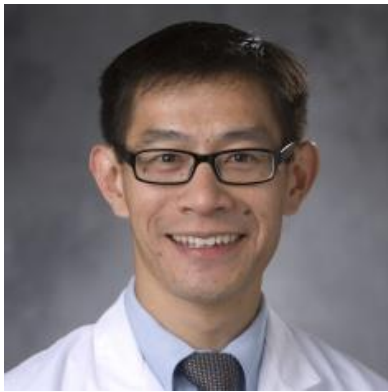
<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/43405728/?sort=date&direction=descending>

Contact Info: jennifer.lai@ucsf.edu

Dr. Lai is a general and transplant hepatologist who specializes in caring for patients with chronic viral hepatitis, autoimmune disorders, and cirrhosis, particularly those awaiting liver transplantation.

Her academic mission is to improve the lives of patients with end-stage liver disease through the application of core principles of geriatrics into the care of patients with cirrhosis. She is principal investigator of the NIH-funded Functional Assessment in Liver Transplantation (FrAILT) Study, which is actively enrolling patients with end-stage liver disease awaiting liver transplantation for assessments of physical frailty both before and after liver transplantation.

After earning her undergraduate degree from Stanford University and combined MD/MBA degrees from Tufts University, she completed residency at the New York Presbyterian Hospital-Columbia and gastroenterology and advanced/transplant hepatology fellowships at UCSF. She serves as Associate Editor for the American Journal of Transplantation, Transplantation, and is a member for the Editorial Board for Liver Transplantation.



Name: Richard H. Lee, MD, MPH

Position: Assistant Professor of Medicine

Specialty(ies): Internal Medicine; Geriatric Medicine; Endocrinology

Affiliation: Duke University

Research Interests: Clinical/translational - Osteoporosis, diabetes-related fractures; Health Services
- secondary fracture prevention

Year of Award: 2014

Other Funding: Claude D. Pepper OAIC at Duke University, American Diabetes Association

Professional Website:

Social Media Feed:

Publication Profile:

Contact Info: Email – r.lee@duke.edu

Richard is dual-board certified in Endocrinology and Geriatric Medicine and is an Assistant Professor in the Department of Medicine, Division of Endocrinology, Metabolism, and Nutrition at Duke University in Durham, NC, with clinical duties at Duke clinics and the Durham VAMC. He is a T. Franklin Williams scholar with clinical and translational research interests in osteoporosis and metabolic bone disease, as well as health services research interests in secondary fracture prevention. He is co-director for the Nutrition and Metabolism track of the Duke Scholars in Molecular Medicine program. He is also chair of the Institutional Review Board at Duke University Health Systems.



Name: Brendan P. Lucey, MD

Position: Assistant Professor of Neurology

Specialty(ies): Sleep Medicine, Neurology, EEG

Affiliation: Washington University School of Medicine

Research Interests: Sleep and Alzheimer's disease

Year of Award: 2014

Other Funding: BrightFocus Foundation

Professional Website: <https://hopecenter.wustl.edu/?faculty=brendan-lucey-md>

Social Media Feed: None

Publication Profile:

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/47867065/?sort=date&direction=descending>

Contact Info: Email: luceyb@wustl.edu

Brendan is board-certified in Neurology with added qualifications in clinical neurophysiology and sleep medicine. He is an Assistant Professor in the Sleep Medicine Division of the Department of Neurology at Washington University in St Louis. He is a GEMSSTAR scholar and is also supported by a KL2 career development award through the Washington University CTSA. His research interests include sleep, aging, and neurodegeneration with a specific focus on Alzheimer's disease.



Name: Anil N. Makam, MD, MAS

Position: Assistant Professor of Medicine and Clinical Sciences

Specialty(ies): General Internal Medicine, Hospital Medicine

Affiliation: UT Southwestern Medical Center; Parkland Memorial Hospital

Research Interests: Post-acute care in elderly (long-term acute care hospitals); outcomes and health services research; epidemiology; evidence-based medicine

Year of Award: GEMSSTAR Scholar 2016

Other Funding: NIA K23 (2016-2021)

Professional Website: <http://profiles.utsouthwestern.edu/profile/95784/anil-makam.html>

Social Media Feed: <https://twitter.com/anilmakam> (Twitter: @anilmakam)

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/anil.makam.1/bibliography/43900581/public/?sort=date&direction=descending>

Contact Info: anil.makam@utsouthwestern.edu | (t) 214-648-3272

Anil is a physician investigator and a practicing general internist with a focus in hospital medicine. He is an Assistant Professor in the Departments of Internal Medicine and Clinical Sciences at UT Southwestern Medical Center, with primary clinical responsibilities at Parkland Memorial Hospital. His research focuses on the impact of post-acute care on clinical and rehabilitation outcomes after acute illness in the elderly, with an interest in long-term acute care hospitals. In addition, his research interests include health services and epidemiology among hospitalized adults. He frequently publishes his research in leading general medicine journals (*JAMA Int Med*; *JGIM*, *JAGS*, *J Hosp Med*). He currently serves as an Associate Editor for the *Journal of Hospital Medicine*.



Name: Rowena McBeath, M.D., Ph.D

Position: Assistant Professor of Orthopaedic Surgery/Attending Hand Surgeon

Specialty(ies): Hand and Upper Extremity Surgery, Orthopaedic Surgery

Affiliation: Thomas Jefferson University

Research Interests: connective tissue biology, adult stem cell biology

Year of Award: GEMSSTAR 2014

Other Funding: OREF, Hand Rehabilitation Foundation, ASSH

Professional Website: {link to your lab or institutions web page}

Social Media Feed: N/A

Publication Profile: <http://www.ncbi.nlm.nih.gov/pubmed/?term=mcbeath+r>

Contact Info: rowena.mcbeath@gmail.com; rowena.mcbeath@jefferson.edu; rmcbeath@handcenters.com

Rowena McBeath is board-certified in Orthopaedic Surgery (2014) and is Assistant Professor of Orthopaedic Surgery at Thomas Jefferson University, and Attending Hand Surgeon at The Philadelphia Hand Center. She received her M.D., Ph.D degrees as a graduate of the MSTP program at Johns Hopkins University School of Medicine (2006), completed her Orthopaedic Surgery Residency training at Washington University in St. Louis School of Medicine (2011), and Hand & Upper Extremity Fellowship from The Philadelphia Hand Center/Thomas Jefferson University (2012). She is a GEMSSTAR/Jahnigen scholar (2014) with funded research interests concerning connective tissue cell differentiation and the dysregulation of differentiation as a cause of tendinopathy, which occurs in the aged population. She is Associate Editor of the Basic Science division of Hand-E, the electronic forum of the American Journal of Hand Surgery.



Name: Kevin G. Munjal, MD, MPH, MSCR

Position: Assistant Professor of Emergency Medicine

Specialty(ies): Emergency Medicine, Health Policy & Evidence

Affiliation: Icahn School of Medicine at Mount Sinai

Research Interests: Emergency Medical Services, Reimbursement Policy, Fall Prevention

Year of Award: 2015

Other Funding: Center for Medicare & Medicaid Innovation, National Highway Traffic Safety Administration, The Fan Fox and Leslie R. Samuels Foundation, David L. Klein Foundation

Professional Website: <http://www.mountsinai.org/profiles/kevin-munjal>

New York Mobile Integrated Healthcare Association: <http://nymiha.org>

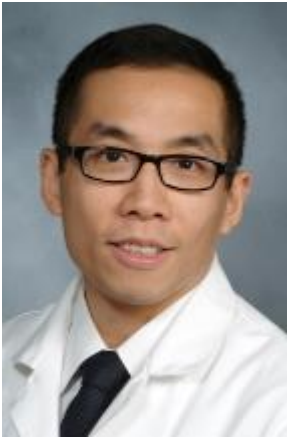
Promoting Innovations in EMS – Project Website: <http://emsinnovations.org/>

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/kevin.munjal.1/bibliograph/47913955/public/?sort=date&direction=descending>

Contact Info: Email: kevin.munjal@mountsinai.org

Kevin is a board certified Emergency Medicine & EMS Physician at the Mount Sinai Health System in New York. He completed an EMS fellowship with the New York City Fire Department and Master's degrees in Public Health (Columbia University) and Clinical Research (Mount Sinai). He has been funded by NHLBI as part of the Emergency Medicine K12 Scholars Program, and is currently funded by the National Institute for Aging for his innovative work used EMS providers to assist in fall prevention and improving the transition of care after hospitalizations. He is also funded by the Center for Medicare and Medicaid Innovation for his work in community paramedicine and by the National Highway Traffic Safety Administration to develop a national policy document on "Promoting Innovations in EMS." He is Founder and Chair of the NY Mobile Integrated Healthcare Association (NYMIHA), an organization seeking to better integrate EMS providers within our healthcare system. He was recently recognized by the New York City Regional EMS Council as the 2016 Physician of Excellence for his leadership in EMS policy, research and innovation.



Veerawat Phongtankuel, MD

Position: Instructor of Medicine

Specialty(ies): Internal Medicine, Geriatrics

Affiliation: Weill Cornell Medical College

Research Interests: Home hospice care, Symptom burden, Hospitalization

Year of Award: {GEMSSTAR, DWJS, or TFWS} 2016

Other Funding: {i.e. Beeson, K, etc.} N/A

Professional Website: <https://weillcornell.org/services/geriatrics-and-palliative-medicine>

Social Media Feed: N/A

Publication Profile – Google Scholar Link:

https://scholar.google.com/scholar?as_ylo=2012&q=veerawat+phongtankuel&hl=en&as_sdt=0,33

Contact Info: Email: Vep9012@med.cornell.edu

Vee is an Instructor in Medicine at New York Presbyterian-Weill Cornell Medical College in the Division of Geriatrics and Palliative Medicine. He is an AFAR/Hartford Foundation COE Scholar in Geriatric Medicine and an Empire Clinical Research Investigator Program (ECRIP) Scholar. Vee's research interest revolves around improving care for older adults and caregivers in the home hospice setting. His previous and current research examines reasons for hospitalization in the home hospice population and for this recently awarded GEMSSTAR grant, he is exploring symptom burden in home hospice patients prior to discharge.



Name: Rajeev S. Ramchandran

Position: Associate Professor of Ophthalmology

Specialty: Ophthalmology, Vitreoretinal Surgery

Affiliation:

University of Rochester School of Medicine, Department of Ophthalmology
University of Rochester Medical Center, Flaum Eye Institute

Research Interests:

Improvement Science
Implementation Science
Population Health Management and Services Research and Telehealth

Year of Award: GEMSSTAR 2014, Jahnigen 2014

Other Funding: Prevent Blindness America, 2016 Joan Angle Investigator Award

Professional Website: <https://www.urmc.rochester.edu/people/21449130-rajeev-s-ramchandran/researchers>

Contact Info:

rajeev_ramchandran@urmc.rochester.edu

After graduating from the University of Pennsylvania, Rajeev Ramchandran received his MD from the University of Rochester School of Medicine with Distinction in Research and completed his ophthalmology residency at the Duke Eye Center. He returned to his hometown of Rochester, NY for his fellowship in vitreoretinal surgery, where he stayed on as faculty vitreoretinal faculty in the University of Rochester Medical School's, Department of Ophthalmology, Flaum Eye Institute. Along with being an expert clinician treating retinal disorders in both pediatric and adult populations, Dr. Ramchandran collaborates with human behavior and education specialists, public health experts, and community based researchers to improve visual outcomes in the real world using telemedicine to enhance ocular and vision health surveillance. His expertise includes the use of ocular diagnostic equipment in non-eye care settings to improve population based eye health through disease surveillance and personalized health education. Dr. Ramchandran co-founded the University of Rochester Telehealth Consortium, which has championed the cause of remotely connecting providers and patients to disseminate knowledge and improve access to high quality care at affordable cost since 2011.



Name: Scott E. Regenbogen, MD, MPH

Position: Assistant Professor of Surgery
Specialty(ies): Colon and Rectal Surgery

Affiliation: University of Michigan

Research Interests: performance evaluation, surgical safety and quality improvement, cost, quality and outcomes of major inpatient surgery in older adults

Year of Award: GEMSSTAR 2014-16

Other Funding: K08 NIA 2015-20, ASCRS CDA 2014-16

Professional Website: <http://surgery.med.umich.edu/general/colorectal/patient/team/sregenbo.shtml>

Social Media Feed: Twitter @scottregenbogen

Publication Profile: <https://scholar.google.com/citations?user=LTbsTaMAAAAJ&hl=en>

Contact Info:

Scott E. Regenbogen, MD, MPH

Phone: 734-647-9710; Fax 734-232-6189

Email: sregenbo@med.umich.edu

Scott Regenbogen, MD, MPH is an Assistant Professor of Surgery in the Division of Colorectal Surgery. He graduated from Princeton University with an A.B. in psychology, and received his M.D. degree from the University of California, San Francisco. He completed General Surgery residency at the Massachusetts General Hospital, including three years as a Postdoctoral Fellow in Health Services Research, and was awarded a Master's in Public Health from the Harvard School of Public Health. He then completed fellowship training in Colon and Rectal Surgery at the Lahey Clinic, and joined the faculty of the University of Michigan in 2011.

Dr. Regenbogen's clinical practice includes the evaluation and management of benign and neoplastic diseases of the small bowel, colon, rectum, and anus. He has a particular interest in the use of laparoscopic techniques for the management of colorectal cancer, diverticular disease and inflammatory bowel disease. Dr. Regenbogen is also a health services researcher, with expertise in performance evaluation, and surgical safety and quality improvement. His current research focuses on the cost, quality and outcomes of major inpatient surgery in older adults.



Name: Matthew Rondina, MD, MS, FAHA

Position: Associate Professor of Medicine

Specialty(ies): Internal Medicine, Thrombosis

Affiliation: University of Utah and the George E. Wahlen VAMC GRECC

Research Interests: Platelets, Megakaryocytes, Thrombo-Inflammation

Year of Award: 2011

Other Funding: K23, R01s

Professional Website: <http://healthcare.utah.edu/fad/mddetail.php?physicianID=u0057939>

Social Media Feed: N/A

Publication Profile: <http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/40541226/>

Contact Info: matthew.rondina@hsc.utah.edu, 801-585-0950

I grew up in Boston and completed my training at the University of Utah in 2006. I subsequently completed a Master's of Science in Clinical Investigation (MSCI) degree through the University of Utah Center for Clinical and Translational Science (CCTS). I have been a faculty member of the University of Utah Department of Medicine since 2006, where I first served as Chief Medical Resident. My clinical practice is focused on the prevention and treatment of thrombotic disorders, including deep vein thrombosis, pulmonary embolism, stroke, and peripheral vascular disease. My research focuses on platelet and megakaryocyte functions in thrombotic and inflammatory disorders. My research lab is housed within the Molecular Medicine Program and studies diseases such as sepsis, metabolic disorders, HIV, and aging.



Tony Rosen, MD MPH

Position: Instructor in Medicine, Attending Emergency Physician

Specialty: Emergency Medicine

Affiliation: Weill Cornell Medical College

Research Interests: elder abuse and neglect, geriatric injury prevention, emergency care for older adults

Year of Award: GEMSSTAR 2014 (Improving Recognition of Elder Abuse through Analysis of Highly Adjudicated Cases)

Other Funding: Fan Fox and Leslie Samuels Foundation 2016 (A Pilot Program for Implementing and Evaluating the Vulnerable Elder Protection Team), Elder Justice Foundation 2016 (The Impact and Efficacy of Prosecutors' Responses to Elder Abuse, Neglect, and Exploitation: Defining and Measuring Evidence of Best Practices), John A. Hartford Foundation Change AGENTS Grant 2016 (Developing the Vulnerable Elder Protection Team: An Emergency Department-Based Multi-Disciplinary Intervention to Improve Care for Potential Victims of Elder Abuse and Neglect), Department of Justice 2016 (Practical Tool for Medical Practitioners when Examining an Elder who Might have been Abused), Medical Student Training in Aging Research (MSTAR) Grant 2007 (Resident-to-Resident Aggression in Long-Term Care Facilities)

Professional Website: <https://weillcornell.org/anthonyrosen>

Publication Profile:

Google Scholar:

https://scholar.google.com/citations?hl=en&user=9srgGioAAAAJ&view_op=list_works

MyBibliography:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/anthony.rosen.1/bibliography/48575347/public/?sort=date&direction=ascending>

Contact Information: Email: aer2006@med.cornell.edu. Cellular: 917-797-4013

Tony is a researcher in elder abuse and geriatric injury prevention at Weill Cornell Medical College and a practicing Emergency Physician at New York-Presbyterian Hospital. Tony's GEMSSTAR research explores forensic injury patterns in physical elder abuse. In collaboration with district attorney's offices, Tony and his team have examined police, legal, and medical records from highly adjudicated cases of elder mistreatment to improve understanding of the phenomenon. He has led the development of an Emergency Department-based multi-disciplinary Vulnerable Elder Protection Team (VEPT) to assess, treat, and ensure the safety of elder abuse and neglect victims while collecting evidence and working closely with the authorities. Tony's work has also explored a specific, under-recognized type of elder abuse, resident-to-resident aggression in nursing homes. He has assisted in the development and evaluation of clinical protocols in ED assessment / management of agitated delirium and appropriate use of indwelling urinary catheters. Tony serves on the Executive Committee of the Academy of Geriatric Emergency Medicine. He serves on the Steering Committee of the New York City Elder Abuse Center and a physician member of multi-disciplinary elder abuse response teams in Manhattan and Brooklyn. He is also a member of the New York City Violent Death Reporting System Advisory Board and the NYC Elder Fatality Review Team.



Name: Katherine R. Schafer MD

Position: Assistant Professor

Specialty(ies): Internal Medicine, Infectious Diseases

Affiliation: Wake Forest University Health Sciences

Research Interests: biopsychosocial approaches to improving HIV care across the continuum (prevention, diagnosis, linkage, treatment, retention, and virologic suppression) and age spectrum

Year of Award: 2015

Other Funding: HRSA SPNS (co-investigator)

Professional Website: <http://www.wakehealth.edu/Faculty/Schafer-Katherine-Rachel.htm>

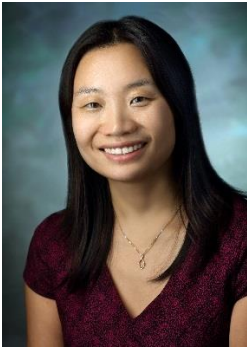
Social Media Feed: none

Publication Profile:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1jiUcs5VhdRkD/bibliography/40169303/public/?sort=date&direction=ascending>

Contact Info: kschafer@wakehealth.edu
336-716-6342

Dr. Katherine Schafer received her undergraduate and medical degrees at the University of North Carolina at Chapel Hill. She completed her postgraduate training, including service as a Chief Resident and four year Infectious Disease fellowship, at the University of Virginia School of Medicine. Dr. Schafer is boarded in both Internal Medicine and Infectious Diseases. She is currently an Assistant Professor of Medicine at Wake Forest University Health Sciences in Winston-Salem, NC where she engages in clinical, educational, and research activities. Her educational roles include teaching and curriculum development for sexual health, LGBTQ health, and intimate partner violence for the first and second year medical students, as well as directing the HIV curriculum for the Infectious Disease Fellowship. Her research interests focus on rural HIV with an emphasis on stress and aging as well as novel methods to promote engagement in HIV care. In addition to her GEMSSTAR project, she is a co-investigator on a HRSA SPNS-funded study investigating the use of social media to improve linkage and retention and care for MSM with HIV.



Nancy Schoenborn, MD

Position: Assistant Professor of Medicine and Oncology

Specialty: Geriatric Medicine, Internal Medicine

Affiliation: Johns Hopkins School of Medicine

Research Interests: Incorporating prognosis into decision making of older adults, prognosis communication, cancer screening

Year of Award: GEMSSTAR and TFWS 2015-2017

Other Funding: American Cancer Society Cancer Control Career Development Award for Primary Care Physicians, Johns Hopkins KL2 Clinical Scholar.

Professional Website:

http://www.hopkinsmedicine.org/geriatric_medicine_gerontology/aging_research/the_center_for_translative_geriatric_research/

Social Media Feed: NA

Publication Profile: <http://www.ncbi.nlm.nih.gov/sites/myncbi/1LUqjtfRph-k9/bibliography/45711756/public/?sort=date&direction=ascending/>

Contact Info: nancyli@jhmi.edu, 410 550 7142 (phone)

Nancy is an Assistant Professor in the Johns Hopkins School of Medicine's Division of Geriatric Medicine and Gerontology and a member of the Sidney Kimmel Comprehensive Cancer Center. She is a T. Franklin Williams Scholar. Her research goal is to enhance patient-centered care of older adults by improving how we communicate and incorporate life expectancy to inform clinical decisions; she focuses on decisions around cancer screening in particular. Her recent work studying primary care clinicians' views on how to incorporate life expectancy in the care of older adults resulted in a publication in JAMA Internal Medicine (JAMA Intern Med. 2016 May 1;176(5):671-8). She was awarded the New Investigator Award by the American Geriatrics Society in 2016. She leads the Geriatric Interest Group at the Society of General Internal Medicine and is part of the Geriatrics Task Force.



Name: Christina Shenvi, MD, PhD

Position: Assistant Professor, Assistant Residency Director

Specialty(ies): Emergency Medicine, Geriatric Emergency Medicine

Affiliation: University of North Carolina School of Medicine - Chapel Hill, NC

Research Interests: Geriatric Emergency Medicine, Alcohol Abuse, Residency Education

Year of Award: GEMSSTAR 2014

Other Funding: Jahnigen Career Development Award

Professional Website:

www.med.unc.edu/emergmed/about-us/people/faculty/christina-l-shenvi-md-phd

www.gempodcast.com

Social Media Feed:

twitter.com/clshenvi

twitter.com/gempodcast

Contact Info:

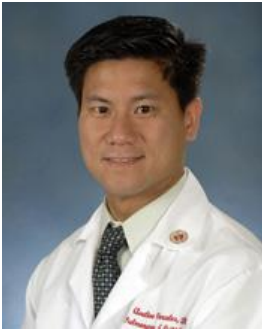
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302-353-6766

Dr. Shenvi received her undergraduate degree in Chemistry from Princeton University, PhD from UC-Berkeley in Chemical Biology, and MD from Yale Medical School. She then completed residency training in Emergency Medicine at UNC, and stayed at UNC for fellowship training in Geriatric Emergency Medicine. Dr. Shenvi's career goals are to help improve the care of older adults in the ED through education, and to improve residency education in the field of geriatric emergency medicine.

Her primary research interest is in high risk alcohol use among older adults. Her current research focuses on the ability to screen and identify older adults with high risk alcohol use in the Emergency Department (ED), and the effect of brief interventions on rates of future alcohol use. The overall goal of her research is to reduce the morbidity and mortality associated with alcohol use among older adults through interventions in the ED.

Dr. Shenvi also runs the free podcast, GEMCAST (www.gempodcast.com) which provides a platform to discuss and educate medical providers on topics related to Geriatric Emergency Medicine, blogs on GEM topics for www.aliem.com, and writes the monthly Rx pad column for EP Monthly (www.epmonthly.com).



Avelino C. Verceles, MD, MS

Affiliation: Associate Professor of Medicine, University of Maryland School of Medicine, Division of Pulmonary, Critical Care, and Sleep Medicine

Research Interests: Functional outcomes in older survivors of critical illness, weaning from prolonged mechanical ventilation, physical rehabilitation and nutrition supplementation in older critically ill patients

Professional

Website: <http://medschool.umaryland.edu/facultyresearchprofile/viewprofile.aspx?id=9632>

Publication Profile: <http://www.ncbi.nlm.nih.gov/pubmed/?term=verceles+a>

Avelino is an Associate Professor of Medicine in the Division of Pulmonary and Critical Care, at the University of Maryland School of Medicine, a former Claude D. Pepper Junior Faculty Scholar with the Older Americans Independence Center at the University of Maryland and recently completed a Special Research Fellowship sponsored by the Baltimore Veterans' Administration Geriatrics Research, Education and Clinical Center. As a Pepper Junior Faculty Scholar he developed a multimodal rehabilitation program to address the musculoskeletal disabilities and metabolic abnormalities in mechanically ventilated survivors of critical illness suffering from post-intensive care syndrome. For this work, he was awarded a Grant for Early Medical and Surgical Subspecialists in Transition to Aging Research (GEMSSTAR, R03) Award, and a foundation award sponsored by the American Thoracic Society and the Alliance for Academic for Internal Medicine and the Association of Specialty Professions. His GEMSSTAR R03 funded work demonstrated that older mechanically ventilated survivors of critical illness are physically debilitated and functionally disabled, but aggressive mobility-targeted rehabilitation significantly improved their chance of weaning from prolonged mechanical ventilation and discharge to home. His current funded work examines the effects of adding neuromuscular electric stimulation and high protein supplementation to mobility-based physical rehabilitation on functional and clinical outcomes in older, critically ill patients while in the ICU.



Yuan Yuan, M.D., Ph.D.
Assistant Professor, Medical Oncology and Therapeutics
Research
City of Hope, Duarte, CA

Research Interests: Aging biomarker in Cancer; Novel therapeutics for metastatic triple negative breast cancer

Year of Award: GEMSSTAR 2015-2017

Other Funding: NIHK-12, STOP Cancer Career Development Award

Professional Website: <http://www.cityofhope.org/people/yuan-yuan>

Social Media Feed: <https://www.youtube.com/watch?v=rWtYikK8rH8>

Publication Profile: <http://www.ncbi.nlm.nih.gov/pubmed/?term=yuan+yuan>

Contact Info: yuyuan@coh.org; cell: 626-678-4591

Bio:

Yuan Yuan, M.D., Ph.D., joined the Department of Medical Oncology & Therapeutics as an assistant professor specializing in breast oncology in 2012. She joins City of Hope from Loma Linda University Medical Center where she was an assistant professor in the Division of Medical Oncology and Hematology, and a principal investigator for multiple breast cancer trials.

Dr. Yuan received her bachelor of medicine degree from Xuzhou Medical College in Xuzhou, China, and an M.S. in oncology from Peking Union Medical College in Beijing, China. She went on to complete a Ph.D. in biochemistry and molecular biology from the University of California, Riverside. She then completed a research fellowship at the Scripps Research Institute in La Jolla, CA, followed by an internship and residency in internal medicine at the New York Downtown Hospital in New York, NY. She furthered her training with a hematology and oncology fellowship at the New York University Medical Center, under the direction of Dr. Franco Muggia. She is currently a NIH K-12 scholar and a recipient of the STOP Cancer Career Development Award. She is currently working with her mentor Dr. Arti Hurria in studying biomarkers of aging IL-6, CRP and D-dimer in patient with breast cancer undergoing chemotherapy.

Dr. Yuan has published 10 articles in the peer-reviewed literature and has been invited to present at national and international meetings. She is board certified in internal medicine, hematology and oncology.

POSTER 1: Age-related Change in FoxO3 Signaling Reduces Suppressive Behavior of Muscularis Macrophages and Leads to Inflammation-mediated Enteric Neuronal Loss

Laren Becker, MD, PhD, Aida Habtezion, MD

Stanford School of Medicine, Division of Gastroenterology and Hepatology
Stanford, California, USA

Degenerative changes to the enteric nervous system (ENS) are believed to play a central role in age-related GI disorders including constipation and fecal incontinence. Chronic inflammation has been postulated to cause these age-dependent changes. We have previously shown that an age-related shift from anti-inflammatory to pro-inflammatory phenotype in muscularis macrophages (MMs) drives increased inflammation in the ENS. Here we show that intrinsic change in MMs through FoxO3 signaling causes an age-dependent loss of anti-inflammatory phenotype. We generated bone marrow (BM) chimeras and performed immunophenotyping of the intestinal muscularis layer using flow cytometry. BM-derived macrophages were generated and induced to M1 or M2 polarization states (M1-BMDM or M2-BMDM). Lymphocyte suppression assay was performed by culturing T cells with M2-BMDMs. We found that MMs sorted from young mice engrafted with old BM demonstrated reduced expression of 'M2' marker CD206 compared to Y→Y ($p < .05$). We found a similar decrease in 'M2' markers ($p < .05$) in M2-BMDMs from old mice. Using a T cell suppression assay, we young M2-BMDM demonstrated increased ability to suppress T cells compared to old ($p < .01$) suggesting impaired function of M2 macrophages with age. Since FoxO3 has been implicated in longevity and inflammation, we evaluated whether alterations in FoxO3 account for these intrinsic differences in macrophages. We found reduction in expression of FoxO3 in MMs and M2-BMDMs from old mice. Furthermore, M2-BMDMs from FoxO3^{-/-} mice demonstrated reduction in CD206 ($P < .001$). FoxO3^{-/-} mice showed increased expression of pSTAT3 in enteric neurons compared to WT mice suggesting elevated neuroinflammation with FoxO3 deficiency. This increased neuroinflammation corresponded with increased expression of the apoptosis marker Cleaved Caspase and reduced enteric neuronal density compared to WT (all $p < .05$). These neurodegenerative findings mirror the changes observed in old mice compared to young. In conclusion, this data suggests that intrinsic changes in macrophages due to age-dependent reduction in FoxO3 cause diminished anti-inflammatory properties and leads to enteric neuroinflammation.

POSTER 2: Lidocaine Impairs Proliferative and Biosynthetic Functions of Aged Human Dermal Fibroblasts.

Bentov I, Damodarasamy M, Spiekerman C, Reed MJ.

BACKGROUND:

The aged are at increased risk of postoperative wound healing complications. Because local anesthetics are infiltrated commonly into the dermis of surgical wounds, we sought to determine whether local anesthetics adversely affect proliferative and biosynthetic functions of dermal fibroblasts. We also evaluated the effect of local anesthetics on insulinlike growth factor-1 (IGF-1) and transforming growth factor- β 1 (TGF- β 1), growth factors that are important regulators of wound healing.

METHODS:

Human dermal fibroblasts (HFB) from aged and young donors were exposed to local anesthetic agents at clinically relevant concentrations. We screened the effects of lidocaine, bupivacaine, mepivacaine, and ropivacaine on proliferation of HFB. Lidocaine was most detrimental to proliferation in HFB. We then evaluated the effect of lidocaine on expression and function of the growth factors, IGF-1 and TGF- β 1. Lastly, concurrent exposure to lidocaine and IGF-1 or TGF- β 1 was evaluated for their effects on proliferation and expression of dermal collagens, respectively.

RESULTS:

Lidocaine and mepivacaine inhibited proliferation in aged HFB (for lidocaine 88% of control, 95% confidence interval [CI], 80%–98%, $P = .009$ and for mepivacaine 90% of control, 95% CI, 81%–99%, $P = .032$) but not in young HFB. Ropivacaine and bupivacaine did not inhibit proliferation. Because of the clinical utility of lidocaine relative to mepivacaine, we focused on lidocaine. Lidocaine decreased proliferation in aged HFB, which was abrogated by IGF-1. Lidocaine inhibited transcripts for IGF-1 and insulin-like growth factor-1 receptor (IGF1R) in fibroblasts from aged donors (IGF-1, log₂ fold-change -1.25 [42% of control, 95% CI, 19%–92%, $P = .035$] and IGF1R, log₂ fold-change -1.00 [50% of control, 95% CI, 31%–81%, $P = .014$]). In contrast, lidocaine did not affect the expression of IGF-1 or IGF1R transcripts in the young HFB. Transcripts for collagen III were decreased after lidocaine exposure in aged and young HFB (log₂ fold-change -1.28 [41% of control, 95% CI, 20%–83%, $P = .022$] in aged HFB and log₂ fold-change -1.60 [33% of control, 95% CI, 15%–73%, $P = .019$] in young HFB). Transcripts for collagen I were decreased in aged HFB (log₂ fold-change -1.82 [28% of control, 95% CI, 14%–58%, $P = .006$]) but not in the young HFB. Similar to the transcripts, lidocaine also inhibited the protein expression of collagen III in young and aged HFB (log₂ fold-change -1.79 [29% of control, 95% CI, 18%–47%, $P = .003$] in young HFB and log₂ fold-change -1.76 [30% of control, 95% CI, 9%–93%, $P = .043$] in aged HFB). The effect of lidocaine on the expression of collagen III protein was obviated by TGF- β 1 in both young and aged HFB.

CONCLUSIONS:

Our results show that lidocaine inhibits processes relevant to dermal repair in aged HFB. The detrimental responses to lidocaine are due, in part, to interactions with IGF-1 and TGF- β 1.

POSTER 3: Markers of Alzheimer's Disease and neuroCognitive Outcomes After Perioperative Care (MADCO-PC): A Prospective Matched Cohort Study to Study Relationships between Perioperative Changes in Cerebrospinal Alzheimer's Disease biomarkers, Functional Brain Connectivity, Delirium and Cognition

Miles Berger MD PhD, Jessica Carter MD, Joseph Chapman cRNA, Jake Thomas, Faris Sbahi, Eugene Moretti MD, Christopher Young MD, John Lemm MD, Nathan Waldron MD, Jeffrey Gadsden MD, Aaron Sandler MD, Brian Colin MD, Leonard Talbot MD, Brian Ohlendorf MD, Shelly Wang MD, Scott Runyon MD, Joseph Mathew MD MBA MHSc, for the **Markers of Alzheimer's Disease and neuroCognitive Outcomes after Perioperative Care (MADCO-PC)** investigators*.

Introduction: Four lines of evidence suggest that anesthesia and surgery may promote Alzheimer's disease (AD) pathogenesis. First, anesthetic drugs promote AD pathology *in vitro* and in mouse models. Second, CSF AD biomarker levels rise within 24 hours after perioperative care. Third, anesthesia and surgery cause post-operative cognitive dysfunction and delirium, which have some similarities to symptoms seen in early AD. Fourth, two large retrospective studies have found that patients who have had anesthesia and surgery have a 1.5-2 fold increased risk of developing AD. Here, we examine whether perioperative care-induced changes in AD pathogenesis are associated with cognitive dysfunction or delirium after anesthesia and surgery.

Methods: With IRB approval, we are prospectively enrolling patients age 60 and older having surgery scheduled to last at least 2 hours, as well as age-, sex- and education-level matched controls (i.e. community dwelling older adults not having surgery). All patients undergo a baseline neuropsychological test battery before and then again 6 weeks and 1 year after surgery, as well as postoperative delirium screening. CSF and blood samples are collected just before surgery, 24 hours later, and again 6 weeks and 1 year later. Functional MRI scans are completed on a subset of these patients before and 6 weeks after surgery, and at the cognate time intervals in the non-surgical controls.

The primary outcome measure is the correlation between the perioperative change in CSF tau levels (an AD biomarker) and the perioperative cognitive change index. Planned enrollment is 108 surgical patients and 54 non-surgical controls.

Results: We have screened 2485 and enrolled 133 surgical patients, and we have screened 13 and enrolled 4 non-surgical controls. Out of the 133 enrolled surgical patients, 101 have completed their 6 week follow up session, and 5 more are scheduled for 6 week follow up sessions within the next 6 weeks; the remainder were lost to follow up. Fifty-six of these surgical patients have undergone fMRI scans at the preoperative and 6 week postoperative testing sessions.

Of the 4 non-surgical controls, 2 have completed their 6 week follow up session, and 2 are scheduled for follow up sessions in the next 6 weeks. All of these non-surgical controls have undergone fMRI scans. In total, we have obtained 329 individual CSF samples from the surgical and non-surgical patients enrolled in this study.

Discussion: These data demonstrate the feasibility of perioperative CSF, cognitive, and fMRI testing. Further data analysis will provide insights into the relationship between perioperative changes in AD pathogenesis, cognitive function and functional brain connectivity.

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Host Response to Pessaries in the Postmenopausal Vagina

Cynthia Brincat

Specific Aims: One in four US women report at least one pelvic floor disorder such as prolapse, urinary, or fecal incontinence, with incidence increasing with age. Nearly one in five US women undergo surgery for these issues by age 80. The only meaningful alternative to pelvic floor surgery is the pessary, an intravaginal device that relieves symptoms and provides support to the pelvic organs. **Successful pessary use provides better care and a more effective treatment option for older patients with complex medical conditions.** Unfortunately, approximately 50% of patients who undergo pessary treatment do not continue with this non-surgical option. These women go untreated, or proceed to pelvic floor surgery with an increased risk of peri-operative complications and death directly related to increasing age. To avoid surgical risks in aged women, there is a critical need to understand why women do not continue with treatment. This study will focus on the host response to a pessary. **Our long-term goal is to maximize pessary use in order to reduce surgical interventions in aged women.** *Ultimately, we aim to identify barriers to effective non-surgical management of pelvic floor disorders in the elderly.*

There is a paucity of data on the vaginal environment in elderly women with very little known about the vaginal microbial community other than the observation that bacterial communities have a low relative abundance of *Lactobacillus* species and reduced microbial stability. The impact of pessary use on this microbial community is unknown. Vaginal estrogen is the only accepted treatment for the side effects of pessary therapy. This includes increased vaginal discharge, vaginal discomfort, and vaginal erosions. These side effects can prompt pessary removal, or require it, in the case of vaginal erosions. Estrogen modifies the vaginal epithelium by increasing glycogen storage; which provides a food source for *Lactobacillus* and improves epithelial integrity. The lactic acid producing bacteria decrease the pH of the vagina and protect from colonization from other bacteria; this suggests a change in the microbial community that can impact pessary symptoms. At the same time, even less is known about the modulation of immune response. Vaginal pathology has been linked to a deficiency in antimicrobial peptides. Furthermore estrogen was recently found to induce antimicrobial peptide (AMP) expression in urinary epithelium, suggesting a similar mechanism in the vagina. Thus a proposed mechanism for sustaining vaginal microbial equilibrium is *via* AMPs, which provide rapid bactericidal activity, a stimulatory signal for innate and adaptive immune responses, and maintenance of epithelial barrier function. Our preliminary data demonstrates that cultures from the pessaries of women with vaginal erosions lack *Lactobacillus* and have a predominance of bacteria not elsewhere described in the vagina. **We propose that the pessary alters the vaginal environment and AMP activity. Our objective in this study is to compare the vaginal microbiota and AMP activity in women before and after adopting a pessary as therapy. We hypothesize that the vaginal environment in elderly women with a pessary is distinct from the vaginal environment of elderly women with no history of pessary use.**

Specific Aim 1: To determine the predominant vaginal microorganisms of older women with and without a pessary by using standard culture techniques, expanded quantitative culture techniques and matrix assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS).

Specific Aim 2: To determine the vaginal AMP profile of older women with and without a pessary by assessing AMP activity using high pressure liquid chromatography fractionation and radial diffusion assay to assess for candidate AMPs (cathelicidin, beta defensin (hBD1 and vBD2) psoriasin, lactoferrin).

Specific Aim 3: To determine longitudinal changes in the vaginal microbiome and AMP profile between women who choose to continue pessary use and those who do not by comparing the data from Aim 1 and Aim 2 with the clinical characteristics of continued pessary use and functional age status.

Expected Outcome: Our studies will advance the care of elderly patients by providing a better understanding of the vaginal microbiome and AMP activity in elderly women. Consequently, we will be able to characterize the host response to pessary therapy. In characterizing substantive differences in the vaginal environment of pessary users, we can ultimately aim for novel targets for pharmacologic treatment of the vaginal microbial community, potentially allowing patients to continue with non-surgical therapies rather than pursuing surgical intervention.

POSTER 4: Fragmented Communication between Providers Caring for Medically Complex Older Patients during Transitions of Surgical Care

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Background:

Transitions of care between primary care providers (PCPs) and surgical healthcare providers are critical periods for older patients with multiple chronic medical conditions. The failure of providers to communicate patient health information and share a mental model of the care plan (i.e. shared cognition) results in poor coordination of care during transitions. This study was designed to characterize information exchange between PCPs and surgeons caring for medically complex older patients before and after major surgery.

Methods:

We prospectively identified 15 different medically complex (≥ 3 comorbidities) patients over 60 years of age referred for major general and vascular surgery procedures, and conducted semi-structured interviews of the patient as well as primary care and surgical providers responsible for communicating information about the patients during both the referral period and the follow-up period after surgery. Ethnographic observation procedures and a cognitive task analysis was performed using interview transcripts to describe the cognitive processes that comprise information exchange between PCPs, surgical providers and their older patients during transitions of care. This included the extent by which a patient's functional status, cognitive status, social status, chronic conditions and degree of frailty was communicated between providers. Thematic content evaluation for cognitive task analysis was performed by 3 independent reviewers using Atlas.ti software.

Results:

A total of 43 interviews were conducted, including 14 'paired' interviews between PCP and surgeons caring for the same patient before and after surgery. The majority of older surgical patients reported experiencing poor information exchange between their PCP and surgeon (53%) and feeling they were primarily responsible for communicating their own health information during transitions of care (60%). Both PCPs and surgeons agreed on the importance of communication during transitions of care, nevertheless, information was infrequently exchanged concerning patient's functional status (21% PCP-reported vs. 29% surgeon-reported), cognitive status (29% PCP-reported vs 14% surgeon-reported), social support (21% PCP-reported vs. 14% surgeon-reported), and degree of frailty (14% PCP-reported vs. 7% surgeon-reported). Most providers relied upon the electronic health record to exchange patient health information (85%), although 47% of providers used at least one workaround strategy to communicate during transitions of care.

Conclusions:

Information exchange between providers caring for medically complex older patients during transitions of surgical care is fragmented and generally incomplete, despite its importance recognized by patients, PCPs and surgical providers alike. These data support the need for new health information technology to support information exchange and shared cognition during transitions of surgical care.

POSTER 5: Biomarkers of acute inflammation as predictors of long-term cognitive impairment and disability in survivors of critical illness

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RATIONALE

Inflammation is associated with cognitive impairment and disability in community-dwelling older adults. Acute inflammation occurring during critical illness is strongly associated with delirium. Since delirium during critical illness predicts long-term cognitive impairment and disability in survivors of critical illness, we hypothesized that higher circulating levels of inflammatory biomarkers measured early in the course of critical illness would independently predict worse cognition and disability one year later.

METHODS

In this multicenter, prospective cohort study, we enrolled patients who were being treated for respiratory failure and/or shock within 72 hours of medical or surgical ICU admission. We collected plasma samples on study days 1, 3, and 5. We chose biomarkers based on biologic plausibility and previous research and used ELISA to assay, in duplicate, C-reactive protein (CRP), interferon-gamma (IFN- γ), interleukin-1 β , interleukin-6, interleukin-10, interleukin-12, tumor necrosis factor- α , soluble tumor necrosis factor receptor-1 (sTNFR1), and matrix metalloproteinase-9. One year after hospital discharge, study personnel blinded to biomarker levels assessed global cognition with the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), executive function with the Trail Making Test Part B (Trails B), disability in activities of daily living (ADLs) with the Katz ADL, and disability in instrumental ADLs (IADLs) with the Functional Activities Questionnaire. We used multivariable regression with inverse-probability-of-attrition-weighting to determine the association between the mean concentration of each biomarker and outcomes adjusting for age, education, comorbidities, baseline cognitive function, Framingham stroke risk score (cognitive models only), baseline ADL and IADL scores (disability models only), and mean daily doses of sedatives.

RESULTS

We enrolled 821 patients who were a median [IQR] of 61 [51-71] years old with an APACHE II of 25 [19-31] and 379 (46%) of whom were admitted with sepsis/ARDS. At one-year follow-up, 375 (74%) of 510 survivors underwent cognitive assessments and 378 (74%) underwent disability assessments. After adjusting for covariates, higher levels of IFN- γ were associated with worse executive functioning ($P=0.01$). Similarly, higher levels of CRP and sTNFR1 were associated with worse disability in ADLs ($P=0.03$ and $P=0.02$, respectively). No other biomarkers were associated with long-term cognitive or disability outcomes.

CONCLUSION

In a large cohort of critically ill patients, we found no consistent associations between acute inflammation and long-term cognitive or disability outcomes. Future work is needed to determine if the subset of survivors of critical illness with persistent inflammation are at increased risk for poor long-term outcomes.

POSTER 6: Improving decision-making and outcomes in transitions to post-acute care facilities

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Background:

The number of older adults discharged to post-acute care (PAC) facilities (such as skilled nursing facilities) after hospitalization is increasing rapidly, but their clinical course in PAC is uncertain. More than 25% will be readmitted, and some may not successfully rehabilitate and return to the community. We sought to identify important prognostic factors that influence outcomes of older adults discharged to PAC.

Methods:

This was a retrospective analysis of the 2003-2009 Medicare Current Beneficiary Survey (MCBS), a nationally-representative survey of Medicare recipients matched with claims data. Community-dwelling adults age 65 and older who were hospitalized and discharged to a PAC facility were included. The primary outcome was a composite of events representing failure to return to the community, including death, readmission to the hospital, or remaining in a PAC facility 100 days post-discharge. We used survey data and the PAC admission Minimum Data Set to evaluate the influence of multiple domains, including patient demographics, health status, social supports, and active symptoms and treatments. We selected variables significant at the $p \leq 0.05$ level in univariable analysis for multivariable logistic regression, then measured the discriminative ability of these factors using a c-statistic.

Results:

Of 1421 eligible patients, 510 (35.9%) were readmitted, died, or did not return to the community by 100 days post-discharge. In multivariable analysis, the most important factors associated with the primary outcome included the presence of dyspnea (OR 1.46; 95% CI 1.09-1.96), cognitive impairment (1.12; 1.02-1.24), use of antipsychotics (1.10; 1.04-1.17), number of physician visits in the PAC facility (1.09; 1.03-1.14), index hospital length of stay (1.02; 1.01-1.03), PAC facility length of stay (0.99; 0.98-0.99), and functional status (0.80; 0.75-0.85). The c-statistic incorporating these seven factors was 0.694.

Conclusions:

More than one-third of older adults discharged to PAC facilities are readmitted, die, or remain in the PAC facility 100 days post-discharge. Several factors that influence these outcomes may be modifiable. Their predictive value is similar to most readmission prediction models, which have been successfully used to target interventions to high-risk groups. These findings may serve as a starting point for better informing decision-making and improving outcomes.

POSTER 7: Short-Term Longitudinal Evaluation of Brain Volumes in Older Women with Breast Cancer Receiving Adjuvant Chemotherapy

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Purpose: Some patients with breast cancer suffer from subjective and objective cognitive deficits during and after chemotherapy, colloquially termed “chemobrain” (1, 2). Brain structural changes such as grey matter reduction are associated with cognitive impairment (3). The purpose of this study was to evaluate the effect of chemotherapy on whole brain and sub-structure volumes in older women with breast cancer receiving adjuvant chemotherapy.

Materials & Methods: This is an on-going prospective longitudinal study of women aged ≥ 60 years with stage I-III breast cancers receiving adjuvant chemotherapy. Sixteen patients aged 67.2 ± 5.6 years underwent neuropsychological testing with the NIH Toolbox (4) and brain magnetic resonance imaging (MRI) prior to chemotherapy, time point 1 (TP1), and again 1 month after completion, time point 2 (TP2). Fifteen age-matched healthy controls (HC) aged 68.4 ± 5.7 years underwent the same assessments. The structural MRI scan protocol included 3DT1WI. Neuroreader™(5) software (Horsens, Denmark, (<http://brainreader.net/neuroreader/>)) was used to segment total intracranial volumes, whole brain volumes, lobes of the brain, white matter and grey matter, as well as z-scores from the 3DT1WI data. T-tests were done to compare results between time points (paired) and between all patient and control data (unpaired). Percent differences (bias) between time points was calculated using the formula $(\text{Volume}_{\text{TP2}} - \text{Volume}_{\text{TP1}}) / \text{Volume}_{\text{TP1}}$ and error estimated from all 30 differences in time points one and two.

Results: Total intracranial volumes were not significantly different between patients with chemotherapy (TP1= $1688 \pm 113 \text{ cm}^3$, TP2= $1687 \pm 98 \text{ cm}^3$) and HC (TP1= $1719 \pm 120 \text{ cm}^3$, TP2= $1689 \pm 120 \text{ cm}^3$). Parenchymal brain volumes were not different between patients (TP1= $969 \pm 85 \text{ cm}^3$, TP2= $963 \pm 85 \text{ cm}^3$) and HC (TP1= $1012 \pm 53 \text{ cm}^3$, TP2= $987 \pm 67 \text{ cm}^3$). Grey matter volume showed no significant difference for patients (TP1: $530 \pm 66 \text{ cm}^3$, TP2: $511 \pm 64 \text{ cm}^3$, and HC (TP1: $571 \pm 32 \text{ cm}^3$, TP2: $556 \pm 39 \text{ cm}^3$). For patients and controls, no changes in volumes were observed for the white matter, grey matter, and all lobar structures (all $p > 0.05$). For TP1, and TP2, no differences in volumes were observed between controls and patients (all $p > 0.05$). Average percentage change (bias)/error for the structures were: intracranial volume: $-0.77\%/1.64\%$, parenchymal brain volume: $-1.20\%/3.01\%$, grey matter: $-2.86\%/6.54\%$ and all data fell within the normal ranges for each structure.

Discussion/Conclusion: There are no changes in total brain volumes for either patients with chemotherapy or matched healthy controls and no differences were observed between the groups. Our preliminary data indicates no significant short-term alterations of brain volumes in older patients with breast cancer undergoing adjuvant chemotherapy.

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References

1. Hurria A, Somlo G, Ahles T. Renaming "chemobrain". Cancer Invest. 2007 Sep;25(6):373-7.
2. Dutta V. Chemotherapy, neurotoxicity, and cognitive changes in breast cancer. J Cancer Res Ther. 2011 Jul;7(3):264-9.
3. McDonald BC, Conroy SK, Ahles TA, West JD, Saykin AJ. Gray matter reduction associated with systemic chemotherapy for breast cancer: a prospective MRI study. Breast Cancer Res Treat. [Research Support, N.I.H., Extramural Research Support, Non-U.S. Gov't]. 2010 Oct;123(3):819-28.
4. Gershon RC, Wagster MV, Hendrie HC, Fox NA, Cook KF, Nowinski CJ. NIH toolbox for assessment of neurological and behavioral function. Neurology. 2013 Mar 12;80(11 Suppl 3):S2-6.
5. Ahlidan J, Raji CA, DeYoe EA, Mathis J, Noe KO, Rimestad J, et al. Quantitative Neuroimaging Software for Clinical Assessment of Hippocampal Volumes on MR Imaging. J Alzheimers Dis. 2015;49(3):723-32.

POSTER 8: More than One in Five Older Veterans are Hospitalized for Bleeding Following Initiation of Warfarin for Atrial Fibrillation

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Background:

Clinicians are hesitant to prescribe oral anticoagulants to older adults with atrial fibrillation (AF) due to concerns over bleeding risk.

Hypothesis:

As many data on bleeding events are from trials of rigorously selected patients, we hypothesized that major bleeding events (requiring hospitalization) would be more common than previously reported.

Methods:

We created a retrospective cohort of 31,951 Veterans with AF aged ≥ 75 years who were new referrals to VA anticoagulation clinics (warfarin) from 1/1/02 – 12/31/12. Patients with comorbid conditions requiring warfarin (e.g. pulmonary embolus) were excluded. Data were extracted from the VA electronic medical record and linked with Medicare claims data for subsequent hospitalizations. The primary outcome was any hospitalization for bleeding. We identified bleeding subtypes by source, and compared characteristics of patients with and without bleeding hospitalizations.

Results:

Mean population age was 81.1 years, 98.1% were male, and 8.4% were nonwhite. Over a median follow-up period of 2.62 years, 7288 patients (22.8%) were hospitalized for bleeding. There were 12,004 total bleeding events; overall, 980 (13.4%) patients experienced multiple events. The most common bleeding sources (first event) were gastrointestinal (50.8%), genitourinary (21.6%), and intracranial (9.4%) (Figure). The median time to first bleeding event was 1.59 years. Patients hospitalized for bleeding were more likely to have coronary disease (48.4% vs. 40.9%, $P < 0.01$); COPD (28.4% vs. 24.7%, $P < 0.01$); chronic kidney disease (17.8% vs. 16.0%, $P < 0.01$); CHF (34.7% vs. 29.5%, $P < 0.01$), and labile INR (63.3% vs. 53.7%, $P < 0.01$). The rate of hospitalization for stroke over the same time period was 5.0%.

Conclusions:

After initiating warfarin, over one in five older Veterans are hospitalized for bleeding, most commonly from a gastrointestinal source. Comorbidity burden and labile INR place these patients at increased risk.

POSTER 9: Loneliness, Amyloid and Tau in Cognitively Normal Older Adults

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BACKGROUND:

Loneliness is a perceived state of social and emotional isolation that has been associated with cognitive decline. Loneliness may be a sensitive symptom of brain changes related to preclinical Alzheimer's Disease (AD) in older people.

OBJECTIVE:

To determine whether *in vivo* measures of cortical amyloid and entorhinal tau (ET), are associated with greater loneliness in cognitively normal (CN) older adults.

METHODS:

Cross-sectional analyses using data from 89 CN, community-dwelling men and women, age 69-89, participating in the Harvard Aging Brain Study. Loneliness was assessed using the 3-item UCLA loneliness scale. A continuous, aggregate measure of amyloid, determined by Pittsburgh Compound B-PET was used as a predictor of loneliness in regression models adjusting for age, sex, APOE ϵ 4 genotype, socioeconomic status, depression, anxiety and social network. A second model included the interaction of amyloid with APOE ϵ 4 as a predictor. The primary analysis was repeated using ET, measured by T807 (AV1451) PET, as the predictor for loneliness, using the same covariates, without and with amyloid.

RESULTS:

Higher amyloid predicted greater loneliness ($\beta=0.4$, $p=0.002$; for the model $R^2=0.3$, $p=0.001$). Furthermore, the interaction of high amyloid and the presence of the APOE ϵ 4 allele was associated with greater loneliness ($\beta= 0.6$, $p<0.0001$; for the model $R^2=0.3$, $p<0.0001$). ET also predicted loneliness in the analogous model ($\beta=0.2$, $p=0.04$; for the model $R^2=0.21$, $p=0.015$) but not when controlling for amyloid.

CONCLUSIONS:

We report novel associations of loneliness with cortical amyloid and ET and present loneliness as a neuropsychiatric symptom relevant to preclinical AD in CN older people.

POSTER 10: The Social Ecological Model as a Framework for Understanding Physical Activity Barriers, Motivators, and Facilitators in Older, HIV-infected Adults

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Background:

With effective antiretroviral therapy (ART), HIV-infected adults are expected to live a near normal life expectancy, but experience a greater burden of comorbidities, fractured social networks, and often a lack of social and environmental support leading to health disparities. Physical activity reduces the risk for comorbidities in older adults, but little is known about barriers and facilitators to initiating and maintaining regular physical activity that HIV-infected older adults face. The purpose of this qualitative study was to identify facilitators and barriers associated with routine exercise among older, HIV-infected adults.

Methods:

Semi-structured focus group interviews were conducted among 2 HIV-infected populations, all ≥50 years of age: 1) participants of an exercise intervention, 2) volunteers who self-identified as exercisers or non-exercisers. Semi-structured interviews focused on identifying facilitators and barriers to routine physical activity or exercise. Sessions were recorded, transcribed, and coded using both an inductive and deductive approach. Inductive theme analysis was used to identify major themes.

Results:

Twenty-two participants from the exercise intervention and 29 additional volunteers contributed to the focus groups. The mean age was 58 years and time since HIV diagnosis was 21 years. The majority of participants were male (90%); white non-Hispanic (63%); on disability (47%) or unemployed (18%). A variety of shared facilitators and barriers to initiating and maintaining regular exercise spanned a hierarchy consistent with the social ecological model (SEM), and focused on: 1) individual (medical problems, motivation, ability to maintain a schedule or routine, fear of disability/dementia), 2) interpersonal (exercise partner, physician advice, caregiver factors, HIV-survivor guilt/loneliness/loss), 3) exercise facilities (location, cost, convenience, gym environment, locker rooms, age-friendliness of the facility), 4) community (social groups focused on physical activity, HIV or age-related stigma, lack of an older/gay community, unstable housing), and 5) policy issues (understanding insurance benefits or lack of, coverage of other wellness components, no HIV-specific recommendations for exercise). Through the identified barrier and facilitators, participants noted specific features (generally corresponding to the SEM levels) that may improve initiation and maintenance of physical activity among older, HIV-infected adults including 1) frequent feedback on safety, scheduled exercise times, 2) accountability, 3) simple, specific instructions for exercise and facilities focused on older adult needs and abilities, 4) opportunities for physical activity-focused social events, 5) assistance with locating facilities with discounted/free memberships, among others.

Conclusions:

Future efforts to increase physical activity in older HIV-infected or other older populations with health disparities should consider ways to incorporate SEM aspects to maximize uptake and maintenance.

POSTER 11: Frailty and Functional Outcomes After a Critical Illness among Older Adults

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Rationale:

Little is known about the effect of pre-ICU frailty on functional outcomes after a critical illness among older adults. Our objective was to evaluate the relationship between frailty and the subsequent course of disability over 6 months among older ICU survivors.

Methods:

Potential participants included 754 community-dwelling persons aged 70+ years, who were evaluated monthly for disability in 13 functional activities from 1998-2013. Frailty was assessed every 18 months using the Fried index, where frailty, pre-frailty and not frail were defined, respectively, as ≥ 3 positive criteria (out of 5), 1-2 positive criteria, and 0 positive criteria. The analytic sample included 343 ICU admissions from 269 participants. Among the ICU survivors, the association between pre-ICU frailty and disability over the subsequent 6 months was evaluated with a multivariable negative binomial model. Among community-dwelling persons, discharge to a nursing home was evaluated as a secondary outcome using multivariable logistic regression.

Results:

The mean age of the sample was 84.0 years (standard deviation [SD] 5.4). Frailty and pre-frailty were present prior to 171 (49.9%) and 135 (39.4%) of the 343 ICU admissions, respectively. Nearly half of the frail participants died within 6 months of the ICU admission, with mortality occurring primarily during the hospitalization, whereas less than a quarter of pre-frail and non-frail participants died, respectively. In the multivariable analysis, frailty was associated with 41% greater disability over the 6 months following a critical illness (RR 1.41; 95% CI 1.11, 1.78) relative to non-frailty, whereas pre-frailty conferred a 28% greater risk of post-ICU disability (RR 1.28; 95% CI 1.01, 1.63). Frailty (OR 3.45; 95% CI 1.28, 9.35), but not pre-frailty (OR 1.90; 95% CI 0.77, 4.69), was associated with a higher odds of being discharged to a nursing home, relative to non-frailty. Sensitivity testing confirmed that these results were robust to the competing risk of death.

Conclusions:

Among older ICU survivors, frailty and pre-frailty were associated with increased disability over the 6 months following a critical illness, and frailty was associated with new nursing home placement for older persons who had previously resided in the community. Stratifying patients by frailty status upon ICU admission may help target older patients for early restorative interventions and goals of care discussions in the ICU.

POSTER 12: Ghrelin Deletion Prevents Sarcopenic Obesity

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Background:

The prevalence of obesity increases dramatically with age and is associated with an increased risk of diabetes, cardiovascular disease, cancer and overall mortality. Nevertheless, the mechanisms contributing to the development of obesity in aged individuals have not been fully characterized. Ghrelin is an appetite-stimulating hormone and GH secretagogue that is known to decrease energy expenditure and to increase food intake, adiposity and body weight. The purpose of this study was to characterize the role of ghrelin in obesity during aging. Given that obesity is associated with increased mortality, we also sought to establish the impact of ghrelin deletion in overall survival.

Methods:

Body weight, body composition, food intake, locomotor activity and energy expenditure (EE) were compared between young adult (6 month-old) and old (19-24 month old) ghrelin wild type (WT) and knock-out (KO) c57bl/6 male mice. Body composition was measured by nuclear magnetic resonance (NMR). Food intake was measured by a feeding mass monitor with powdered food, and EE and the respiratory quotient (RQ) was measured by indirect calorimetry. Locomotor activity was measured in metabolic cages using a multichannel infrared monitoring system. A separate group of animals was followed until demise for survival analysis.

Results:

Older animals had higher body weight and fat mass measured by NMR than younger animals in both genotypes. Although there was no difference in these parameters between young WT and KO animals, old KO animals had significantly lower body weight and fat mass than WT. Lean mass also increased with age in both genotypes but there was a decrease in leanness with aging seen only in wild type animals. Daily food intake was lower in young KOs compared to WT although this difference was not present during aging and energy expenditure decreased with age and this was more evident in WT than in KO mice. Spontaneous 24-h locomotor activity tended to decrease with aging in both genotypes although this difference only reached significance during the light phase in the wild type group. Ghrelin replacement in old mice induced increases in food intake, body weight and lean mass. Survival was not significantly different between groups.

Conclusion:

Aging is associated with an increase in body weight and adiposity and decreased EE in mice. These increases in body weight and fat mass were ameliorated by deletion of the ghrelin gene only in aged animals. Also, ghrelin deletion was associated with decreased food intake and prevented the decrease in EE seen with aging in WT animals. Survival was not affected by ghrelin deletion in spite of these changes seen in body composition.

POSTER 13: Association of Kidney Function with Fracture Risk among Older Male Veterans

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Background

Older adults develop age-related decline in kidney function and are increasingly diagnosed with chronic kidney disease (CKD). We do not know if age-related decline in kidney function or mild reductions in estimated glomerular filtration rate (eGFR) increases fracture risk.

Methods

This is a longitudinal cohort study using linked Veteran Affairs (VA) and Medicare administrative data of 4.3 million. The cohort included male Veterans (n=4,338,189) over age 50 receiving primary care in the VA who had no prior diagnoses of fracture or osteoporosis therapy. Estimated glomerular filtration rate (eGFR) was estimated using baseline creatinine values and calculated with the Modification of Diet in Renal Disease equation. Subjects were followed to capture any fracture event up to 10 years. Association of baseline eGFR with fracture risk was evaluated with a Cox Proportional Hazards model controlling for known fracture risk factors (race, body mass index, tobacco use, alcohol dependence, chronic steroid use, androgen deprivation therapy, rheumatoid arthritis, hyperthyroidism, diabetes, obstructive lung disease, chronic liver disease, and malabsorption). To account for time at risk for fracture prior to cohort entry, age was included in the model as a time scale.

Results

In this cohort, 808,525 Veterans (18.7%) had eGFR < 60 ml/min/1.73m², of which 17.7%, 0.83%, and 0.13% had eGFR in ranges of 30-59, 15-29, < 15 ml/min/1.73m², respectively. Over up to 10 years, 522,448 (12.0%) Veterans experienced at least one fracture during the observational period. Within a subset of veterans age 65+ years (n=712,918), unadjusted hazard ratios (95% CI) for fracture were 0.99 (0.96, 1.03), 1.48 (1.37, 1.59), and 2.13 (1.86, 2.40) for Veterans with eGFR in ranges of 30-59, 15-29, < 15 ml/min/1.73m², respectively (reference group= eGFR ≥ 60ml/min/1.73m²). After adjusting for fracture risk factors, the hazard ratios (95% CI) for fracture slightly decreased to 0.98 (0.94, 1.01), 1.37 (1.26, 1.49), and 1.91 (1.64, 2.19) for Veterans with eGFR in ranges of 30-59, 15-29, < 15 ml/min/1.73m², respectively.

Conclusion

Among older male Veterans, eGFR < 30 increases fracture risk irrespective of age or length of time at risk for fracture prior to cohort entry. Older Veterans who develop mild reductions in eGFR (30-59) may not experience an increase in fracture risk due to CKD.

POSTER 14: Assessing the Utility and Validity of Frailty Markers in Critically Ill Adults **Aluko A. Hope; S. J. Hsieh; Joe Verghese; Michelle Ng. Gong.**

Rationale:

Frailty has become a useful concept for identifying adults vulnerable to adverse outcomes after critical illness. Identifying pre-hospital frailty by the presence of a critical mass of frailty markers (FM) have been difficult to operationalize in the Intensive Care Unit (ICU) setting where patients often cannot complete performance measures or answer complex questions.

Objectives:

To compare the utility and validity of FM with that of the Clinical Frailty Scale (CFS) for identifying a subset of critically ill adults at high risk of adverse outcomes.

Methods:

An observational cohort study of adults admitted to a medical/surgical ICU. ICU clinicians' completed the CFS and patients/surrogates answered questionnaires to determine pre-hospital functional status and the prevalence of seven FM. We used chi-squared and Students t-test (or their non-parametric equivalents) to describe the relationship between frailty, as determined by CFS, and individual FMs. We then used chi-squared or one-way analysis of variance to describe the relationship between baseline frailty status (using both CFS and FM) and hospital and six-month functional outcomes.

Measurements and Main Results:

In our study sample of 95 patients (mean age \pm standard deviation (SD) 57.1 years \pm 17.5), 80% reported at least 1 of the seven FMs (median (inter-quartile range (IQR) 3 (1-4)); the most common FM were impaired mobility (n=57, 60%), impaired physical activity (n=57, 60%) and decreased strength (n=42, 44.2%). 35% (n=34) of the patients were frail by CFS (CFS-Frail). Of the 61 patients who were not frail by (CFS-NF): 43 had at least one FM; 18 had no FM. CFS identified 43.5%, 42.8% and 46.2% of the participants with two, three or four FM respectively. CFS-Frail patients appeared to be: older (mean age in years \pm standard deviation (SD) 65.9 \pm 16.2 versus 52.3 \pm 16.4, p=0.002), more likely to have been admitted to the hospital in the prior year (82.4% versus 62.3%, p=0.042), and have higher illness severity on presentation to ICU (mean \pm SD APACHE IV 68.5 \pm 22.1 versus 55.6 \pm 20.6, p=0.0055) than CFS-NF patients. The baseline characteristics of those CFS-NF with FM (n=43) were more similar to the CFS-Frail patients than to CFS-NF patients without FM: they were older (mean age \pm SD, 54.3 \pm 16.9 versus 47.3 \pm 14.5, p=0.130), more likely to be hospitalized in the year before (74.4% versus 33.3%, p=0.003) and had higher illness severity on presentation (mean APACHE \pm SD 58.4 \pm 21.6 versus 48.9 \pm 16.7, p=0.10). The CFS-NF patients with FM appeared to be more likely to have an increase in functional impairment at hospital discharge compared to CFS-NF without FM (50% versus 22%, p=0.005) and were more likely to have a protracted/increase functional impairment at the six-month assessment compared to CFS-NF patients without FM (14.3% versus 5.6%, p=0.002).

Conclusion:

The presence of FM may be associated with increased functional impairment after ICU treatment and a global clinical impression of frailty may be insensitive for identifying critically ill adults with multiple FM. Larger studies measuring pre-ICU FM may provide insight into patient-level factors that impact post ICU outcomes.

POSTER 15: The Invaders Are Mutated: Public Knowledge and Beliefs Regarding Antibiotics and Antibiotic Resistance

Rebecca Carter, BA ¹; Jiayang Sun, PhD¹; **Robin Jump, MD, PhD²**

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Background.

Little is known about the knowledge or beliefs of people outside of healthcare regarding antibiotic-resistant bacteria or antibiotic misuse. We hypothesized that while the public perceives antibiotic resistance as a problem, they do not understand the connection between antibiotic misuse or overuse and selection for antibiotic resistant bacteria.

Methods.

We developed and tested a 13-item instrument asking participants about their beliefs and knowledge that conceptualize appropriate antibiotic use. A single free-text question asked respondents to explain in their own words the meaning of antibiotic resistance. Respondents were recruited with the Amazon Mechanical Turk crowdsourcing platform. Survey outcomes were evaluated for reliability and validity.

Results.

Among 215 respondents, the average age was 37 years (± 12 years), and 72% were college educated. The majority of respondents agreed that inappropriate antibiotic use contributes to antibiotic resistance (92%), that they did not keep leftover antibiotics (82%) and that consumption of livestock treated with antibiotics affects humans (92%). Almost half of the respondents (47%) responded neutrally to the statement that antibiotic resistance is a problem. Dominant themes from the free-text response were that (1) antibiotic resistance involves an immune response by the host against an antibiotic, (2) resistance represents a reduction in antibiotic power or strength and, (3) resistance is a consequence of antibiotic exposure. A fourth theme revealed confusion about the following clinical terms: bacteria, viruses, antibodies, resistance and immunity.

Conclusion.

Our findings indicate that the public is aware that antibiotic misuse contributes to antibiotic resistance but many do not consider it to be an important problem. The free-text responses suggest specific educational targets, including the difference between viruses and bacteria, to increase public awareness of antibiotic resistance.

Disclosures.

R. Jump, Pfizer: Investigator, Educational grant

POSTER 16: Self-Reported Function Is More Time Efficient and Equally Helpful Compared With Frailty in Identifying Older Adults at High Risk for an Adverse Postoperative Course

Alok Kapoor, MD, MSc ; Nicholas Shaffer, MPH; Christine McDonough PhD; Yanhua Zhang, MSc; Howard Cabral, PhD; Dan K. White, PT, ScD; Heena Santry, MD, MS; Alan Jette, PhD; Roger Fielding, PhD; Rebecca Silliman, MD, PhD; Jerry Gurwitz, MD

From the Department of Medicine and Meyers Primary Care Institute, University of Massachusetts Medical School (AK, YH, JHG); Department of Medicine, Boston University School of Medicine (AK, RAS); Department of Health Law, Policy & Management, Boston University School of Public Health (CMM, AMJ); Department of Physical Therapy, University of Delaware (DKW); Department of Surgery, Boston University School of Medicine (PR, AG, DM, G.MD); Department of Biostatistics, Boston University School of Public Health (HJC); Nutrition, Exercise Physiology, and Sarcopenia Laboratory, Tufts University (R.A.F.).

Background: Investigators have shown that measuring frailty preoperatively is an effective but time intensive way to identify older adults at high risk of an adverse postoperative course. Because self-reported physical function would be more time efficient and convenient to collect, we conducted a study to calculate the improvement in risk prediction afforded by adding self-reported function vs. frailty to the existing American College of Surgeons NSQIP Universal Risk Calculator (ACS Calculator).

Methods: From 2013-2015, we recruited patients age 65+ from Boston Medical Center and UMass Memorial Medical Center pre-surgical clinics with serious complication risk of 5% or greater as measured by the ACS Calculator. For each patient we collected self-reported physical function with Late Life Function (LL-F) instrument (score ranging 0-100) and Fried Frailty Criteria (frailty) – defined by having 3+ of following: slow gait speed, weak handgrip, exhaustion, weight loss, or low activity. We then reviewed charts to identify an adverse postoperative course (ACS defined serious complication, discharge to nursing home, readmission, or death at 30 days).

Results: We enrolled 416 patients with average age of 74. Mean LL-F score was 56.6. Twelve percent of patients were frail. Over 30 days, 20 patients (4.8%) had a serious complication, 67 (16.1%) were readmitted within 30 days, 67 (16.1%) went to nursing home after discharge, and 2 patients died. There was better improvement of the ACS calculator when adding LL-F compared with frailty with c-statistic improvement (95% CI): 0.076 (0.019, 0.134) versus 0.058 (0.008, 0.108).

Conclusion: Self-reported function was just as informative as frailty in identifying high risk older adult surgical patients. Given its convenience in administration and its brevity, self-reported function used in conjunction with the ACS Calculator may be a better method of assessing risk for an adverse postoperative course.

POSTER 17: Prehabilitation Using Aquatic Exercise in Patients Undergoing Total Knee Arthroplasty

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Introduction:

With our aging population, total knee arthroplasty is performed with increasing frequency. Although the surgery is generally successful, many patients have persistent pain and disability. Traditional risk assessment tools have focused on single organ systems. Our team has found that mobility, assessed by the Mobility Assessment Tool short form (MAT-sf), is a simple and accurate method to predict postoperative outcomes, including length of stay, postoperative complications, and nursing home placement for older patients. *Prehabilitation* is the process of enhancing a person's functional capacity to withstand an incoming stressor. Although multiple studies have tested prehabilitation before joint replacement surgery, results have been mixed. We hypothesize that patients with limited mobility are most likely to benefit from prehabilitation.

Method:

We are conducting a randomized clinical trial of aquatic exercise as a prehabilitation tool; the resistance of water strengthens muscle and increases energy expenditure without stressing weight-bearing joints. The aims of this exploratory study are: 1) To evaluate the feasibility of prehabilitation using 4-8 weeks of aquatic exercise in 40 older adults scheduled for total knee arthroplasty for osteoarthritis; 2) To examine the effects of 4-8 weeks of aquatic exercise on (a) mobility, pain, stiffness, physical function, cognitive function and depression; and (b) inflammatory markers, including CRP, IL-6 and TNF- α ; and 3) To estimate the effect of prehabilitation on postoperative outcomes. We screen patients who are scheduled for a total knee arthroplasty and enroll patients who have decreased mobility, measured by MAT-sf. Patients will be randomized into either a prehabilitation group or a usual care group (n=20, each group). Participants are extensively assessed regarding pain, stiffness, and physical function, depression, and cognitive function using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Geriatric Depression Scale Short Form (GDS-SF), the Short Physical Performance Battery (SPPB), and Montreal Cognitive Assessment (MoCA). Serum inflammatory markers including CRP, IL-6 and TNF- α are assessed at the baseline. The prehabilitation group participates in 4-8 weeks of individualized aquatic exercise in a heated pool (60 min/session, 3 times per week). All participants are reassessed immediately before surgery and 4 weeks after the surgery using WOMAC, GDS-SF, SPPB, MoCA and MAT-sf. Serum inflammatory markers are reassessed at the same time points. The primary outcomes of interest are postoperative complications, length of stay, ICU length of stay, and institutionalization. If successful, we will have sound pilot data for several critical health outcomes with which to support an external proposal for a larger-scale study.

Progress:

We have enrolled 9 participants since March 2016. One completed the study, 7 participants are still in the study and one patient's surgery was cancelled.

POSTER 18: A Frailty Index for Patients with End-Stage Liver Disease Improves MELDNa Prediction of Waitlist Mortality

JC Lai, KE Covinsky, JL Dodge, WJ Boscardin, DL Segev, JP Roberts, S Feng

Background:

Cirrhosis is characterized by muscle wasting, malnutrition, and functional decline that confer excess mortality not well quantified by the MELD score. While these extra-hepatic manifestations can be captured by a multitude of frailty measures, no consensus exists on which measures best represent frailty *and* predict mortality in cirrhotics. We aimed to identify a parsimonious group of frailty measures that enhance mortality prediction in cirrhotics.

Methods:

Consecutive outpatients listed for LT *without MELD exceptions* were assessed with candidate physical frailty measures including gait speed, chair stands, 30-sec balance, grip strength, instrumental activities of daily living (IADL), weight loss, exhaustion, and physical activity. We used best subset selection analyses with Cox regression to identify multiple subsets of candidate frailty measures that best predicted the outcome of waitlist mortality=death or delisting due to sickness. The final Frailty Index was selected using measures of statistical accuracy (Akaike information criterion, C-statistic) and assessments of clinical utility. The net reclassification index (NRI) evaluated the % of patients correctly reclassified by adding the Frailty Index to MELDNa.

Results:

Included were 536 cirrhotics listed for LT: 41% female, median (interquartile range) age was 58y (50-63), MELDNa was 18 (15-23). By a median follow up of 11 months, 107(20%) died/were delisted. **The final Frailty Index included 3 measures: grip strength, chair stands, and balance.** The ability of MELDNa and the Frailty Index to correctly rank patients according to their 3-mo waitlist mortality risk (i.e., C-statistic) was 0.79 and 0.75, respectively, but 0.82 for MELDNa + Frailty Index together. Compared with MELDNa alone, MELDNa + Frailty Index correctly re-classified 13% of deaths/delistings ($p=0.03$) and 8% of non-deaths/delistings ($p=0.003$) with a total NRI of 21% ($p=0.001$). Compared to those with robust Frailty Index scores ($\geq 75^{\text{th}}$ ile), cirrhotics with poor Frailty Index Scores ($\leq 25^{\text{th}}$ ile) were more impaired by gait speed, IADL difficulty, exhaustion, and low physical activity [$p<0.001$ for each].

Conclusions:

Our Frailty Index for cirrhotics, comprised of 3 performance-based metrics, has construct validity for the concept of frailty and improves risk prediction of waitlist mortality over MELDNa alone, correctly re-classifying 21% of cirrhotics. Our data strongly support the routine assessment of frailty to enhance the care of cirrhotics awaiting liver transplantation.

POSTER 19: Factors associated with increased bone fracture risk among older male Veterans with type 2 diabetes mellitus

Richard Lee, Richard Sloane, Carl Pieper, Cathleen Colón-Emeric

Purpose:

Older adults with diabetes have an increased fracture risk, despite higher bone mineral density (BMD). Studies investigating this paradoxical fracture risk among older males are limited. Identification of mediating factors of this fracture risk may clarify etiology and therapy in this increasing population.

Method:

Retrospective cohort study, using linked administrative data from the Veterans Health Administration (VHA) and Medicare, of 2,798,309 male Veterans, age ≥ 65 years, who received primary care from 2000 to 2010 from VHA, among whom 900,402 had a diagnosis of diabetes mellitus. The number of clinical fractures was determined during the 10-year follow-up period. Association of diabetes with fracture risk was evaluated with negative binomial regression model. Potential mediating factors were identified by comparing diabetes-associated fracture risk prior to and after inclusion of potential factors in regression model. Relative risks (RR) of fracture associated with diabetes with 95% confidence intervals are presented.

Results:

Compared to those without diabetes, men with diabetes were slightly older (71.2 vs 70.8 years), with greater body mass index (BMI) (30.1 vs 28.0 kg/m²), and more likely Black race (10.2% vs 7.6%). Among those who had a DXA ordered in routine clinical care, those with diabetes had a statistically significant higher femoral neck BMD T-score (-0.28 vs -0.50). All P-values < 0.0001. Diabetes was associated with an unadjusted relative risk of fracture 1.178 (1.169-1.187). After adjusting for age, race, BMI, tobacco/alcohol use, rheumatoid arthritis, and glucocorticoid use, a significant fracture risk associated with diabetes remained, with RR 1.22 (1.21-1.23). A similar result was seen after adjusting for 10-year major osteoporotic fracture risk as calculated by FRAX. Diabetes-associated fracture risk was significantly different after including the potential mediating factors cardiovascular disease [1.20 (1.19-1.21)], congestive heart failure [1.18 (1.1-1.19)], and neuropathy [1.17 (1.16-1.18)]. No difference was seen after including chronic kidney disease or cerebrovascular disease.

Conclusion:

In this large cohort of older males, those with diabetes were more obese, with higher femoral neck BMD. However, diabetes remained significantly associated with increased fracture risk. Potential mediators include macrovascular and microvascular complications of diabetes.

POSTER 20: Effect of Sleep Deprivation and Sodium Oxybate on CSF A β 40 and A β 42 Kinetics

Brendan P. Lucey, Terry J. Hicks, Jennifer S. McLeland, Cristina D. Toedebusch, Jill Boyd, Robert Swarm, Kwasi G. Mawuenyega, Vitaliy Ovod, Tom Kasten, John C. Morris, Randall J. Bateman

Objectives:

In rodents and humans, amyloid- β (A β) concentration fluctuates with the sleep-wake cycle as a diurnal pattern. Animal studies suggest that A β concentration and deposition may be modifiable through manipulation of the sleep-wake cycle. The purpose of this study is to determine if A β concentrations in the human central nervous system are modifiable through manipulation of sleep.

Methods:

We collected serial cerebrospinal fluid (CSF) samples via intrathecal lumbar catheter every 2 hours for 36 hours in adults 18-60 years old during behavioral sleep deprivation (N=12), pharmacologic sleep induction with sodium oxybate (N=11), and control (N=12). All participants were infused with $^{13}\text{C}_6$ -leucine to measure A β kinetics. A β 40 and A β 42 isoforms were quantitated by mass spectrometry. Sleep-wake activity was monitored with polysomnography.

Results:

We found that concentrations of A β 40 and A β 42 increased 25-30% during sleep deprivation compared to control. This increase occurred during the sleep period, hours 18-24 or 01:00-07:00. Participants treated with sodium oxybate were found to have a greater decrease in A β 40 and A β 42 area under the curve compared to control ($p < 0.05$).

Discussion:

Sleep is hypothesized to be the primary driver of the A β diurnal pattern. Sleep deprivation increased A β 40 and A β 42 25-30% compared to controls. Since changes in A β concentration of 25-40% have been associated with causing or preventing Alzheimer's disease, manipulation of sleep has potential as a preventive therapy. Future investigations will be needed to assess if A β concentrations are increased in individuals with poor sleep quality compared to controls and if this increase can be normalized with a sleep-inducing medication.

Funding:

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The Role of Long-Term Acute Care Hospitals in Caring for Non-Ventilated Older Adults

Anil N. Makam, MD, MAS

The number of older adults who survive an acute illness but require ongoing post-acute care is rising. Post-acute care now accounts for 73% of the geographic variation in Medicare spending. Historically, most hospitalized older adults who are too sick to go to a post-acute care facility remain in the hospital. However, over the past two decades the number of older adults discharged to long-term acute care hospitals (LTACs), a new model of post-acute care for individuals with prolonged and complex illness, has increased by 900% since 1990. LTACs now account for over 140,000 admissions and \$5.5 billion in spending annually. LTACs were initially designed as post-acute care hospitals for those requiring prolonged mechanical ventilation. However, the only official Medicare requirement for LTAC admission is an anticipated length of stay of at least 25 days. As such, most LTAC patients are older Medicare beneficiaries who do not require mechanical ventilation, but have a range of other complex care needs, such as intravenous antibiotics, wound care, and rehabilitation.

The main alternative to LTACs is the acute care hospital (ACH). Despite the explosion in LTAC utilization and the overlap in services provided between LTACs and ACHs, little is known about the reasons why older adults are discharged to LTACs versus receiving continued care in the ACH, and whether clinical outcomes differ between these settings. This is important because recent Medicare policy has adopted new patient criteria for LTAC admissions. When fully implemented in 2018, this policy will substantially reduce payments for almost half of all current LTAC cases that do not meet these criteria. Thus, understanding which older adults benefit from LTAC care has enormous policy implications for Medicare to ensure adequate access.

There is little empiric data on how LTACs compare to ACHs in caring for similarly ill non-mechanically ventilated patients. LTACs offer highly specialized, multidisciplinary care with a greater focus on rehabilitation than ACHs, which may improve outcomes for older adults with complex care needs. However, LTACs carry higher risks for hospital-acquired complications and lead to fragmentation in the acute care episode, which may worsen outcomes. Therefore, the objective of this application is to better understand the role and outcomes of LTACs in caring for non-ventilated older adults after hospitalization vs. continued care in the ACH.

Aim 1: Identify patient, provider, and regional factors associated with discharge to a LTAC versus continued care in the ACH among non-ventilated older adults. Using a national 5% Medicare claims dataset and multilevel modeling, we hypothesize that LTAC use is most strongly driven by regional market supply, and not clinical severity.

Aim 2: Compare the effectiveness of LTACs vs. ACHs in optimizing clinical outcomes (mortality, discharge home), healthcare utilization (total institutional and hospital days), and costs among non-ventilated older adults. Using a national 5% Medicare claims dataset, we will estimate the effects of being discharged to an LTAC compared to receiving continued care in an ACH using propensity score and instrumental variable analyses. We hypothesize that LTACs will have similar outcomes vs. ACHs, but incur much greater cost to Medicare, except for a subset of older adults with the greatest severity of illness (prolonged intensive care unit stay) where LTAC care is more effective.

The proposed studies using national Medicare data will be the first rigorous analysis of the potential reasons for variation in LTAC use and outcomes for non-ventilated older adults compared to continued care in the ACH. I have recently submitted an NIA K23 that is proposing a different but complementary series of projects using a mix of Medicare, electronic health record, and prospectively collected data to assess why older adults are discharged to LTACs versus skilled nursing facilities (SNF), the principal non-hospital alternate for post-acute care, and evaluate which setting will optimize clinical and rehabilitation outcomes. This R03 application will complement my K23 proposal by building the evidence base for LTACs compared to the full spectrum of alternative care options from remaining in the ACH (R03 proposal) to being discharged to a SNF (K23 application). Furthermore, this R03 will provide further formal and experiential training opportunities in using Medicare data for health services and comparative effectiveness research. The subsequent R01 following this R03 proposal and my K23 application will propose using national Medicare data to examine the comparative effectiveness of LTACs vs. various post-acute care sites on clinical, cognitive and functional outcomes, by taking advantage of an impending change coming in 2018 when LTACs will be required to report the same detailed patient assessment data upon LTAC admission and discharge as other post-acute care sites. The proposed work and subsequent research will directly inform practice and policy by building the evidence base to assist patients, providers, and payers to 'choose wisely' in post-acute care. Collectively, I aim to create a career in aging research at the interface of hospital medicine, geriatrics, and post-acute care using methods in health services and comparative effectiveness research.

POSTER 21: Oxygen Tension Regulates the Aged Connective Tissue Phenotype through Modulation of Rac1 Activity

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Connective tissue disorders are common in the elderly. Flexor tendinosis ('trigger finger'), DeQuervain's tendinosis, and lateral epicondylitis ('tennis elbow') affect greater than 200 million Americans and result in significant pain and disability. The natural history of these disorders, however, and their dependence on age-related changes of tendon, ligament and fibrocartilage, are unclear.

In our studies of young (<45y) and aged (>65y) tendon and fibrocartilage samples from patients without (control) or with connective tissue disorders, we have found a change in connective tissue cell composition and morphology that occurs with aging. In particular, tendon tissue from aged patients undergoing surgery for tendinosis reveals cells with increased characteristics of fibrocartilage and hypertrophic fibrocartilage (cell rounding, increased proteoglycans, increased collagen X expression) compared with young tendon tissue. Also, examination of the medial epicondyle enthesis (tendon-bone junction) in aged patients reveals increased hypertrophic fibrocartilage zones compared with young patients. These histopathologic findings suggest that tendon tissue, and tenocytes, undergo transdifferentiation events *in vivo* to form fibrochondrocytes and hypertrophic fibrochondrocytes, and that this transdifferentiation event is altered in the elderly.

Given the different oxygen environment of most connective tissues, we then examined the role of oxygen tension on the phenotype of young and aged human tendon cells. In normal oxygen tension (21%O₂), young and aged tenocytes vary in phenotype. Young tenocytes are elongated and smooth, while aged tenocytes are granular and well-spread. Young tenocytes maintain their phenotype in hypoxic (1%O₂) and normoxic (21%O₂) conditions until late passage. Aged tenocytes, however, rapidly transdifferentiate to a fibrochondrocyte phenotype in normoxia with early passage (as measured by fold-change of connective tissue qRT-PCR markers).

When investigating the changes in young and aged tenocyte intracellular signaling under hypoxic and normoxic conditions, we have found 30-fold decreased Rac1 GTPase activity in hypoxic aged tenocytes versus normoxic aged tenocytes. Similarly, pharmacologic studies demonstrate increased aged tenocyte transdifferentiation to fibrochondrocyte in hypoxic conditions under Rac1 inhibition. Also, adenoviral studies confirm the effect of Rac1 inhibition on aged tenocyte transdifferentiation to fibrochondrocyte in hypoxic, but not normoxic, conditions.

Investigation of the effect of hypoxia on senescence revealed 25% decreased senescence of aged tenocytes in hypoxia. However, Rac1 inhibition in young and aged tenocytes under hypoxic and normoxic conditions revealed no effect of Rac1 inhibition on senescence. These results demonstrate independence of the effect of Rac1 inhibition on tenocyte transdifferentiation in hypoxia, from the effect of hypoxia on senescence. In summary, we demonstrate a role of Rac1 and RhoA GTPase activity on human tenocyte transdifferentiation, which is key to the effect of aging on connective tissues.

POSTER 22: Transport PLUS: Improving Transitions of Care By Adding Value to Routine Patient Transports

Kevin Munjal, MD, MPH, Nadir Tan, BS, Hugh Chapin, MD, MS, EMT, Anjali Misra, Glen Youngblood, BA, EMT-P, Staley Dietrich, EMT-P, Albert Sui, MD, Ula Hwang, MD, MPH, Lynne Richardson, MD.

Background: Older adult patients experience high rates of return ED visits and readmissions following hospitalization due in part to imperfectly understood discharge instructions and high rates of falls in the home. “Transport PLUS” expands the role of Emergency Medical Technicians (EMTs) by adding two simple interventions, a home **fall hazard assessment** (FHA) and a **discharge comprehension assessment** (DCA), to routine ambulance transports from the hospital to the home. Previously reported feasibility data demonstrated 73.1% and 92.7% patient acceptance of the FHA and DCA interventions, respectively, with a mean of 2.54 unique hazards found per assessment, and a knowledge deficiency found in 21.9% of encounters.

Objective: To refine and optimize the Transport PLUS checklist and training materials using a mixed method design.

Methods: Focus groups of Transport PLUS trained EMT’s and Transport PLUS eligible patients were performed with the help of an experienced facilitator. Focus group participants were asked open-ended questions meant to elicit information in the following domains: perceived utility of the intervention, perceptions about fall prevention and transitions of care initiatives, attitudes toward EMT’s, quality of the educational materials provided, barriers to patient acceptability, and strategies to overcome those barriers. Quantitative analysis consisted of stratifying the data from the pilot by each fall hazard and each discharge plan knowledge deficiency identified.

Results: EMT focus group participants expressed personal satisfaction while offering the Transport PLUS service. Patient participants offered positive feedback and indicated that they would like this service to be available to them in the future. Important enhancements to the checklist were made as a result of the focus groups. For example, one of the original hazards used during the initial pilot program called “high reach for supplies” was removed because the providers felt it was too invasive and decreased patient acceptance of the program. By their suggestions, it was transformed to a question “Are there any everyday items that are out of reach?” Patient perspectives on fears and anxieties associated with accepting a new service, especially one in their home, were used to improve the online module and practical sessions as part of EMT training. Quantitative analysis demonstrated a high degree of collinearity between “clutter” and “walkway fall hazard” supporting the removal of one of these items.

Conclusion: The Transport PLUS checklist and associated training materials were refined and optimized based on both qualitative and quantitative methods of analysis. The new refined checklist will be used in a pilot randomized controlled trial to determine efficacy as measured by reduced return ED visits and readmissions at 30 days and reduced incidence of self reported falls at 1 year following the intervention.

Identifying Correlates of Symptom Burden Experienced by Home Hospice Patients and its Association with Patient and Caregiver Outcomes

Veerawat Phongtankuel

As many as 90% of patients experience some degree of symptom burden at the End-of-Life (EoL). While symptom burden is highly prevalent, predicts poorer quality of life, and can escalate during the last days of a patient's life, burdensome symptoms can often be effectively managed. In addition, an increasing number of dying patients are being cared for by hospice agencies. In 2014, hospices provided care to over 1.5 million patients and 45% of all U.S. deaths occurred in hospice. This is particularly germane to aging adults, because patients ages 65 years and older constitute 85% of all hospice enrollees.

Existing literature focused on symptom burden at the EoL has been largely descriptive. While high rates of symptom burden have been documented, little is currently known about the potential correlates of symptom burden and no research to date has examined caregiver (e.g., average hours of caregiving provided per day) or hospice (e.g., frequency of physician/nursing visits) level correlates, which may be important modifiable factors in reducing symptom burden, particularly in the home hospice setting. Preliminary research conducted by the PI of this application suggests that symptom burden and symptom crises experienced by home hospice patients are associated with hospitalization. However, quantitative studies examining the relationship between symptom burden and hospitalization are lacking. Even less is known about whether symptom burden influences other important quality measures such as quality of care at the EoL. Symptom crisis, a term that is commonly used among hospice providers and caregivers but for which there is no consensus definition, has been found to be distinct from symptom burden based on work conducted by the PI and may be associated with multiple adverse outcomes, warranting examination at this time.

In order to improve care and care outcomes of aging individuals at the EoL, it will be important to determine correlates of symptom burden and whether symptom burden is associated with salient adverse outcomes. The rationale for the proposed research is to address the knowledge gaps described above. Short-term objectives of this proposal are to: (1) identify correlates of symptom burden; (2) examine whether symptom burden is associated with hospitalization and quality of care measures; and (3) qualitatively define symptom crisis in the home hospice population. The long-term objective of this study is to design, implement and evaluate comprehensive interventions that can measurably reduce symptom burden and symptom crises while improving care for patients and caregivers on home hospice. This grant has three specific aims.

Aim 1: To identify correlates of symptom burden experienced by home hospice patients at the EoL at the patient, caregiver, and hospice level.

Hypothesis 1: Controlling for patient primary hospice diagnosis, co-morbidity and function, we hypothesize that average number of hours of caregiving per day and frequency of nursing/physician visits during the last week on hospice will explain significant incremental variance in symptom burden scores during the last week on hospice.

Aim 2 – To evaluate the relationship between symptom burden experienced by home hospice patients at the EoL and three specific quality measures (i.e., hospitalization, caregiver satisfaction, quality of EoL care).

Hypothesis 2: Higher total MSAS (i.e., symptom burden) scores will be associated with increased risk of hospitalization, lower FAMCARE (i.e., caregiver satisfaction) scores, and lower CEQUEL (i.e., quality of care at the EoL) scores.

Aim 3 – To define “symptom crisis” in the home hospice population.

Hypothesis 3: The qualitative methods proposed for use in this application will generate a practical working definition for “symptom crisis” in the home hospice population.

The proposed study builds upon a strong academic-community agency partnership between Weill Cornell Division of Geriatrics and Palliative Medicine and the Visiting Nurse Service of New York Hospice and Palliative Care (VNSNYHPC). VNSNYHPC is one of the largest providers of hospice care in New York City. In 2014, VNSNYHPC cared for over 5,000 unique patients and serves a multi-ethnic and multi-cultural population of patients in an urban setting. This established collaboration provides an opportunity to incorporate information and insights from caregivers along with hospice and patient level data that will provide a comprehensive understanding of symptom burden. This work will set the stage for developing future interventions aimed at reducing symptom burden experienced by older adults at the EoL. Creating a definition of “symptom crisis” will allow measurement of a phenomenon that has yet to be characterized but important to examine in the home hospice population.

POSTER 23: Value of Ocular Health Screening and Education in Senior Living Communities

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Background:

With the number of older Americans rapidly growing and expected to reach 72 million by 2030, independent and assisted living facilities, referred to collectively as Senior Living Facilities (SLFs), will increase in popularity. This study examines vision impairment of residents in SLFs and the perceived value of an ocular health screening program.

Methods:

One hundred fifty-seven seniors from two SLFs were screened for eye disease and completed baseline questionnaires. Respondents then participated in eye health education sessions and completed a follow-up survey.

Results:

Respondents had a mean age of 82.3 years. Most were female (76%), lived alone (76%), reported an adequate income (85%), were white (98%), had at least a high school degree (96%), were literate in basic health terms (91% with perfect health literacy test scores), and were regular cell-phone (79%), computer (59%), and internet users (67%). All had health care coverage, 99% had a personal doctor, 93% had had a routine checkup in the past year, and 78% had seen an eye doctor in the past year (94% within two years). 95% wore glasses for near vision, and 76% for distance vision. Reported eye conditions included cataracts (74%), glaucoma (8.9%), macular degeneration (15%), and eye injury (13%). Analysis with paired T-tests demonstrated that after the eye education session, respondents performed better on an eye health quiz ($p<0.001$) and increasingly reported: (i) understanding the benefits of regular eye exams ($p=0.04$); (ii) plans to get an eye exam ($p=0.03$); (iii) understanding their eye conditions ($p<0.01$); and (iv) understanding how to prevent further eye problems ($p<0.01$). Respondents reported being satisfied or mostly satisfied with the eye education and screening program (98%), with 88% willing to pay an out-of-pocket fee for it (at a mean fee of \$26.75). This out-of-pocket payment bore a positive relationship with a person's reported difficulty with driving ($p<0.01$).

Conclusion:

Not only do residents of Senior Living Facilities report several benefits from eye education and screening sessions, they also express a willingness to pay out-of-pocket for such services.

POSTER 24: The Cost Consequences of Age and Comorbidity in Accelerated Postoperative Discharge After Colectomy

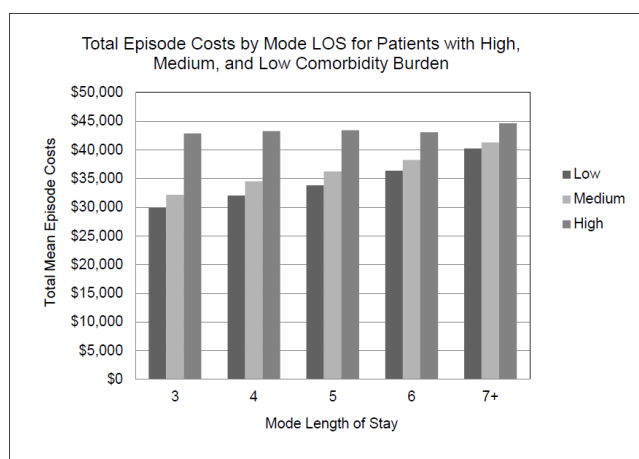
Sarah Shubeck MD, Anne Cain-Nielsen MS, Edward Norton PhD, **Scott E. Regenbogen MD, MPH**

Introduction: As payment for inpatient surgery transitions to bundled payments for surgical episodes, hospitals face increasing pressure to reduce utilization in and out of hospital. We previously found that early routine postoperative discharge after major surgery incurred lower total episode payments without compensatory increase in post-discharge expenditures. Whether this strategy can succeed for older patients and those with higher levels of comorbidity is unknown.

Methods: We evaluated a cross-sectional cohort of 189,229 Medicare beneficiaries 65 or older undergoing colectomy 2009-2012 and computed associations between episode payments and hospitals' length of stay (LOS) stratified by patients' age and health status, according to the Elixhauser Comorbidity Index. Hospitals' LOS was characterized by the mode to reflect typical hospital practice and minimize the influence of outliers. To focus on patients adhering to hospitals' typical care, we then restricted analysis to the 73,212 patients discharged within one day of the mode LOS for each hospital. In this cohort, we evaluated risk-adjusted, price-standardized 90-day overall episode payments including index hospitalization, outlier payments, unplanned readmissions, professional services, and post-acute care.

Results: Total episode payments were lower in shortest LOS than longest LOS hospitals in all age categories (65-69: \$33,084 vs. \$41,006; ≥ 80 \$32,239 vs. \$42,526; both $p < 0.001$). The oldest patients had greater post-discharge care expenditures than youngest patients, but the disparity was similar in shortest and longest LOS hospitals ($\Delta \$289$ vs $\Delta \$1,275$, $p = 0.20$). Conversely, patients with greatest comorbidity had no reduction in total episode payments in shortest LOS hospitals (\$42,848 for 3 day LOS vs. \$44,647 in ≥ 7 day LOS, $p = 0.06$, figure). The increase in post-discharge care expenditures for patients with highest comorbidity was greater in shortest versus longest LOS hospitals ($\Delta \$4,101$ vs. $\Delta \$1,863$, $p = 0.002$).

Conclusion: Even the oldest Medicare beneficiaries experience lower total episode payments without compensatory increase in post-acute care expenditures when undergoing colectomy in hospitals with shortest post-operative LOS pathways. In contrast, those with greatest comorbidity accrue no savings in short LOS hospitals as they require more post-acute care services to achieve early discharge. These findings suggest that payment reform and initiatives to improve the efficiency of perioperative care must consider overall health status more than age alone.



POSTER 25: Granzyme A in Human Platelets Regulates Pro-Inflammatory Gene Synthesis in Aging

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Background

While platelets have established roles in hemostasis, these cells also have dynamic functions that span the immune and inflammatory continuums. For example, platelet adhesion and signaling to monocytes regulates the synthesis of MCP-1 and IL-8. Aging is associated with exaggerated inflammation, but the mechanisms remain incompletely understood. We hypothesized that aging-related alterations in platelets increases downstream pro-inflammatory gene synthesis by target monocytes.

Methods

To determine this, we incubated isolated platelets and monocytes from healthy older (age \geq 65, n \geq 30) and younger (age $<$ 65, n \geq 30) subjects. IL-8 and MCP-1 measured by ELISA. Platelet P-selectin and RANTES were measured by flow cytometry and ELISA. RNA sequencing was used to interrogate the platelet transcriptome in older and younger adults. Candidate signaling molecules were validated at the mRNA and protein level and using recombinant proteins, quenching antibodies, and pathway inhibitors.

Results

When co-incubated with platelets, monocytes isolated from older adults synthesized significantly greater MCP-1 and IL-8. MCP-1 and IL-8 synthesis was reduced when monocytes from older adults were incubated with platelets from younger adults (e.g. switch experiments). Conversely, MCP-1 and IL-8 synthesis was increased when monocytes from younger adults were incubated with platelets from older adults. Platelet P-selectin and RANTES (required for monocyte adhesion to platelets and signal-dependent synthesis of IL-8 and MCP-1) did not differ between older and younger adults. RNA sequencing of isolated platelets identified age-associated, differentially expressed candidates predicted to mediate cell-cell signaling events. We focused in detail on granzyme A (GrzA), a serine protease not previously identified in human platelets. We next confirmed that platelets from older adults had increased GrzA mRNA and protein expression compared to younger adults (~8-fold, p $<$ 0.05). In contrast, GrzH and GrzM expression did not differ between older and younger adults. As isolated monocytes did not expression GrzA, we hypothesized that GrzA in platelets regulated signal-dependent synthesis of IL-8 and MCP-1 by monocytes. Consistent with this hypothesis, inhibiting GrzA attenuated MCP-1 and IL-8 synthesis. In addition, the addition of exogenous, GrzA to platelets and monocytes increased MCP-1 and IL-8 synthesis. Blocking TLR4 prevented GrzA-induced MCP-1 and IL-8 synthesis.

Conclusions

This is the first report that human platelets express GrzA. Platelet GrzA is significantly increased in older adults and triggers pro-inflammatory cytokine synthesis by monocytes. We identify that platelet GrzA signals through TLR4. These findings also provide new evidence of how aging related alterations in the platelet molecular signature regulate pro-inflammatory gene synthesis by target monocytes.

POSTER 26: Identifying Injury Patterns Associated with Physical Elder Abuse: Analysis of Highly Adjudicated Cases

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Background:

Elder abuse is common and has serious health consequences but is under-recognized and under-reported. As assessment by health care providers may represent the only contact outside the family for many older adults, physicians have a unique opportunity to diagnose suspected elder abuse and initiate intervention. Despite this, physicians seldom identify or report elder abuse. Among the most important reasons for this is the difficulty in distinguishing between elder abuse and the sequelae of unintentional trauma. Little systematic research exists examining injury patterns consistent with elder abuse. Our goal was to identify injury patterns associated with physical elder abuse in comparison with patients presenting to the Emergency Department (ED) with unintentional falls.

Methods:

We conducted a case-control study to identify differences in injury characteristics and patterns between physical elder abuse and unintentional fall injuries. We partnered with a large, urban district attorney's office and examined 100 successfully prosecuted case files from 2003-2014 of physical abuse of a victim aged ≥ 60 where the perpetrator had been convicted or pled guilty. We evaluated police, legal, and medical records from these highly adjudicated cases, focusing on descriptions and photographs of injuries. To facilitate completely and accurately characterizing injuries, we developed a novel classification system / taxonomy. As a comparison group, we prospectively enrolled control subjects who presented to the ED after an unintentional fall from 9/2014 – 6/2016 in a large, urban, academic medical center. These controls were matched to cases by age, and photographs were taken of all injuries.

Results:

Physical abuse victims were significantly more likely than unintentional fallers to have bruising (75% vs. 53%, $p=0.01$) and injuries on the maxillofacial/dental/neck region (61% vs. 38%, $p=0.01$). Abuse victims were less likely to have abrasions (33% vs. 54%, $p=0.02$), fractures (7% vs. 37%, $p<0.001$), or injuries on the lower extremities (9% vs. 43%, $p<0.001$). Examination of precise injury locations yielded additional differences. Physical elder abuse victims were more likely to have injuries in the left peri-orbital area (21% vs. 7%, $p=0.03$). Also, injuries to the ulnar forearm (10% vs. 2%, $p=0.06$), or neck (9% vs. 0%, $p=0.01$) occurred commonly among abuse victims but not among fallers.

Conclusion:

Specific, clinically identifiable differences may exist between unintentional injuries and those from physical elder abuse. This includes potentially pathognomonic injury patterns that very infrequently occur after an accident. Future prospective research comparing abuse-related injury patterns to those sustained by older adults after an accident such as a fall and examining the findings described here is critically needed to assist health care providers in identifying suspicious injuries and protecting vulnerable older adults.

POSTER 27: Defining T Cell Dysfunction in the Older Kidney Transplant Recipient

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Departments of Pathology and Medicine, David Geffen School of Medicine at UCLA

Background:

The numbers of older patients with end stage organ disease requiring organ transplantation continues to grow as the population ages. However, older transplant recipients experience increased rates of infection and death, but decreased rates of rejection, as compared with younger patients. This observation suggests that immune dysfunction in older transplant recipients leads to vulnerability to infection. Our objective was to compare immunologic profiles in older versus younger solid organ transplant recipients.

Methods:

Peripheral blood mononuclear cells were isolated from 20 older (\geq age 60) and 34 matched younger (ages 30-59) kidney transplant recipients at 3 months after transplantation. Immunophenotyping was performed by multiparameter flow cytometry to detect population frequencies of exhausted, activated, and senescent T cells, as well as maturation status. Statistical analysis by Kruskal-Wallis test was performed using Jmp Pro 11.

Results:

Older kidney transplant recipients had a statistically significantly lower frequency of naïve CD4+ (19.1% versus 37.0% in younger patients, $p=0.002$) and naïve CD8+ T cells (12.7% versus 38.3%, $p<0.001$). Older recipients also demonstrated an increased frequency of effector memory (EM) CD4+ (42.2 versus 22.5%, $p=0.002$), EM CD8+ (33.3% versus 20.4%, $p<0.001$), and terminally differentiated CD8+ T cells (48.7% versus 29.1%, $p=0.005$). Older recipients also displayed increased frequency of exhausted and senescent T cells, with increased frequency of CD57+ (30.1% versus 19.4%, $p=0.02$) and KLRG1+ CD8+ T cells (63.7% versus 36.3%, $p<0.001$).

Conclusion:

Compared to younger recipients, older kidney transplant recipients displayed decreased frequency of naïve CD4+ and CD8+ T cells and increased frequency of EM CD4+ and CD8+ T cells, exhausted and senescent CD8+ T cells, and pro-inflammatory M1 monocytes, suggesting a possible mechanism for increased vulnerability to infection in the older transplant recipient. Further studies will evaluate the evolution of these changes over time and may lead to noninvasive techniques for patient monitoring, customization of immune suppression, and candidate selection based on better understanding of biologic, rather than chronologic, age.

POSTER 28: The Syndemic of Stress and Aging in an HIV-infected Population

Schafer K, Brenes G, Danhauer S, Duckworth K, Williamson J, High K.

Background:

While life expectancy has increased markedly for people living with HIV (PLWH), gains in expected years of life have come at a cost - earlier onset and greater frequency of age-associated comorbid conditions, such as osteoporosis, metabolic syndrome, and cardiovascular disease. Accumulated multi-morbidity is the likely cause of much higher than age-expected rates of frailty in PLWH. Perceived stress is prevalent in PLWH and, when present, associated with worse clinical outcomes, including poor engagement in HIV care, rapid progression to AIDS, and higher AIDS-related mortality. Stress is a well-documented risk factor for many illnesses that demonstrate early onset in PLWH, and perceived stress has been hypothesized to be a cause of aging itself. Nonetheless, the role of perceived stress in early-onset aging and age-related illness in PLWH is essentially unexplored. Investigating the interrelatedness of aging, perceived stress, and HIV may elucidate mechanism(s) that underlie a phenotype of premature aging and functional decline in HIV patients with implications for understanding fundamental mechanisms of stress and aging in HIV uninfected populations.

Methods:

We are conducting a pilot randomized controlled study to estimate correlations between perceived stress and both aging and HIV-specific outcomes. The study will also measure feasibility and acceptability of a cell phone-delivered stress reduction intervention. Participants will complete structured interviews to measure perceived stress, traumatic stressors, functional status, frailty, and potential covariates across the age spectrum. Stress measures will be correlated with biomarkers known to be associated with functional decline in aging, HIV-uninfected populations.

Results:

To date we have consented 20 participants and completely enrolled three. No formal data analysis or feasibility assessment has yet been completed.

Next steps:

We will continue to recruit participants towards our target sample of 100. The results will be used to determine sample sizes necessary to perform definitive studies to assess the link between perceived stress and a phenotype of premature aging, as well as interventional studies of stress modification to mitigate the onset of early multi-morbidity and functional decline. These findings can be applicable to both HIV-infected and HIV-uninfected populations.

POSTER 29: High CSF tau/A β 42 Predicts Poor Baseline and Declining Longitudinal Cognitive Performance in Middle-aged, Cognitively Normal Individuals

Suzanne E. Schindler, M.D., Ph.D., Mateusz S. Jasielec, M.S., Hua Weng, Ph.D., Jason J. Hassenstab, Ph.D., John C. Morris, M.D., David M. Holtzman, M.D., Chengjie Xiong, Ph.D., Anne M. Fagan, Ph.D.

Importance:

Identifying which neuropsychological measures detect the earliest cognitive changes associated with Alzheimer disease (AD) brain pathology would be helpful for the diagnosis of early AD and AD clinical trial design.

Objective:

To determine which neuropsychological measures detect the earliest cognitive impairment associated with AD brain pathology as defined by high cerebrospinal fluid (CSF) tau/A β 42.

Design:

CSF was obtained at baseline from participants found to be cognitively normal upon thorough clinical assessment. Participants also completed a battery of neuropsychological tests at baseline, with longitudinal clinical assessment and neuropsychological testing every one to three years. The average follow-up was 6 years.

Setting:

Research study at an academic medical center.

Participants:

233 middle- to older-aged community-dwelling individuals (mean age 61 years) who were cognitively normal at their baseline assessment and CSF collection. 66 individuals had high CSF tau/ A β 42 (> 0.46) consistent with AD brain pathology. 15 participants developed clinically significant cognitive impairment during follow-up.

Main Outcome:

Performance on 10 different neuropsychological measures as predicted by baseline CSF tau/ A β 42.

Results:

CSF tau/ A β 42 was associated with baseline performance on 6/10 neuropsychological measures, especially measures of episodic memory, and longitudinal performance on 8/10 neuropsychological measures, especially measures of global cognition. The free recall portion of the Free and Cued Selective Reminding Task (FCSRT-free) distinguished between high and low CSF tau/ A β 42 groups the earliest (at baseline), followed by logical memory and sequencing at one year following CSF collection.

Conclusions and Relevance:

Measures of episodic memory (FCSRT-free and logical memory) and working memory (sequencing) detected the earliest impairment in cognitively normal individuals with CSF biomarkers consistent with AD brain pathology. Impairment on these measures may help identify otherwise cognitively normal individuals who are at increased risk for development of AD dementia.

POSTER 30: Older Adults' Perspectives on Incorporating Life Expectancy in Cancer Screening

Kimberley Lee, Antonio Wolff, Craig Pollack, Cynthia Boyd, Sydney Dy, **Nancy Schoenborn**.

Background:

Research and clinical practice recommendations advocate that a patient's life expectancy be incorporated in cancer screening as the benefits of screening may take years to accrue but the harms may be more immediate. Older adults' perspectives regarding incorporating life expectancy into cancer screening are unknown.

Methods:

We conducted individual interviews with 40 community dwelling adults 65+ years of age. We explored their perspectives on the role of life expectancy in cancer screening and preferences for related discussions. The interviews were audio-recorded and transcribed verbatim. Two investigators independently coded the transcripts using qualitative content analysis and results are summarized as major themes.

Results:

The participants' mean age was 76, 57% were female, and 63% were white. We identified three major themes: 1) Many participants expressed skepticism towards using life expectancy to inform cancer screening decisions. 2) Many participants did not want to discuss life expectancy in the context of cancer screening; in fact, many did not believe that physicians can estimate life expectancy at all. 3) Participants' preferences for how to discuss cessation of cancer screening varied, some actually preferred minimal information or no discussion. Participants who endorsed high levels of trust in their physician were more receptive to cessation of screening-related discussions.

Conclusions:

Despite increasing recommendations that advocate for life expectancy to be incorporated in cancer screening decisions, older adults report being skeptical of physicians' ability to estimate life expectancy and reluctant to discuss life expectancy in the context of cancer screening. Further research is needed to understand acceptable ways for communicating and incorporating life expectancy to inform individualized cancer screening decisions.

POSTER 31: A Comparison of Older Adults with Low-Risk and High-Risk Alcohol Use in the Emergency Department

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¹UNC School of Medicine; ²Drexel College of Medicine; ³UNC Gillings School of Public Health

⁴Yale School of Medicine; *Corresponding author

Background:

Alcohol misuse is a common but under-recognized problem among older adults and can increase the risk of vehicle collisions, falls, and chronic medical problems. Emergency Department (ED) visits provide an important clinical setting for identifying high-risk alcohol use among older adults. Little is known about the epidemiology of this problem or the performance of screening instruments in this setting. We sought to estimate the prevalence of high-risk drinking among older adults receiving care in a U.S. ED, characterize high-risk drinkers, and assess the accuracy of two widely-used screening tools for detecting high-risk alcohol use.

Methods:

We conducted a cross-sectional study of cognitively intact adults aged 65 and older presenting to an academic ED serving a racially and socioeconomically diverse population. High-risk drinkers were identified using a 2-question screener to define whether intake was greater than the National Institute on Alcoholism and Alcohol Abuse (NIAAA) guidelines for older adults: >7 drinks per week OR >3 per occasion. All others were considered low-risk. Intake was verified using the timeline follow-back method. Characteristics of high-risk and low-risk individuals were compared. The sensitivity and specificity of the Alcohol Use Disorders Identification Test (AUDIT) and CAGE score were calculated using consumption above NIAAA guidelines as the criterion standard.

Results:

960 older adults presenting to the ED were screened. 99 (10.3%) met criteria for high-risk alcohol use, of which 56 were enrolled. 124 low-risk individuals were enrolled for comparison. Comparing high-risk and low-risk individuals the median ages were 71 and 74, 64% and 34% were male, and median numbers of drinks per week were 18 and 1 respectively. The number of recent falls and hospitalizations was similar in the two groups. With a cutoff ≥ 8 , the AUDIT had a sensitivity of 36% and specificity of 98% to detect high-risk alcohol use by NIAAA criteria. A CAGE score ≥ 2 had sensitivity of 29% and specificity of 99%.

Conclusion:

High-risk alcohol use is prevalent among older adults in the ED, and more common among men. A 2-question screener based on the NIAAA criteria can efficiently identify high-risk alcohol use. The AUDIT and CAGE scores had poor sensitivity for detecting high-risk alcohol use in this population.

POSTER 32: Functional Outcomes after Transurethral Resection of the Prostate (TURP) among Nursing Home Residents

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¹University of California, San Francisco, Department of Urology; ²University of California, San Francisco and San Francisco VA, Division of Geriatrics; ³University of California, San Francisco, Department of Surgery, San Francisco, CA

Introduction and Objectives:

Bladder outlet obstruction, a common problem in older men, is often treated by transurethral resection/incision of the prostate (TURP/TUIP) to avoid the need for an indwelling foley catheter. However, older men with functional impairment who reside in nursing homes may receive little benefit from this surgery. The objective of this study is to determine whether poor functional status is associated with TURP/TUIP failure, as measured by the presence of a foley catheter 1-year post surgery.

Methods:

Using inpatient Medicare claims and the Minimum Data Set (MDS) for Nursing Homes, we identified all male nursing home residents who underwent inpatient TURP/TUIP from 2005 to 2009. We examined changes in activities of daily living (ADL) up to 12 months' post-surgery and factors associated with operative failure. The primary outcome of interest was surgical failure, measured by the presence of an indwelling foley catheter 1 year after surgery.

Results Obtained:

We identified 2,869 men residing in nursing homes who underwent TURP/TUIP during the study period. Over half of the cohort (59%) had a foley catheter before the procedure. One year after the procedure, 31% had a foley, 38% had no foley, and 31% had died. In regression analysis, the presence of a foley catheter at baseline (RR 1.37; $p<0.0001$), ADL decline before the procedure (RR 1.10; $p=0.02$), worse baseline ADL score (RR 1.34; $p<0.0001$), and hospitalizations in the year prior to surgery (RR 1.24; $p=0.005$) were associated with an increased risk of surgical failure among 1-year survivors. Older age and high Charlson comorbidity score were not associated with a significant increased risk of TURP/TUIP failure.

Conclusions:

Poor baseline physical function is associated with an increased risk of TURP/TUIP failure, as measured by the presence of a foley catheter 1-year post procedure. Preoperative measurement of ADLs may aid in surgical decision-making by identifying patients in whom TURP/TUIP is unlikely to be of benefit.

Funding:

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POSTER 33: Geriatric Assessment in Older Adults with Multiple Myeloma

Tanya M Wildes, Sascha Tuchman, Kathryn Trinkaus, Graham Colditz

Introduction: Multiple myeloma (MM) is a disease of older adults, yet standard baseline assessments do not include assessment of physiologic age or frailty. In older adults with cancer, geriatric assessment (GA) predicts treatment toxicity and survival. In MM, frailty is associated with treatment discontinuation, toxicity and survival (Palumbo *Blood* 2015). Studies of patient preferences have shown that maintenance of independence in daily activities is a high priority in older adults with serious medical conditions (Fried *NEJM* 2002) We sought to examine GA factors associated with 1) autologous stem cell transplant (ASCT) eligibility and 2) increased functional dependence over follow-up.

Methods: Patients (pts) with newly diagnosed MM aged 65 and older were enrolled in a prospective cohort study at 2 institutions. Pts underwent a brief, primarily self-administered geriatric assessment (GA) at baseline, 3- and 6-months of follow-up. GA included functional status (instrumental activities of daily living/IADLs), medications, cognition (Short Blessed Test), psychological state (Mental Health Inventory), the Timed Up and Go physical performance test (TUG) and the Charlson comorbidity index (CCI). Analyses were performed using SAS v9.4/Stata 14.1. Descriptive and inferential statistics were used to summarize and compare groups, as appropriate.

Results: 40 pts enrolled, with a median age of 69.5 (range 65-84). 77.5% were white, 12.5% black and 10% other/unknown. 62.5% were male. Median MD-rated Karnofsky performance status (KPS) was 80 (range 50-100). Geriatric syndromes were common, with 62.5% of patients reporting dependence in one or more IADLs, 47.5% with one or more comorbidities, 28.5% reported one or more falls in the prior 6 months and 10% screened positive for cognitive impairment. Median number of medications was 9 (range 1-23). 26 pts (65%) were felt to be ASCT candidates by the treating physician, who was blinded to the GA. Factors associated with MD-determined ASCT candidacy were: fewer comorbidities (mean CCI 0.6 vs. 1.9, $p=0.0065$), higher MD-rated KPS (71% MDKPS ≥ 80 vs 47%, $p=0.021$) and faster TUG (mean 11.9 seconds vs 15.8, $p=0.013$). While 26 were considered eligible, only 21 pts (52.5%) ultimately underwent ASCT [attrition due to pt preference (2), progression (1), failed mobilization (1) and unknown (1)]. Increasing age (OR 0.77/year, 95%CI 0.601-0.988) and IADL dependence (OR 0.043, 95% CI 0.004-0.464), but not KPS or comorbidities, were independently associated with decreased odds of actually undergoing ASCT.

We also examined factors associated with changes in functional status in the 36 patients who completed 6-month follow-up. 6 pts (16.7%) had a 2 point increase in dependence in IADLs. In a generalized linear model, undergoing ASCT and baseline comorbidities were independently associated with higher IADL scores at 6-months ($p=0.036$, $p=0.033$ respectively). All patients with an increase in IADL scores (increased functional dependence) had a change in treatment regimen due to toxicity. Age, International Staging System Stage, gender, deletion 17p and disease progression were not associated with increased functional dependence. Development of peripheral neuropathy was not associated with IADL dependence or falls.

Conclusions: GA reveals that geriatric syndromes are common in older adults with multiple myeloma. GA may provide a framework to objectively define transplant eligibility. Increased functional dependence is associated with baseline comorbidities and undergoing ASCT. Further study is needed to examine the utility of GA in predicting treatment toxicity and survival.

POSTER 34: Association of Pre-Chemotherapy Peripheral Blood Biomarkers of Aging (IL-6, CRP and D-dimer) with Chemotherapy Toxicity and Relative Dose Intensity (RDI) in Women with Breast Cancer

Yuan Yuan, Nilesh Vora, Can-Lan Sun, Daneng Li, Joanne Mortimer, The-hang Luu, George Somlo, James Waisman, Joseph Chao, Vani Katheria, Timothy Synold, Vivi Tran, Shu Mi, Abraham Levi, Susan Yost, Anait Arsenyan, Jennifer Choi, Laura Zavala, Arti Hurria

Background: Chemotherapy (chemo) decreases the risk of relapse and mortality from breast cancer (BC); however, it comes with the risk of toxicity. Chemo efficacy depends on RDI, and patients (pts) who receive <85% RDI have poorer overall survival. Pro-inflammatory and coagulation factors serve as biomarkers of aging and functional reserve. The utility of these markers as biological risk factors for chemo toxicity in patients with BC is unknown. This study was performed to determine if pre-chemo IL-6, CRP and D-dimer were associated with chemo toxicity and reduced RDI in women with BC receiving adjuvant or neoadjuvant chemo.

Methods: This study enrolled women across the aging spectrum with Stage I-III BC. Prior to (neo)adjuvant chemo, peripheral blood was collected for IL-6, CRP, and D-dimer. (Neo)adjuvant chemo regimens were prescribed at the MD's discretion. Grade ≥ 3 toxicities defined by National Cancer Institute Common Terminology Criteria for Adverse Events (NCI CTCAE), version 4.0, were captured. Univariate and multivariate analyses were performed to describe the association of these biomarkers with chemo toxicity and <85% RDI, controlling for relevant tumor and host factors (stage, receptor status, age and co-morbidities).

Results: 159 patients (mean age of 58.4, range 30-81) with stage I-III BC (Stage I [n=34; 21.3%], Stage II [n=88; 55.3%], and Stage III [n=37; 23.3%]) were enrolled. 89% and 11% received adjuvant and neoadjuvant chemotherapy respectively. Chemo regimens include: doxorubicin +cyclophosphamide/paclitaxel (AC/T) (37%), docetaxel/cyclophosphamide (TC, 35%), AC/T/trastuzumab(AC-TH) (7%), docetaxel/carboplatin/trastuzumab (TCH, 7%), sequential A/T/C (5%) and other regimens (9%). At least one grade 3-5 toxicity occurred in 70 (44%) patients (93% grade 3, 6% grade 4, and 1% grade 5). Grade 3 to 5 hematological (heme) and non-heme toxicity occurred in 23% and 39%, respectively. The most common grade 3- 4 heme toxicities were anemia (38%), leucopenia (29%), and neutropenia (24%). One patient developed grade 5 toxicity (pneumonitis). The most common grade 3-4 non-heme toxicities were electrolyte abnormalities (12%), neuropathy (10%), mucositis (8%), infection (8%) and fatigue (8%). Univariate analysis revealed an association of increased pre-chemo D-dimer and grade ≥ 3 toxicity ($p=0.02$) (Table 1). Among the clinical factors, increased age and number of co-morbidities was associated with grade ≥ 3 toxicities ($p<0.01$ respectively). After controlling for age and number of comorbidities the association between elevated D-dimer and chemo toxicities remain significant (OR 2.1 [95%CI1.1-3.9]). RDI was less than 85% for 26% of pts. There were associations between RDI <85% and higher D-dimer ($p<0.01$) and IL-6 ($p=0.02$) levels pre-chemo. There was no association of CRP with chemo toxicity or RDI.

Conclusions: Grade 3-5 toxicities are common in women with BC undergoing (neo)adjuvant chemo. A biomarker of aging, D-dimer, is associated with increased risk of chemo toxicity and RDI <85%.

Table 1 Association of peripheral blood biomarkers of aging and Grade 3-5 chemo toxicities

	Grade ≥ 3 Toxicity (N=89) Median (Range)	Grade < 3 Toxicity (N=70) Median (Range)	P-Value
IL-6 (pg/ml)	1.7(0 -42.1)	1.9 (0-19.6)	0.57
D-dimer (μ g/ml)	0.8(0.1-3.3)	0.5 (0.1-2.6)	0.02
CRP (μ g/ml)	2.6(0.1-48.4)	3.0 (0.2-44.3)	0.57