

Poster Presentations

Aging

Measures of lower body function as predictors of mortality among Mexican Americans aged 75 and older



S.A. Milani, P. Cantu, K.S. Markides. University of Texas Medical Branch, Galveston, TX

Purpose: We expand previous research from the Hispanic Established Population for the Epidemiologic Study of the Elderly (H-EPESE) by examining the association between measures of lower body functioning and mortality over eight years. We hypothesize that objective and subjective measures of lower body function will predict mortality.

Methods: Data from the H-EPESE were used (2004–2013), which included adults aged 75 and older. The short physical performance battery (SPPB), walking speed, and self-reported lower body activities of daily living (ADLs) were used as measures of objective and subjective reported measures of lower body functioning. Cox proportional hazards models were used to assess the relationship between lower body function and mortality ($n=1,657$).

Results: Cox proportional hazard models show that lower SPPB score, slower walking speed, and ADL disability were associated with increased mortality. The two lowest SPPB score groups had hazard ratios of 2.15 (95% CI: 1.66, 2.79) and 1.56 (95% CI: 1.18, 2.06), the two lowest walking speed score groups had hazard ratios of 2.05 (95% CI: 1.53, 2.76) and 1.44 (95% CI: 1.05, 1.96), and those reporting any ADL had hazard ratios of 1.75 (95% CI: 1.50, 2.04).

Conclusions: Subjective measures of functioning can provide similar mortality information to objective measures in this population of underserved individuals aged 75 and older. This has clinical implications since information on self-reported ADLs is quicker to obtain than physical batteries.

Association among sleep duration with nap and stroke stratified by self-health status among Aging-Chinese health and retirement longitudinal study



W. Li, W. Sun. Robert Stempel College of Public Health & Social Work, Florida International University, Miami, FL

Purpose: Although short sleep duration is related to chronic conditions such as stroke, this association is less well-known stratified by health status. We assessed the association between total sleep duration and stroke in different health status among elderly Chinese.

Methods: Data were derived from the 2011 China Health and Retirement Longitudinal Study (CHARLS) with 4,729 respondents over 65 years old. Binary logistic regression was used to estimate the odds ratio (AOR) and 95% Confidence Interval (95%CI) of the association between total sleep time and stroke stratified by self-health status adjusting for confounders.

Results: After adjusting for demographic characteristics, socioeconomic status, lifestyle, health status and comorbidity, there was an association (AOR=2.05, 95%CI 1.31–3.19) between total sleep duration (less than 7 hours per day) and stroke. Stratifying by self-health status, in those who reported with good health status, there was no significant association between total sleeping time and stroke among those who reported good health status. However, in those reporting poor health status, the total sleeping time (less than 7 hours per day) was 2.11 (95%CI 1.30–3.44) times to report with stroke than those with a normal total sleeping duration. Disability status was associated with stroke in both self-reported good and poor groups (AOR=2.89, 95%CI 1.04–8.07; AOR=2.62, 95%CI 1.84–3.73, respectively). However, residence status was only associated with stroke among individuals reporting poor health (AOR=0.62, 95%CI 0.41–0.94).

Conclusion: Stroke is significantly associated with total sleeping time among individuals reporting poor health. Policy should be made targeting this vulnerable population in preventing stroke.

The association of ethnicity and Hispanic acculturation status with advance directive completion among older patients in an integrated health system



R. Gonzalez, L. Lyon, J. Rabbani, C. Conell, D. Postlethwaite, M. Spaulding, M. Mason. Kaiser Permanente, Oakland, CA

Purpose: Hispanics have lower Advance Directive (AD) completion than non-Hispanic whites. Few studies have investigated the role of acculturation in end of life planning. We aimed to assess whether acculturation (language preference and needing an interpreter) affected AD completion and hypothesized less acculturated Hispanics would have lower rates of AD completion than English speakers.

Methods: This retrospective cohort study analyzed 620,948 electronic medical records from a Northern California integrated health system between 2013 and 2017 to examine AD completion by January 1, 2018 patients aged 55 years or older, and whether acculturation and having an AD among Hispanic patients were associated. Descriptive statistics and bivariate analysis were performed to compare AD completion among non-Hispanic whites, Hispanics, and Hispanic subgroups by acculturation status (English-speaking, Spanish-speaking and needed interpreter). We conducted multivariable logistic regression to determine the relationship between Hispanic acculturation and having an AD while controlling for demographic, clinical and utilization factors.

Results: We found 20.3% of non-Hispanic whites ($n=512,577$) and 10.9% of Hispanics ($n=108,371$) had completed an AD. Among Hispanics, lower acculturation resulted in lower odds of AD completion. Compared to English speakers, Spanish speakers had 50% lower odds of completing an AD (OR=0.5, 95% C.I. 0.4–0.5) while Spanish speakers needing an interpreter had 60% lower odds (OR=0.4, 95% C.I. 0.3–0.4). Additional predictors of successful AD completion were being female, being older, having more comorbidities, more hospital and Emergency Department visits and higher socioeconomic status.

Conclusions: These findings indicate need for more tailored outreach to Hispanics, particularly among less acculturated subgroups, to reduce AD completion disparities.

Cancer

Trends in pediatric cancer mortality and survival in the United States



D.A. Siegel, L.C. Richardson, S.J. Henley, R.J. Wilson, N.F. Dowling, H.K. Weir, E. Tai, N Buchanan Lunsford. Division of Cancer Prevention and Control, Centers for Disease Control and Prevention, Atlanta, GA

Purpose: While pediatric cancer mortality and survival has improved in the United States over the past 40 years, disparities exist by age, race/ethnicity, and cancer type. To assess progress, this study examined recent mortality and survival data for individuals aged <20 years.

Methods: Age-adjusted death rates were calculated using the National Vital Statistics System during 2002–2016. Average annual percent change (AAPC) was calculated using joinpoint regression. Five-year relative survival was calculated using National Program of Cancer Registries data during 2001–2014. Differences in survival were compared using non-overlapping 95% confidence intervals (CI). Death rate and survival were estimated overall and by sex, 5-year age group, race/ethnicity, and cancer type.

Results: Pediatric cancer death rates decreased during 2002–2009 (AAPC=–2.6, 95% CI –3.5––1.6), but plateaued during 2009–2016 (AAPC=–0.4, 95% CI –1.4–0.6). During 2002–2016, death rates decreased among both sexes, all age groups, whites, blacks, Hispanics, leukemia, and lymphoma, but were unchanged for brain, bone, and soft tissue cancers. Comparing 2001–2007 to 2008–2014, survival improved from 81.8% (95% CI, 81.5–82.1) to 84.8% (95% CI, 84.6–85.1). Survival improved for both sexes, all ages, and whites, blacks, and Hispanics, but was highest in both periods among females, ages 15–19 years, and whites. Survival improved for leukemias, lymphomas, and brain cancers, but not for bone and soft tissue cancers.

Conclusions: While overall death rates decreased and survival increased, disparities exist by sex, age, race/ethnicity, and cancer type. Future improvements in pediatric cancer outcomes might depend on improving therapies, access to care, and supportive and long-term care.

Adherence to Children's Oncology Group Long-Term Follow-up Guidelines among high-risk adolescent and young adult cancer survivors



H. Tanenbaum, J. Wolfson, L. Xu, K. Cannavale, S. Bhatia, C. Chao. Kaiser Permanente Southern California, Pasadena, CA

Purpose: Cancer survivors are at risk of late effects from therapeutic exposures, making it essential to screen for early detection of these conditions. We evaluated adherence to the Children's Oncology Group Long-Term Follow-up Guidelines among adolescent and young adult (AYA) cancer survivors to understand gaps in survivorship care for this unique age group.

Methods: Kaiser Permanente Southern California members diagnosed with cancer between age 15-39 from 2000-2010 with 5-year survival after diagnosis were included (n=3827). Based on cumulative chemotherapy and radiation exposures, 1019 and 140 survivors were identified as high-risk groups recommended for early cardiomyopathy and breast cancer screening, respectively. For each individual, we calculated the Prevention Index (PI, proportion of person-time covered by preventive services relative to time eligible) for each screening service. We then dichotomized the PI and evaluated predictors for adherence to screening recommendations using multivariable logistic regressions.

Results: The mean PI for cardiomyopathy screening was 3.9% (SD=16.49%). For breast cancer screening, the mean PI was 77.5% (SD=25.13%) and 23.5% (SD=30.93%) among survivors of breast cancer and other cancers, respectively. Advanced stage (OR=3.17, 95% CI: 1.57-6.41) and breast cancer diagnosis (OR=3.46, 95% CI: 1.48-8.08) was associated with better adherence to cardiomyopathy screening. Age, race/ethnicity and stage at diagnosis were not associated with adherence to breast cancer screening guidelines.

Conclusion: We found a large gap in follow-up care for AYA cancer survivors at high risk for cardiomyopathy and breast cancer late effects. Adherence to recommended screenings was poor and may be influenced by cancer type and stage. Our findings can help guide improvement efforts for survivorship care.

T-Cell Acute Lymphoblastic Leukemia immunophenotype predicts the survival disadvantage of black children with ALL



L. Holmes, Jr., K. Herring, K. Dabney, P. Masire. Nemours Healthcare System for Children, Wilmington, DE

Purpose: Acute Lymphoblastic Leukemia (ALL) is the most commonly diagnosed childhood malignancy, despite improved survival. We aimed to assess ALL survival by race and sex, and to determine the exposure function of T-cell immunophenotype in the survival disadvantage of blacks and males.

Method: The Surveillance, Epidemiology and End Result (SEER) data of children with ALL, 1973-2015 were examined retrospectively. Survival was assessed using Kaplan Meier, Nelson Aalen cumulative hazard, Log rank, Schoenfeld for proportional hazard assumption, and Cox proportional hazard model for the predictors of survival.

Results: There were 18,720 cases of which 11,669 (62.5%) were B-ALL, 1,614 (8.6%) were T-ALL and 5,437(29%) were unspecified. Compared to whites, blacks with ALL were 42.1% more likely to die, hazard ratio (HR) = 1.42, 95% CI= 1.27-1.59. Relative to females, males were 30% more likely to die, HR=1.30, 95% CI= 1.21-1.39. Survival varied by immunophenotype, with T-ALL and ALL-unspecified indicating survival disadvantage relative to B-ALL. Children with T-ALL were 54% (HR=1.54, 95% CI=1.37-1.74), while children with ALL unspecified were 81% (HR= 1.81, 95% CI=1.68-1.94) more likely to die relative to B-ALL. After controlling for confoundings, blacks compared to whites with T-ALL were 61% more likely to die,

adjusted HR (aHR)= 1.61, 99% CI= 1.10-2.39, while for B-ALL, blacks were 31% more likely to die, aHR=1.31, 99% CI= 1.03-1.66. In contrast, after similar adjustment, males with B-ALL were 21% more likely to die (aHR=1.21, 99% CI= 1.05-1.38).

Conclusion: T-Cell immunophenotype predicts the survival disadvantage of blacks, while B-lineage correlates with males' survival disadvantage.

Conflicts of Interest: All authors (LH, KH, KD and PM) reviewed the abstract and the supplement (methods and results), approved the final draft and have declared no conflicts of interest.

Stage of diagnosis and mortality among non-alcoholic fatty liver disease liver cancer patients: revision



J. Smith-Gagen, T. Dunlap. School of Community Health Sciences/MS 274, University of Nevada, Reno, NV

Purpose: Non-alcoholic fatty liver diseases (NAFLD) are suspected of causing between 15- 50% of hepatocellular carcinomas (HCC). NAFLD is suspected to be one of the main drivers of the increasing HCC rates. The epidemiology of NAFLD-HCC is severely limited because population-based cancer registries do not define precipitating factors (i.e., NAFLD and exclusion criteria like hepatitis). The objective of this research is to overcome cancer registry limitations and to describe NAFLD-HCC patients epidemiologically.

Methods: Medicare claims data were linked to the SEER national cancer registry data. Claims data linkages allow identification of NAFLD and exclusion of hepatitis and other HCC etiologies. We identified 1,132 patients with a NAFLD-HCC diagnosed between 1995-2013 aged 68 or older.

Results: Relative to symptomatic (severe) cirrhosis, patients without cirrhosis had increased the odds of late-stage NAFLD-HCC. [Adjusted Odds Ratio (AOR): 2.00, 95% Confidence Interval (95%CI): 1.4 - 2.8] and for patients with cirrhosis but who did not have documented symptoms [AOR: 1.26, 95%CI: 0.9-1.7]. Being unmarried increased the odds of late-stage cancer, [AOR 1.35, 95%CI: 1.0,1.7]. The hazard of death was highest among cirrhotic patients without symptoms, [Hazard Ratio (HR) 2.03, 95%CI: 1.1,3.9].

Conclusions: The newly identified group of NAFLD-HCC patients without cirrhosis are at a higher risk of late-stage diagnosis, and cirrhotic patients without symptoms are at the highest risk of death. Real world data like cancer registry and claims data are important to inform populations needing biomarker research, especially for NAFLD-HCC, for which a non-invasive diagnostic test does not exist.

Derivation of anthropometric-based equations to predict lean body mass composition of cancer patients



A.B. Carey, A.S. Felix, J. Huling, J. Odei, C. Coss, M.M. Donneyong. The Ohio State University, Columbus, OH

Purpose: Lean body mass (LBM) of cancer patients is a predictor of chemotherapy-related adverse events. However, there are currently no measures of LBM that can easily be implemented in routine oncologic settings. Therefore, we aimed to derive, test, and validate anthropometric equations to estimate LBM of cancer patients.

Methods: Eight cycles of the National Health and Nutrition Examination Survey (NHANES) 1999-2014 were analyzed. A population of participants with self-reported physician diagnosed-cancer and recorded DXA measures was randomly split into training (75%) and testing (25%) sets. The training data was utilized to predict DXA measured LBM using height, weight, and four circumference measures (arm, waist, thigh, and calf). The developed models were utilized to estimate the LBM of the test sample. Differences between DXA measured and predicted LBM were assessed. Last, correlations of predicted LBM with albumin, creatinine, c-reactive protein and mortality were calculated with the validation set. Models were stratified by sex and/or race.

Results: Models were derived and tested from a sample of 1591 adult participants with self-reported cancer diagnosis and recorded DXA measurements. The model accurately predicted the LBM composition ($R^2 = 0.87$). Models predicted LBM better among males ($R^2 = 0.92$) than females ($R^2 = 0.88$). Predicted LBM (C-statistic: 0.59) discriminated death to similar magnitudes as body mass index (C-statistic: 0.56) and body surface area (C-statistic: 0.55).