(TBI). We conducted a retrospective review of data from the OptumLabs® Data Warehouse, a de-identified administrative claims database for commercially insured and Medicare Advantage (MA) enrollees, representing a diverse mixture of ages, ethnicities, and geographical regions across the U.S. Our cohort included adults 65 and older enrolled in MA between 1998 and 2017. Subjects were required to have dementia (by a diagnosis and/or prescription for a dementia drug (memantine or ChEI)) and at least one claim for ChEI during 12 months of follow-up. Subjects had to be enrolled in MA 6 months prior to the dementia index date. We defined concomitant ACh/ChEI use as an overlap of 30 days or more. Nearly one-third (29%) were concomitantly prescribed ACh and ChEI. Half (51%) of concomitant users were prescribed ChEI first, 46% were prescribed ACh first, and 3% received prescriptions on the same day. Results from multiple logistic regression analyses show that older adults with dementia who had concomitant ACh/ChEI use were 18%, 16%, and 25% more likely to experience a fall, fracture, or TBI, respectively, than those taking ChEI alone.

HIGH OCCURRENCE OF DEMENTIA IN OLDER ADULTS RETURNING TO COMMUNITY FROM PRISON

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Very little is known about Alzheimer's Disease and related dementias (AD/ADRD) and diseases (e.g., Parkinson's/PD) in older adults returning to community from prison ("older reentry adults"). We utilized a national sample of older veterans to conduct the first study documenting the occurrence (prevalence/incidence) of AD/ADRD and related diseases in older reentry adults. We examined 28,235 reentry veterans who were aged 50 years and older at their most recent release date and Medicare beneficiaries, 2008 through December 31, 2017. AD/ADRD and related diseases were identified by ICD-9/10 codes in the electronic health record from Medicare and inpatient/outpatient Veterans Health Administration data. We examined distributions of AD/ADRD and related diseases across 4 age categories (sample %): 50-64 (55%), 65-74 (37%), 75-84 (7%), and 85+ (0.7%). Of the 28,235 veterans 50 years and older, 17% (n=4,725) had dementia (defined by AD/ADRD based on NIA criteria) or mild cognitive impairment (MCI) and 3% (n=794) had PD. Of those with dementia/MCI, 18% had AD and 26% MCI. Nearly 40% of dementia diagnoses occurred prior to/on most recent release date, and 40% of PD diagnoses occurred prior to/on most recent release date. Differences were significant across age groups (P<.001), with very high rates of diagnoses across all age groups, as well as indicative of high occurrence of early onset dementia and "accelerated aging" [50-64, 14%; 65-74, 18%; 75-84, 33%; and 85+, 53%]. This study is a first step in filling a major research gap by describing AD/ADRD, MCI and related diseases in reentry adults.

SESSION 2921 (PAPER)

DEMENTIA II

APPLICATIONS OF STOCHASTIC PROCESS MODELS TO CONSTRUCTING PREDICTIVE MODELS OF ALZHEIMER'S DISEASE

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Large-scale population-based data collecting repeated measures of biomarkers, follow-up data on events (incidence of diseases and mortality), and extensive genetic data provide excellent opportunities for applying statistical models for joint analyses of longitudinal dynamics of biomarkers and time-to-event outcomes that allow investigating dynamics of biomarkers and other relevant factors (including genetic) in relation to risks of diseases and death and how this may propagate to the future. Here we applied one such model, the stochastic process model (SPM), to data on longitudinal trajectories of different variables (comorbidity index, body mass index, cognitive scores), other relevant covariates (including genetic factors such as APOE polymorphisms and polygenic scores, PGS), and data on onset of Alzheimer's disease (AD) in the Health and Retirement Study. We observed that different aging-related characteristics estimated from trajectories of respective variables in SPM are strongly associated with risks of onset of AD and found that these associations differ by sex, APOE status (carriers vs. non-carriers of APOE e4) and by PGS groups. The approach allows modeling and estimating time trends (e.g., by birth cohorts) in relevant dynamic characteristics in relation to the disease onset. These results provide building blocks for constructing the models for forecasting future trends and burden of AD that take into account dynamic relationships between individual trajectories of relevant repeatedly measured characteristics and the risk of the disease. Such models also provide the analytic framework for understanding AD in the context of aging and for finding genetic underpinnings of such links between AD and aging.

CHEMOTHERAPY AND ANESTHESIA IN COLORECTAL CANCER SURVIVORS AND THE RISK OF ALZHEIMER'S DISEASE

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Exposures common in cancer patients—chemotherapy, surgical injury and/or anesthesia, alone or in combination with predisposing factors—have been suggested as potential risk factors for Alzheimer's disease (AD). We explored the relationship between chemotherapy and cumulative anesthesia exposure, and development of AD in colorectal cancer survivors. We conducted a retrospective cohort study of individuals age 65 and older diagnosed with colorectal cancer between 1998 and 2013, drawing on SEER-Medicare data and employing a proportional hazards model. We found that