Potentially Inappropriate Medication Use and Incident Dementia in Privately-Insured Older Adults

Ashley Martinez, PharmD [1] • Gregory Jicha, MD, PhD [2] • Daniela Moga, MD, PhD [3]

[1]Pharmaceutical Sciences, University of Kentucky • [2]Neurology, University of Kentucky • [3]Pharmacy Practice and Science; Epidemiology, University of Kentucky

Abstracts will be considered for both poster and platform presentations

Cognitive/Behavioral disorders

Background: A growing body of literature supports the hypothesis that potentially inappropriate medication (PIM) use in older adults may be associated development of dementia, highlighting a critical concern among clinicians and researchers. However, the relationship between PIM-related drug and disease interactions (PI-DDI and PI-DzI, respectively) and cognitive function remains poorly characterized. Large administrative claims databases can provide an opportunity to study these issues.

Methods: Using data from Truven Health Marketscan Research Database® (2009-2016), we conducted a retrospective cohort study to investigate the association between PIM use, PI-DDI, and PI-DzI (defined using 2015 Beers' Criteria) and incident dementia. After a three year run-in period of continuous eligibility to identify dementia-free subjects aged ≥65 years, subjects were followed until disenrollment or incident dementia. Incident dementia was identified either by diagnosis or receipt of an anti-dementia prescription. We used Cox proportional hazard regressions (generating hazard ratios [HR] and 95% confidence intervals [CI]) to measure the association between PIM use and PI-DDI/DzI, and incident dementia, adjusted for comorbidities and demographics.

Results: 2,568,479 subjects were included (54.4% female, mean age 74.0), of which 47.4% used any PIM. The most common PIMs were CNS-active medications, followed by gastrointestinal medications (primarily proton pump inhibitors). After a median follow-up of 2.1 years, those using any PIM, PI-DDI, or PI-DzI were more likely to develop dementia than those without PIMs (HR [95% CI] 1.10 [1.08-1.11], 1.34 [1.31-1.37], and 1.28 [1.26-1.30] respectively). An interaction term between PI-DDI and PIM use was statistically significant (HR [95% CI] 1.60 [1.41-1.80]).

Conclusions: Our study suggests that individuals who use PIMs develop dementia at a higher rate than those without PIM use, and that PI-DDIs magnify that association. Further research should investigate the underlying biological plausibility of this association, especially for medications that do not act on the central nervous system. Understanding the complexities of PIM use may aid in designing interventions to lessen cognitive burden and reduce PIM use in the aging population at risk for dementias.