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Utilizing population-based clinical and administrative data to explore the relevance of frailty to cholinesterase inhibitor use and discontinuation at nursing home transition.

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Introduction

Cholinesterase inhibitors (ChEIs) are medications used to treat cognitive symptoms associated with Alzheimer's disease. Previous studies examining the determinants of continued use or withdrawal of ChEIs during the transition into a nursing home have lacked detailed clinical information needed to understand the range of factors associated with pharmacotherapeutic decision-making.

Objectives and Approach

Population-based clinical and administrative health databases were linked to examine patterns of ChEI use among 47,851 adults (aged 66+) with dementia newly admitted to nursing homes in Ontario between April 2011-March 2015. We examined whether resident frailty, among other factors, was associated with ChEI discontinuation in the following year. Frailty was calculated using a validated 72-item index derived from the Resident Assessment Instrument (RAI-MDS 2.0). Discontinuation was defined as a 30-day period when no dispensations occurred and no supply of ChEI was available. Subdistribution hazard models estimated the association between resident characteristics and discontinuation, accounting for competing risk of death.

Results

Over one-third (36.7%) of residents were receiving a ChEI at admission and this proportion was lower among those defined as frail (33.6%) vs. non-frail (40.7%) at admission. Among those on a ChEI at admission, 82.3% continued use and 17.7% discontinued during the following year. After accounting for resident characteristics, ChEI type and previous use, the incidence of discontinuation was 15% higher in frail residents vs. non-frail residents (hazard ratio (HR)= 1.15, 95% confidence interval (CI) [1.01,1.30]). Residents with severe aggressive behaviours (HR=1.82, 95% CI [1.60, 2.07]), and higher levels of cognitive impairment (HR=1.29, 95% CI [1.10, 1.51]) were more likely to discontinue. Residents aged 85+ (HR=0.69, 95% CI [0.61, 0.77]) and those who were widowed (HR=0.84, 95% CI [0.77, 0.91]) were less likely to discontinue.

Conclusion/Implications

Most residents who entered on a ChEI continued treatment during follow-up. The availability of linked clinical and administrative data allowed for a novel exploration of predictors of ChEI discontinuation. Frailty, severity of cognitive impairment and aggressive behaviours were associated with ChEI discontinuation; whereas selected sociodemographic factors predicted continued use.

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