INTRODUCTION

- Potentially inappropriate medication (PIM) use is a major patient safety concern for the elderly.
- Using explicit criteria, previous studies found that 23.5% and 21.3% of the U.S. community-dwelling elderly used at least one PIM in 1987 and 1996, respectively.
- The Beers criteria, Zhan criteria, and Health Plan Employer Data and Information Set (HEDIS) quality measure have been widely used for evaluation of health care quality and medication safety in older population.1,6

OBJECTIVES

- To determine the prevalence of PIM use among older Americans in 2007, compare the prevalence to that in 1996, and identify risk factors for PIM use.

METHODS

Study Design

- This is a retrospective cohort study.
- The study subjects are those community-based respondents aged 65 or older to 2007 Medical Expenditure Panel Survey, a nationally representative survey of the U.S. community-dwelling population.

Data Sources

- The MEPS is a nationally representative survey of the U.S. civilian noninstitutionalized population.
- The MEPS provides information on respondents’ demographic and socioeconomic characteristics, health status, access to care, health insurance, and health utilization including prescription drug use.
- The 2007 Prescribed Medicines database provides information on household reported prescription drug events.
- The database was used to identify the PIM utilization among older patients.
- We merged the prescribed medicines and full-year consolidated databases to create a person-level dataset for the final analysis. The study subjects were those community-dwelling adults aged 65 or older.

Analysis

- The PIMs were identified according to the Zhan criteria. Prevalence rates of the 33 PIMs utilization in terms of medications and respondents’ characteristics were determined.
- Risk factors for PIM use were examined by logistic regression analysis after controlling for confounding factors.

RESULTS

- The prevalence of the 33 PIMs use among the older adults in the USA decreased from 1996 to 2007 in terms of the Zhan criteria.
- In 2007, 13.8% (95% confidence interval [CI], 12.5%–15.2%) of the elderly or 5.4 million older adults received at least 1 of the 33 PIMs; and 1.5% (95% CI, 1.1%–2.0%) used at least 1 of the 11 PIMs that should always be avoided (Table 2).
- The most commonly misused medications were propoxyphene, amitriptyline, antihistamines, diazepam, muscle relaxants, gastrointestinal antispasmodics, and indomethacin.
- The maximum number of PIMs received by an individual in 2007 was three.
- High-risk older patients for PIM use included women, people in the South of the U.S., persons receiving more prescriptions, and those who rated their health status as fair and poor.

DISCUSSION

Conclusions:

- The overall PIM use in older Americans decreased but was still prevalent in some subgroups and for some drugs.
- More effective interventions to further improve medication use in older patients, specifically in those priority subpopulations with high risk factors, are required.

Limitations:

- For the purpose of prevalence comparison between 1996 and 2007, we used the Zhan criteria and did not use the updated Beers or STOPP criteria which include more and newer potentially inappropriate medications. However, because the Zhan criteria are somewhat obsolete, the decline in the 33 PIMs use is not adequate to conclude that the overall PIM use in the USA has improved greatly.
- We cannot identify whether the decline of PIM use in older population is parallel to that in non-elderly population. Physicians could just be retiring the old drugs in both the older and non-elderly populations.

Implication:

- Further research may be focused on the possible decline in the utilization of these drugs among the non-elderly population, and compare it to the study findings in the older population.

REFERENCES


DISCLOSURE

Conflicts of Interest: The authors have no conflicts of interest concerning this research. We did not receive any consulting fees, grants, honoraria, patents, royalties, stocks, or other financial or material gain that may involve the subject matter.

This study was published in Age and Ageing (reference 7) after we submitted to the conference.

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