Gastrointestinal antispasmodics and anticholinergics have been used in older adult patients for treatment of irritable bowel syndrome (IBS) despite lack of study evidence in this population. Older adults are at a greater risk of incurring adverse effects (AEs) from these drugs due to physiologic changes in aging. Notable AEs that can occur include blurred vision, orthostatic hypotension, sedation, urinary retention, constipation, and confusion or delirium. Due to these AEs, GI antispasmodics and anticholinergics are considered high risk when used in older adults. However, no studies have been completed to determine the risk associated with the use of these drugs. This issue of CLIPS briefly summarizes an article that reviewed a case-control study of patients over 65 years of age in a California healthcare system to determine the risk of prescribing a GI antispasmodic or anticholinergic drug to an older adult patient. If you need further information, please contact the Center for Healthcare Innovation and Patient Outcomes Research (CHIPOR) at (205) 726-2659.


Background
- Several organizations, including CMS (Centers for Medicare and Medicaid Services) and AGS (American Geriatrics Society), have suggested that the use of GI antispasmodic and anticholinergic drugs should be limited in older adult patients.
- In addition the Healthcare Effectiveness and Data Information Set (HEDIS) also recommended that these agents be avoided in the elderly. These agents are classified as "always avoid" in elderly adults.
- Despite the efforts of these organizations, the drugs continue to be prescribed to older adults in healthcare systems across the United States.

Study Design
- Retrospective case-control study using electronic records of patients from Kaiser Permanente Southern and Northern California regions.
- Cases were identified as older adult patients who had been hospitalized, visited an emergency department, or had been to an urgent care facility for an injury. Adult patients who had not been injured during the index period were the controls.
- Patients were separated into case and control without prior knowledge of the patients' medication history.
- The records were searched for patients who suffered an injury for which their risk may have been increased by a GI antispasmodic or anticholinergic drug.
- Drugs included in the study were identified from the Healthcare Effectiveness and Data Information Set Drug-Disease Interactions in the Elderly (HEDIS-DDE) measure for older adults with dementia.
- Patients were then assessed as nonusers, past users (drug stopped >60 days before the index date), and current users (used the drug at time of the index date).
- Current users were subdivided into short-term (≤60 days of use before the index date) and long term (>60 days of use before the index date) users.
- The collected data was then analyzed using a chi-square test for rate of injury, t-test for difference between means, and conditional logical regression to determine odds ratios with a $P\leq0.5$ considered significant.

Patient Population
- The study population included patients who were 65 years old or older between January of 2009 and December 2010 with drug benefit for at least one year prior to the index date.

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Patient Population (continued)

- HEDIS-DDE drugs identified as being GI antispasmodics or anticholinergics included: belladonna alkaloids with phenobarbital; diphenoxylate with atropine; clidinium with chlordiazepoxide; propantheline; dicyclomine; and hyoscyamine.
- Patients were excluded from the study if they were living in a long-term care facility, nursing home, hospice care, or palliative care before the index date.
- Covariates for matching case to control were measured for 1 year prior to the index date and included high risk medication histories, disease states (using ICD-9), comorbidity (using Diagnostic Cost Groups), previous injury (clinic/hospital visits), and history of falls.
  - Medications used as covariates included antidepressants, antipsychotics, narcotics, benzodiazepines, anticonvulsants, bisphosphonates, inhaled or systemic corticosteroids, and several other classes that either increase risk of injury or treat diseases that could increase the risk of injury.

Results

- A total of 260,010 patients were identified in the study, and 54,152 had an injury during the index time.
  - The most common injuries were fractures (29%), falls (25%), lacerations (19%), contusions (15%), and injury not otherwise specified and complications from injury (6%).
  - The most commonly used agent was dicyclomine.
- The average age of the case and the control group was 75 years and each group included about 61% women.
- Current users had an increased risk of injury calculated as 1.16 (95% CI=1.01-1.34, \( P=0.03 \)) times greater than nonusers.
- Past use was not a significant risk factor when compared to nonusers, with an odds ratio of 1.04 (95% CI=0.97-1.11, \( P=0.24 \)).
- Short term users showed an increased risk of injury, with an odds ratio of 1.31 (95% CI=1.01-1.70, \( P=0.04 \)), that was greater than long term users [1.12 (95% CI=0.95-1.32, \( P=0.17 \)], but not significantly different.

Limitations

- Due to the observational design of the study, several limitations were identified:
  - Injuries that did not warrant a hospital visit could not be assessed with the available data.
  - Pharmacy records of medications sold were used to determine use of medications, but actual use could not be determined (daily use, as needed, adherence, etc.).
  - Functional status, cognition, and environmental conditions may have confounded the results since they were not examined as covariates.
  - Indications, pharmacokinetic variability, doses, differences between medications, and patients' body mass index were not analyzed in the study.

Summary

- Trials involving GI antispasmodics and anticholinergics have not shown significant alleviation of IBS symptoms in older adults.
- GI antispasmodics and anticholinergics should be added to the HEDIS-DDE measure for older adults with a history of falls.
- This study's results support policies which advise against use of GI antispasmodics and anticholinergics in older adult patients.

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