Background

Adverse events (AE) are injuries that may be the result of medical management. Adverse events injuries resulting from medications, procedures, diagnostic errors, therapeutic errors, nosocomial infections, pressure ulcers, and falls. Previous prospective studies have examined adverse events in the post-discharged hospitalized patients; however, few have included significant percentages of rural patients in a community hospital setting and older persons. For older persons, criteria have been developed both through expert panel and empirical evidence for potentially inappropriate medications. Projects on adverse events involving these medication use are rare. This prospective study’s research aims as follows:

1. Determine the characteristics of the elderly age groups, 65-74 and 75 and older who have experienced an AE.
2. Determine the frequency of prescribed Beers and STOPP medications within those age groups who have experienced an adverse drug event (ADE).
3. Determine how often the implicated drug for the ADE met the Beer’s and STOPP criteria.

Methods

Adult patients in this prospective cohort study were selected by nurse interviewers from hospital discharges over 12 months. The Tallahassee Memorial Hospital (TMH) is a regional community hospital servicing both urban and rural patients. Exclusion criteria included a discharge to a skilled nursing facility. Study participants were screened by two study nurses using a structured telephone interview approximately 3-weeks after discharge from the hospital. Possible AEs were sent to two physician reviewers based on three explicit criteria: (1) new or exacerbated symptoms, (2) unplanned health services utilization; and (3) abnormal laboratory test. AEs were determined by performing an independent implicit health record review (both inpatient and outpatient). Physicians reviewed the records provided to determine AEs independently and which AEs resulted from drugs (ADEs) versus other causes. Disagreements were resolved by consensus. Subsequently, it was determined which drugs were STOPP Beers list drugs by medical record review in 57 patients 65 and older who experienced an AE.

Results

Characteristics of elderly individuals to Beers and/or STOPP medications in the elderly age groups (n=57)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Beers Meds</th>
<th>STOPP Meds</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-74</td>
<td>10.76</td>
<td>11.03</td>
</tr>
<tr>
<td>75+</td>
<td>11.02</td>
<td>11.33</td>
</tr>
<tr>
<td>Rural</td>
<td>10.98</td>
<td>11.21</td>
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<tr>
<td>White</td>
<td>10.79</td>
<td>11.10</td>
</tr>
<tr>
<td>Female</td>
<td>10.42</td>
<td>10.78</td>
</tr>
<tr>
<td>Male</td>
<td>10.10</td>
<td>10.45</td>
</tr>
<tr>
<td>Urban</td>
<td>10.52</td>
<td>10.83</td>
</tr>
<tr>
<td>Non-Indiv.</td>
<td>10.20</td>
<td>10.50</td>
</tr>
</tbody>
</table>

FREQUENCY OF BEERS AND STOPP MEDICATION IN AE AGE 65-74 (n=26)

Conclusions

1. Of the age groups, 65-74 and 75 and older who have experienced an AE:
   • Aside from nutrients, statin medications had the highest number of occurrences.
   • Mean number of medications was 10 to 11 medications.
   • Median number of medications was 10 medications.
   • Rural patients were on slightly more medications than urban patients.
   • On average, patients were on at least 1 STOPP and/or Beers.
   • Females tended to be on more Beers medications than males.

2. The relative frequencies of prescribed Beers and STOPP medications within elderly age groups who have experienced an ADE were:
   • Beers: NSAIDs had the highest number of occurrences.
   • STOPP: PPI had the highest number of occurrences.
   • 75+ Age Group
     • Beers: Saliylates, vasodilators, and anti-infective had the highest number of occurrences.
     • STOPP: PPI had the highest number of occurrences.

3. The frequency of the implicated drug for the ADE that met the Beer’s and STOPP criteria are as follows:

References