Implementation of a Best Practice Advisory to Reduce Postoperative Delirium Rates in Elderly Surgical Patients

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**PURPOSE**
- To reduce the administration of medications that increase the risk of delirium, by implementing a “Best Practice Advisory” in the electronic medical record.
- Elderly patients (> 65 years) are at the highest risk for postoperative delirium. Postoperative delirium is associated with poor outcomes and increased cost. ²
- Anesthesia providers should use anesthetic techniques and medications to optimize patients’ recovery while reducing the risk of postoperative delirium.
- Provider education and clear identification of this high-risk population could reduce postoperative delirium rates.

**BACKGROUND & RESEARCH**
- A growing proportion of U.S. elderly patients use a disproportionate amount of healthcare resources. They consume more resources in terms of medications, hospital admissions, and surgical interventions. ²
- Elderly patients are at the highest risk for postoperative delirium, with a prevalence up to 50%. ²
- Postoperative delirium is associated with prolonged recovery, longer hospital admissions, worse outcomes, reduced functional recovery, and cognitive decline. ²
- The American Geriatric Society (AGS) Beers Criteria identifies medications that should be avoided in elderly (age 65 and older) patients. ¹, ³

**METHODS**
- Based on importance and value of reducing postoperative delirium, the Best Practice Committee at the site hospital approved adoption of a Best Practice Advisory in the electronic medical record.
- Education resources were provided via pamphlet and email to anesthesia staff. The advisory was integrated into the electronic medical record and became active after staff education was provided.
- Data was collected to evaluate the administration of high-risk medications before and after the advisory was active. Results were collected from fifty patient charts pre-intervention and fifty patient charts post-intervention.
- Focus was on three high risk medications most frequently given (based on the Beer’s Criteria) and dexmedetomidine use was encouraged.
- A Chi-square test was used to determine the statistical significance of the results.

**BEST PRACTICE ADVISORY**

**RESULTS**

<table>
<thead>
<tr>
<th></th>
<th>Preintervention administrations (n = 50)</th>
<th>Postintervention administrations (n = 50)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midazolam</td>
<td>26</td>
<td>23</td>
<td>0.616</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>45</td>
<td>14</td>
<td>0.004</td>
</tr>
<tr>
<td>Dexmedetomidine</td>
<td>10</td>
<td>9</td>
<td>0.871</td>
</tr>
</tbody>
</table>

- There was a statistically significant reduction of administration of dexamethasone, a corticosteroid, commonly given to prevent post operative nausea and vomiting and reduce swelling.
- Education about this commonly given drug and a reinforcing reminder via the best practice advisory successfully led to a practice change.

**CONCLUSIONS**
- Utilization of a best practice advisory led to the reduction of the use of one high-risk medication (dexamethasone).
- Provider education and the implementation of best practice advisories in the electronic medical record can improve patient outcomes in terms of reducing factors that contribute to postoperative delirium.
- Future recommendations include continued periodic education, adding a link in the advisory to the Beers Criteria and implementation of an active, “pop-up” type of advisory.

References