Background and Research Question

- Prescribing of opioid analgesics has risen dramatically over the past decade, often despite the lack of an appropriate indication.
- Opioids are not recommended by the American Academy of Neurology and American College of Emergency Physicians guidelines as first-line therapy for acute headache (vs. acetaminophen or antiemetics).
- We sought to assess trends in opioid prescribing for acute headache in U.S. emergency department (EDs).

Methods

- Review of the National Hospital Ambulatory Medical Care Survey (NHAMCS), 2001-10.
- Visits for headache/head pain were identified.
- Therapies used to treat headache were identified and categorized based on medication class (antiemetics, opioids, triptans, etc.).
- Trends in prescribing for 5 common opioids were further explored.
- The proportion of visits involving each medication was tabulated and trends analyzed using survey-weighted logistic regression.
- Divided into medications given in the ED vs. prescribed at discharge for 2005-10.

Trends in Opioid vs. Non-Opioid Prescribing

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>2001 Use (% Visits)</th>
<th>2010 Use (% Visits)</th>
<th>Percent Change</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>10.1%</td>
<td>9.0%</td>
<td>-10.8%</td>
<td>0.827</td>
</tr>
<tr>
<td>Antiemetics</td>
<td>23.2%</td>
<td>21.5%</td>
<td>-7.4%</td>
<td>0.019</td>
</tr>
<tr>
<td>Butalbital</td>
<td>1.9%</td>
<td>2.4%</td>
<td>23.3%</td>
<td>0.829</td>
</tr>
<tr>
<td>IV fluids</td>
<td>20.3%</td>
<td>33.5%</td>
<td>64.7%</td>
<td>0.001</td>
</tr>
<tr>
<td>NSAIDS</td>
<td>25.8%</td>
<td>30.0%</td>
<td>16.2%</td>
<td>0.067</td>
</tr>
<tr>
<td>Opioids</td>
<td>20.8%</td>
<td>34.0%</td>
<td>64.9%</td>
<td>0.001</td>
</tr>
<tr>
<td>Triptans</td>
<td>2.0%</td>
<td>1.4%</td>
<td>-29.2%</td>
<td>0.123</td>
</tr>
</tbody>
</table>

Results

- The estimated number of visits for acute headache increased from 5.5 million in 2001 to 7.7 million in 2010.
- Opioid analgesics had the largest increase in use among headache therapies (64.9%, p=0.001).
- Hydromorphone was the opioid with the greatest increase in use (454.1%, p=0.001).
- Oxycodone increased in discharge prescriptions (2.5% to 3.5%, 41.2%, p=0.001) from 2005-10.

Limitations/Discussion

- We could not account for multiple medications given during the same visit, order of administration, or separate medications given in the ED vs. at discharge for 2001-04.
- Future initiatives should focus on promoting guideline-concordant treatment of headache in the ED and to promote the rational use of opioid analgesics.

Conclusions

- Despite guideline recommendations, there was increased utilization of opioid analgesics for headache in U.S. EDs, whereas antiemetic use decreased despite endorsement.
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