Retrospective Evaluation of Hydromorphone Prescribing Patterns in the Emergency Department at a Community Hospital

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Background

- Hydromorphone misuse and illicit use have become a growing public health challenge globally.1
- In recent years, there has been a significant increase in the emergency department (ED) administration of hydromorphone relative to other opioids.
- Although hydromorphone is an effective analgesic, its use has been commonly implicated in adverse drug events, medication errors, and over usage.2
- Since hydromorphone adverse events are dose-dependent, multimodal opioid-sparing strategies that reduce its use are desirable.3

Objective

Homestead Hospital’s ED is the only one within 18 miles of its location, treating more than 90,000 patients each year. As a high volume of patients present with conditions that involve pain management, we aim to evaluate the ED’s current usage of hydromorphone.

Methods

Study Design:
A retrospective, single center, descriptive study was conducted reviewing electronic health records of patients who received hydromorphone in the ED.

Sample:
100 subjects

Inclusion Criteria:
Patients 18 years old or older treated with hydromorphone in the ED from January 1 to June 30, 2019.

Exclusion Criteria:
- Patients less than 18 years old
- Hospice and cancer patients
- Patients hospitalized outside the aforementioned date range

Procedure:
- A computerized report was generated identifying patients who received hydromorphone in the ED from January 1 to June 30, 2019.
- One hundred patients were then randomly selected for inclusion in the study.
- Data pertinent to the following were extracted through a retrospective electronic chart review: patient identifier, age, gender, dose of hydromorphone, route of administration, indication/chief complaint, naloxone use, adverse drug reactions (ADRs), and additional analgesics, if any.

Statistical Analysis:
Descriptive statistics including frequencies, percentages, and measures of central tendency were generated.

Results

Table 1. Patient Demographics *(N=100)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>61 (61%)</td>
</tr>
<tr>
<td>Male</td>
<td>39 (39%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Median [IQR]</td>
<td>46 [34.5 – 60]</td>
</tr>
</tbody>
</table>

Table 2. Dosage and Administration Route of Hydromorphone *(N=100)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose (mg)</td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td>2 (2%)</td>
</tr>
<tr>
<td>0.5</td>
<td>42 (42%)</td>
</tr>
<tr>
<td>1</td>
<td>55 (55%)</td>
</tr>
<tr>
<td>2</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Administration Route</td>
<td></td>
</tr>
<tr>
<td>Intravenous</td>
<td>92 (92%)</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>8 (8%)</td>
</tr>
</tbody>
</table>

Table 1. Patient Demographics *(N=100)

Table 2. Dosage and Administration Route of Hydromorphone *(N=100)

Figure 1. Hydromorphone Usage by Indication

Discussion

Based on the prescription patterns identified, a protocol addressing alternatives to hydromorphone based on indications for use will be written and put into practice thereafter. Data collection will be necessary after implementation of such protocol to determine its impact on the prescribing patterns of hydromorphone.

References


Disclosures
Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
- Eduardo Martinez: Nothing to disclose
- Winifred Pardo: Nothing to disclose
- Ada Jalice: Nothing to disclose
- James Adefisoye: Nothing to disclose