Risk Factors Associated with Opioid Analgesic Prescribing in a Cross Section of 19 U.S. Emergency Departments

Prescribing Opioids Safely in the Emergency Department (POSED) Study Group

Introduction

- ED Opioid prescribing has escalated in the past decade
- Little is known about the recipients, quantities prescribed or diagnoses associated with prescribing
- Emergency physicians (EPs) care for patients with a variety of pain etiologies, frequently without the benefit of an established patient-doctor relationship
- EPs are among the top prescribers of opioid analgesics in patients < 40
- Previous estimates are based on big data (e.g. NHACMS)
- More information is needed on rates of ED opioid pain reliever (OPR) prescribing and types of medications prescribed

Objectives

1. Describe and catalog the demographics and general clinical characteristics of a sample of ED patients receiving OPR at discharge
2. Identify the common diagnoses associated with ED OPR prescribing
3. Characterize the quantity and dose of OPR prescribed by EPs

Methods

- This is a retrospective cohort study of all patients evaluated in 19 hospital EDs over 1 week in October 15-21, 2012.
- Hospitals varied geographically but were predominantly academic urban EDs:
  - University of Colorado, Denver
  - University of Pennsylvania
  - Baystate Medical Center
  - Yale University
  - UMC South and Nevada
  - Kaiser South Sacramento
  - Cooper Medical School at Rowan
  - Denver Health Medical Center
  - New York University
  - Hartford Hospital
  - Beth Israel Deaconess
  - Northwestern Memorial
  - Kaiser San Jose
  - Tufts Medical Center
  - Boston Medical Center
  - Rhode Island Hospital
  - Case Western Reserve
  - Emory/Grady
  - Cleveland Clinic
  - Orlando Health
- Electronic reports listing all patients aged 18-90 treated during the study week were generated and visits in which the patient was discharged with an OPR (excluding tramadol) were manually abstracted for detailed analysis.
- A standardized chart abstraction: chief complaint, demographics, allergy to non narcotic, discharge diagnosis, pain scores, and opioid prescription details
- Descriptive statistics were generated
- Institutional Review Board approval was obtained at each site

Results

Table 1: Most common chief complaints and diagnosis in patients discharged with an OPR.

<table>
<thead>
<tr>
<th>Chief Complaints (%)</th>
<th>Most Common Diagnosis (%)</th>
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<tbody>
<tr>
<td>Headache (10.1)</td>
<td>Headache (3.0)</td>
</tr>
<tr>
<td>Back Pain (10.1)</td>
<td>Back Pain (10.2)</td>
</tr>
<tr>
<td>Abdominal Pain (12.5)</td>
<td>Abdominal Pain (10.1)</td>
</tr>
<tr>
<td>Traumatic Extremity Pain (14.2)</td>
<td>Traumatic Extremity Pain (9.0)</td>
</tr>
<tr>
<td>Other extremity pain (5.8)</td>
<td>Other extremity pain (5.8)</td>
</tr>
</tbody>
</table>

Discussion

- 27,516 patients eligible (approximately 1.4 million annual adult ED visits)
- 19,387 (70.4%) were discharged 17.1% (3,307 patients) of whom received an OPR prescription.
- ED patients discharged with an OPR:
  - Median age was 40 (IQR 29-51) years
  - 1,713 (51.8%) were female
  - 2271 (68.8%) presented on a weekday
  - Mean Emergency Severity Index score was 3.3 (SD 0.8).
  - Mean initial pain score was 7.7 (SD 2.4).
  - Allergies to non-opioid analgesics reported by 271 (8.2%).
- Most common opioids prescribed:
  - OxyContin (n=1,714, 51.8%)
  - Hydrocodone (n=1,346, 40.7%)
  - Codeine (n=168, 5.1%).
- >99% (n=3,266) of opioids prescribed were immediate release, 90.2% (n=2,968) were combination preparations (e.g. with acetaminophen).
- Mean and median number of pills was 17.1 (SD 11.8) and 15 (IQR=12-20) respectively.
- Attending physicians were more likely to prescribe oxycodone over hydrocodone compared to NP/PA (OR 1.3 (95% CI 1.1-1.5), p<0.001)

Conclusion

- This visit level data complements studies that describe prescribing but rely on extrapolation.
- ED physicians prescribe limited number of pills and immediate release combinations (Menchine et al).
- Regional and racial variations in OPR prescribing are consistent with other studies (Pletcher et al., Paulozzi et al.)
- OPR are often given, contrary to ACEP guidelines on clinical practice, for back pain.

- Limitations:
  - This study was a snapshot over one week which may not reflect variations over time.
  - Mostly urban academic centers, which may not reflect community hospitals.
  - Retrospective chart review can not infer reasons for or appropriateness of prescribing.
  - Manual data abstraction not verified.
  - Unable to reliably compare patients discharged with OPR vs. without OPR.

- EDs prescribe OPRs to 17% of discharged patients, but with small pill counts and predominantly immediate release formulations.