Association of Emergency Department Opioid Initiation With Recurrent Opioid Use

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Study objective: Acute pain complaints are commonly treated in the emergency department (ED). Short courses of opioids are presumed to be safe for acute pain; however, the risk of recurrent opioid use after receipt of an ED opioid prescription is unknown. We describe the risk of recurrent opioid use in patients receiving an opioid prescription from the ED for an acute painful condition.

Methods: This is a retrospective cohort study of all patients discharged from an urban academic ED with an acute painful condition during a 5-month period. Clinical information was linked to data from Colorado's prescription drug monitoring program. We compared opioid-naive patients (no opioid prescription during the year before the visit) who filled an opioid prescription or received a prescription but did not fill it to those who did not receive a prescription. The primary outcome was the rate of recurrent opioid use, defined as filling an opioid prescription within 60 days before or after the first anniversary of the ED visit.

Results: Four thousand eight hundred one patients were treated for an acute painful condition; of these, 52% were opioid naive and 48% received an opioid prescription. Among all opioid-naive patients, 775 (31%) received and filled an opioid prescription, and 299 (12%) went on to recurrent use. For opioid-naive patients who filled a prescription compared with those who did not receive a prescription, the adjusted odds ratio for recurrent use was 1.8 (95% confidence interval 1.3 to 2.3). For opioid-naive patients who received a prescription but did not fill it compared with those who did not receive a prescription, the adjusted odds ratio for recurrent use was 0.8 (95% confidence interval 0.5 to 1.3).

Conclusion: Opioid-naive ED patients prescribed opioids for acute pain are at increased risk for additional opioid use at 1 year. [Ann Emerg Med. 2015;65:493-499.]

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INTRODUCTION

Unintentional opioid overdoses have surpassed motor vehicle crashes as the leading cause of injury death in the United States. The majority of these deaths are from prescription opioids. Moreover, as the number of opioid prescriptions has increased, chronic opioid use and opioid dependence have become major public health issues in the United States.[1-4] Because opioids are frequently prescribed to patients discharged from the ED, it is important to understand the relationship between ED opioid prescribing and risk of progressing to recurrent opioid use. Ultimately, the ED may be an important site of intervention.[1,5]

The risk of recurrent opioid use after a single prescription has been assumed to be minimal[6,7]; however, a recent study reported that patients discharged from ambulatory surgery with a first-time opioid prescription are 44% more likely to fill additional opioid prescriptions 1 year after discharge compared with opioid-naive patients who did not receive an opioid prescription.[8] This raises the important question of whether ED opioid initiation for acute pain increases the risk of recurrent opioid use. To our knowledge, there have been no studies to date describing the risk of recurrent opioid use in a population of ED patients treated for acute pain. The objective of this study was to describe the risk of recurrent opioid use among ED patients initiating treatment with opioids.

MATERIALS AND METHODS

Study Design and Setting

This was a retrospective cohort study of all adult patients with an acutely painful diagnosis (see inclusion diagnoses below) who

Editor's Capsule Summary

What is already known on this topic

Opioid analgesics can create dependence and addiction.

What question this study addressed

Does emergency department (ED) opioid prescribing for acute pain increase the risk of future prescription opioid use in the next year?

What this study adds to our knowledge

In this review of more than 4,800 patients, 48% received an opioid prescription. Opioid-naive study patients who filled an opioid analgesic prescription were nearly twice as likely to receive a later opioid prescription compared with those who did not receive a prescription.

How this is relevant to clinical practice

Although shedding light on the pattern of opioid use after an ED visit for acute pain, these results highlight the need for better understanding of the role of this treatment in misuse or harm.

were discharged from the ED within a 5-month interval. The University of Colorado Hospital is an urban, academic ED with approximately 80,000 visits annually and an admission rate of 20%. All ED prescriptions are ordered electronically by an electronic medical record system: Epic 2010 (Epic Systems, Verona, WI).

Permission to access Colorado's prescription drug monitoring program was obtained from the Colorado Board of Pharmacy. Each patient's prescription-filling history in the year before and the year after the ED visit plus 60 days was recorded. Our prescription drug monitoring program tracks all dispensed prescriptions for controlled medications in the state except for prescriptions filled at federal sites, such as the Veterans Administration System and methadone programs. Prescription information is uploaded by pharmacies every 2 weeks for electronic retrieval by authorized users. Available prescription information includes provider name, date written, date dispensed, medication name and strength, quantity of pills, number of days prescribed, dispensing pharmacy, patient name and address, and method of payment. Our institutional review board approved the study and waived informed consent.

We evaluated all patients discharged from the ED from September 1, 2011, to February 1, 2012, with a common, acutely painful complaint. The discharge diagnoses investigated were dental or tooth pain, jaw pain, flank pain, abdominal pain, pelvic pain, back pain, neck pain, knee pain, headache, fracture, or sprain (Appendix E1 available on www.annemergmed.com). These categories were selected because they are likely to cause mild to moderate pain and are not expected to result in chronic painful conditions. Exclusion criteria included pregnancy, younger than 18 years, and admitted patients. Patients with multiple visits in the study period had only the initial visit included for analysis because we were primarily interested in opioid-naive patients and the association with recurrent opioid use. Considering multiple visits for a single patient may have resulted in a patient's being deemed both opioid naive and opioid non-naive within the study.

Methods of Measurement

Baseline demographic information and ED discharge prescriptions were abstracted from the electronic medical record by computer algorithm. We abstracted the following variables: chief complaint, age, sex, race or ethnicity, and insurance status. Race was coded as black, white, Hispanic, or other. Insurance status was coded as federal (Medicare or Medicaid), commercial, self-pay, medically indigent, and other (worker's compensation, Veteran's Affairs, or Child Health Plus). Chief complaints were categorized as abdominal or pelvic pain, back pain, chest pain, dental or ear, nose, and throat pain, extremity pain, head pain, other injury (eg, assault, motor vehicle crash), neck pain, and other complaint (eg, intoxication, lacerations, burns).

Each individual's prescription-filling data were abstracted manually from our state's prescription drug monitoring program (Health Information Designs LLC, Auburn, AL) by 1 study author (H.K., 45%) and 1 blinded assistant (55%), the former of whom trained the latter by using identical methodology. The prescription drug monitoring program database was queried by both name and date of birth; results were considered to be a match only if both criteria were fulfilled. Names that were similar (Matt and Matthew), differed trivially in spelling (Jennifer and Jenifer), or were hyphenated (Jones and Jones-Smith) were considered to be equivalent only if date of birth matched.

The information from the medical record and prescription drug monitoring program was merged into Research Electronic Data Capture (Vanderbilt, TN),[9] a secure Web-based application for building and managing online surveys and databases, and deidentified before analysis per our institutional review board requirements. Interrater reliability for manual prescription drug monitoring program abstraction between the 2 abstractors was assessed through double abstraction of 231 patients (10% of H.K.'s cases), using McNemar's test and κ coefficient. κ Values for interrater agreement of the outcomes of opioid-naive and recurrent opioid use were 0.99 and 0.96, respectively.