Original Research

Opioid Interruptions, Pain, and Withdrawal Symptoms in Nursing Home Residents

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ABSTRACT

Purpose: Interruptions in opioid use have the potential to cause pain relapse and withdrawal symptoms. The objectives of this study were to observe patterns of opioid interruption during acute illness in nursing home residents and examine associations between interruptions and pain and withdrawal symptoms.

Methods: Patients from 3 nursing homes in a metropolitan area who were prescribed opioids were assessed for symptoms of pain and withdrawal by researchers blinded to opioid dosage received, using the Brief Pain Inventory Scale and the Clinical Opioid Withdrawal Scale, respectively, during prespecified time periods. The prespecified time periods were 2 weeks after onset of acute illness (eg, urinary tract infection), and 2 weeks after hospital admission and nursing home readmission, if they occurred. Opioid dosing was recorded and a significant interruption was defined as a complete discontinuation or a reduction in dose of >50% for ≥1 day. The covariates age, sex, race, comorbid conditions, initial opioid dose, and initial pain level were recorded. Symptoms pre- and post-opioid interruptions were compared and contrasted with those in a group without opioid interruptions.

Findings: Sixty-six patients receiving opioids were followed for a mean of 10.9 months and experienced a total of 104 acute illnesses. During 64 (62%) illnesses, patients experienced any reduction in opioid dosing, with a mean (SD) dose reduction of 63.9% (29.9%). During 39 (38%) illnesses, patients experienced a significant opioid interruption. In a multivariable model, residence at 1 of the 3 nursing homes was associated with a lower risk of interruption (odds ratio = 0.073; 95% CI, 0.009 to 0.597; $P < 0.015$). In patients with interruptions, there were statistically insignificant changes in mean (SD) pain score (difference −0.50 [2.66]; 95% CI, −3.16 to 2.16) and withdrawal score (difference −0.91 [3.12]; 95% CI, −4.03 to 2.21) after the interruption as compared with before interruption. However, when compared with patients without interruptions, patients with interruptions experienced larger increases in pain scores during the follow-up periods (difference 0.09 points per day; 95% CI, −0.01 to 0.019; $P = 0.08$). In particular, patients who received the highest quartile of opioid dose before interruption experienced increases in pain scores over time that were 0.22 points per day larger (95% CI, 0.02 to 0.41; $P = 0.03$) than those without interruption. Withdrawal scores were not associated with opioid interruption regardless of dose before interruption.

Implications: Nursing home patients often experience interruptions in opioid dosing, which can be associated with worse pain, but not withdrawal symptoms, during acute illnesses. Clinicians should be aware of the potential risks and effects of opioid interruptions during acute illnesses in this patient group. (*Clin Ther*. 2014;36:1555–1563) Published by Elsevier HS Journals, Inc.

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INTRODUCTION

Among the 1.6 million nursing home patients in the United States, 49%–89% suffer from persistent pain, and 38.4% of these receive opioid analgesics.[1] During the course of their nursing home stay, many patients experience episodes of acute illness, treated both at the nursing home and in hospital.[2] Previous work has shown that medication changes and interruptions are common during these episodes; these interruptions not only represent purposeful changes in response to condition, but also inadvertent changes. For opioid prescriptions, these interruptions can potentially be risky.[3]

For patients on chronic opioid medications, tolerance and dependence typically occur after 3 weeks of daily use, and withdrawal symptoms can start as soon as 12–24 hours after interruptions, sometimes sooner in the case of short-acting opioid medications.[4] The severity of withdrawal symptoms depends on the type and frequency of the drug taken, but can initially include a series of flu-like symptoms, including anxiety, restlessness, insomnia, and stomach cramps.[5] One small, double-blind, placebo-controlled, crossover study found that the cessation of low-dose chronic opioids in older patients with noncancer pain led to an overall increase in pain, decrease in function, and diminished quality of life, with several patients experiencing symptoms of withdrawal during the abstinence period.[6]

In the setting of acute illness, withholding opioid medications can lead to relapse in pain or precipitation of withdrawal or other symptoms that can complicate the course of the patients' illness and recovery.[7] Although clinicians might choose to reduce or discontinue chronic opioid prescription for medical reasons, including to minimize polypharmacy, fear of an adverse drug reaction or an acute illness factor, such as altered mental status,[5] inadvertent omission can also occur, especially if patients are transferred to another site for care. To our knowledge, little is known about the patterns of opioid interruption in nursing home patients during acute illnesses and the potential consequences of these interruptions.

The objectives of this study were to: (1) describe the frequency of opioid interruption in nursing home patients during acute illness, (2) identify clinical and other factors associated with opioid interruption during acute illness, and (3) examine the association between opioid interruption and symptoms of pain and withdrawal during acute illness. We hypothesized that a combination of patient factors, including demographics, chronic disease burden, and cognitive and physical function, as well as acute clinical factors, can influence opioid interruptions during an acute illness, and that those receiving higher doses of opioid would experience greater effects of interruption if it occurred.

METHODS

Design, Setting, and Patients

This study was a prospective observational study of nursing home patients designed to describe patterns of medication prescribing for pain, depression, and psychosis in the nursing home, as described previously.[8] Patients were enrolled between 2007 and 2009 from 3 nursing homes in the metropolitan New York area, 2 large nonprofit facilities (514 and 816 nursing home beds) and one Department of Veterans Affairs (VA) facility (120 nursing home beds). Patients were included who were prescribed opioids as indicated in the pharmacy record, received at least one opioid dose daily in the 7 days preceding screening according to the medication administration record, and were free from acute illness at the time of screening according to medical and nursing record review. We excluded patients with expected nursing home stays shorter than 2 months, including those admitted for a post acute stay or those on hospice. The Institutional Review Boards at Jewish Home Lifecare and the James J. Peters VA Medical Center in Bronx, NY approved this study.

Informed consent was obtained from each patient or a legal surrogate. We collected baseline information on patient physical and cognitive function through interviews with patients, surrogates, and nursing staff. Physical function was assessed using the Activities of Daily Living scale derived from the Minimum Data Set, a federally mandated nursing home resident assessment instrument.[9] Cognitive function was assessed and scored using the Cognitive Performance Scale derived from Minimum Data Set.[10] We collected the following baseline information through medical record abstraction: demographics; chronic medical conditions; and current medications, including baseline opioid prescription dosage. A count of chronic medical conditions (including coronary disease, congestive heart failure, hypertension, liver disease, peripheral vascular disease,