Brief Report

Does Adherence to National Comprehensive Cancer Network Guidelines Improve Pain-Related Outcomes? An Evaluation of Inpatient Cancer Pain Management at an Academic Medical Center

Michael Mearis, PharmD, Joseph W. Shega, MD, and Randall W. Knoebel, PharmD, BCOP

Department of Pharmacy (M.M.), Advocate Condell Medical Center, Libertyville; and University of Chicago Medicine (J.W.S., R.W.K.), Chicago, Illinois, USA

Abstract

Context. Evidence-based guidelines are in place for the management of cancer-related pain, yet adherence remains problematic throughout health systems because of efficacy and safety concerns.

Objectives. To evaluate adherence to the National Comprehensive Cancer Network (NCCN) guidelines on pain management among cancer inpatients and assess whether adherence is associated with pain control.

Methods. A retrospective chart review of patients admitted to the hematology/oncology service at an academic medical center between April 1, 2011 and September 30, 2011 was conducted, and patients were allocated into groups based on adherence to NCCN guidelines. Pain control and safety outcomes were compared between adherence groups for the first 24 hours of hospital admission. Multivariate analyses were performed to identify predictors of regimens nonadherent to guidelines and predictors of inadequate achievement of analgesia.

Results. Among a random sample of 193 inpatients, 109 met the inclusion criteria of which 70 were guideline adherent and 39 nonadherent. A total of 63% of the patients initiated on NCCN adherent guidelines obtained analgesia at 24 hours compared with 41% in the nonadherent group ($P = 0.028$). Average pain scores across the 24-hour period were lower in the adherent compared with the nonadherent group (3.5 vs. 4.4, respectively, $P < 0.001$). Naloxone use, respiratory depression, and hypoxia did not significantly vary between adherence groups. Chronic home opioid exposure was significantly associated with nonadherent therapy (vs. adherent; odds ratio = 3.04, confidence interval = 1.28–7.18, $P = 0.01$) and achievement of analgesia at 24 hours (vs. not; odds ratio = 0.30, confidence interval = 0.12–0.73, $P < 0.01$).

Address correspondence to: Michael Mearis, PharmD, Department of Pharmacy, Advocate Condell Medical Center, 801 South Milwaukee Avenue, Libertyville, IL 60048, USA. E-mail: michael.mearis@advocatehealth.com

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Conclusion. Adherence to NCCN guidelines remains insufficient, with nonadherence being associated with inadequate analgesia. Opioid-tolerant patients remain at higher risk for guideline nonadherence and inadequate analgesia. Quality improvement initiatives should target opioid-tolerant patients. J Pain Symptom Manage 2014;48:451–458.

Key Words
Cancer pain, inpatient pain management, opioid tolerant, pain management guidelines, opioid analgesic

Introduction

Cancer pain continues to be an underrecognized source of patient suffering and dissatisfaction within health care systems.[1] Pain is one of the most common and feared symptoms of cancer, experienced by 30–50% of patients with cancer receiving treatment and 70–90% of patients with advanced disease.[2,3]

Much of our knowledge about the prevalence and management of cancer pain was reported in the seminal article by Cleeland et al.[4] Their report showed that 67% of outpatient oncology patients with advanced cancer used analgesics; however, 42% of these patients were unable to attain analgesia because of inadequate prescribing. To address this, in 2001, the Joint Commission established standards and core principles for the assessment and treatment of pain.[1,5] Additionally, guidelines were developed by the National Comprehensive Cancer Network (NCCN) and the European Society for Medical Oncology to better direct cancer pain assessment and management.[6,7] Unfortunately, the recent findings by Fisch et al[8] continue to demonstrate poor pain control, with 33% of patients in an outpatient oncology setting receiving inadequate analgesic prescribing with little improvement in analgesia when reassessed a month later. Using validated tools such as opioid consumption data and the Pain Management Index, undertreatment of cancer pain remains well documented.[9] A review conducted by Deandrea et al[10] of 26 studies using the Pain Management Index found that 43% of the patients throughout the studies had undertreated pain. Altogether, guideline development and dissemination has not translated into substantial improvements in pain control for oncology outpatients, possibly because of lack of adherence or efficacy.

Literature surrounding pain assessment and management among hospitalized oncology patients remains limited. Strategies used in the outpatient setting are often extrapolated into inpatient practice. However, cancer pain can often be overlooked or not afforded proper attention as other cancer- and/or therapy-related complications are being addressed.[11] As a result, cancer-related pain among hospitalized patients is often underdiagnosed and undertreated.

As part of a quality improvement initiative, we sought to establish adherence to NCCN guidelines for opioid prescribing among cancer inpatients and assess whether adherence was associated with improved pain-related outcomes and risk of opioid-related adverse events. We also evaluated factors associated with nonadherent therapy and achievement of analgesia within 24 hours of the inpatient admission.

Methods

Study Design and Sample

This study was a single-center, retrospective, cohort study, conducted at The University of Chicago Medicine and approved by the Biological Sciences Division Institutional Review Board. All adult patients admitted to the inpatient hematology/oncology service who received at least one dose of morphine, oxycodone, or hydromorphone between April 1, 2011 and September 30, 2011 were included in the analysis. Exclusion criteria included being initially admitted to an intensive care unit (ICU), a length of stay less than 24 hours, and no opioid administration or only receiving procedural opioids. We also excluded patients from the analysis who had incomplete data regarding opioid use before admission or analgesia at 24 hours.