SCIENTIFIC ARTICLE

Analgesic Consumption Following Outpatient Carpal Tunnel Release

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Purpose Few studies have examined the consumption of prescribed opioid medications after elective outpatient surgery. A better understanding of opioid consumption after elective upper-extremity surgery may lead to improved prescribing practices, decreased costs, and less leftover medication available for potential misuse. The goal of this study was to evaluate pain control and quantify the amount of leftover pain medication after outpatient carpal tunnel release.

Methods We performed a prospective study of patients scheduled for outpatient carpal tunnel surgery. All patients had failed nonsurgical treatment and had an electromyelogram/nerve conduction study confirming the clinical diagnosis. All patients were encouraged to remove the dressing on the first postoperative day. A total of 56 patients were initially enrolled in the study; 7 did not meet the inclusion criteria, which left 49 patients who completed the study. Average age was 57 years; 66% of patients were female. Information collected included analgesic prescribed, number of tablets consumed, and number of tablets remaining. Use of postoperative orthoses, complications, use of other analgesic medications, and reasons for not taking the prescribed analgesics were recorded.

Results Paracetamol with codeine and paracetamol with tramadol accounted for all prescriptions. Patients most frequently were given a prescription for 40 tablets. Average number of tablets consumed was 10 (range, 0–40 tablets). More than half of patients consumed fewer than 2 tablets. The average number of postoperative days of analgesic consumption was 2 (range, 0–7 days). Overall 1,531 tablets were leftover from the entire cohort.

Conclusions This study demonstrates that excess prescription analgesics are being prescribed after carpal tunnel surgery. *(J Hand Surg Am. 2017;■(■):1.e1-e5. Copyright © 2017 by the American Society for Surgery of the Hand. All rights reserved.)*

Type of study/level of evidence Therapeutic IV.

Key words Pain, carpal, outpatient, analgesic, consumption.

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THE MEDICAL COMMUNITY HAS become more aware of the growing health crisis surrounding the misuse of opioid analgesics.[1] There has been an unprecedented increase in morbidity and mortality associated with the use of these medications.[2] Overprescription of opioid analgesics has led to a steady increase in the prevalence of opioid addiction, which in turn has resulted in a steady increase in overdose and death rates.[3] This problem was demonstrated in the hand surgery community in a study by Johnson et al.[4] That article reported a rate of 13% of opioid-naïve patients continuing to fill

opioid prescriptions after hand surgery procedures 90 days after surgery. With a crisis at hand, the hand surgery community needs further evidence to provide guidance regarding the appropriate prescribing of these medications.

Postoperative pain control is an important part of a patient's overall care plan. Patients expect to receive a postoperative prescription for analgesic medication to ease the recovery process. However, when prescribing these medications, it is important to remember that they do not come without harm. In addition to potential adverse side effects, these medications have a high potential for abuse and addiction. Addiction is defined as continued use of a drug despite negative consequences. The disease of opioid addiction can occur in individuals using opioids to relieve pain of any cause, including postsurgical pain after hand surgery.[1,5] Because patients can be introduced to these opioid medications as a direct result of prescribing practices, it is crucial for physicians to aim to achieve responsible prescribing practices to avoid unintended consequences stemming from the use of these analgesics for postoperative pain control.

At our institution, it is standard practice to prescribe 30 or 40 tablets of opioid analgesics (paracetamol with codeine or paracetamol with tramadol) after outpatient carpal tunnel surgery (CTS). This is in contrast to the current practice in the United States, where the most commonly filled prescriptions are for hydrocodone-based medications and weaker opioids such as codeine and tramadol are rarely prescribed.[5] Waljee et al[5] recently published a study looking at postoperative analgesic consumption in approximately 300,000 patients undergoing elective upper-extremity surgery in the United States. They found that current opioid users were more likely to require postoperative opioid analgesics for routine procedures and were also more likely to receive refills and have an indicator of inappropriate prescribing. They concluded that more evidence was needed to identify patients who derived the greatest benefit from opioids, to recommend alternatives when opioids may not be indicated. When seeing patients in follow-up, it became clear to the authors that many patients were not filling the prescriptions they were given or were taking only a small percentage of the tablets prescribed. It became evident that our current prescribing practices were not evidence based, and therefore we set out to measure the actual consumption of prescribed opioid medications after carpal tunnel release (CTR). Therefore, the goal of our study was to study a prospective cohort of patients undergoing elective outpatient CTS to understand better actual opioid consumption after surgery.

MATERIALS AND METHODS

After we obtained approval from our institutional review board, we also secured informed consent from each patient who participated in the study. It was explained that the study team wanted to assess patients' surgical and postoperative experience with pain control, and we obtained permission to contact patients via telephone after surgery. This study was a prospective cohort study of patients scheduled for elective outpatient CTS. Inclusion criteria included (1) age 18 years or older, (2) ability to speak English, and (3) ability to give consent to participate in the study. In addition, all patients had an electromyelogram/nerve conduction study confirming the clinical diagnosis and had failed nonsurgical management. Exclusion criteria included (1) history of a pain syndrome, (2) history of chronic use of pain medications, (3) previous injuries to the hand to be operated on, (4) revision CTS, and (5) pregnancy. It was determined whether patients were eligible for the study at the time of surgery. The first author then contacted patients by phone to collect the following postoperative data using a prewritten script to standardize the process.

Demographic information was collected including the patient's age, sex, and medical history (including smoking, alcohol use, and the use of medications). Whether patients underwent a unilateral or bilateral procedure was recorded. Patients who underwent bilateral CTRs had surgeries staged approximately 6 weeks apart; only data from the first side was included in the analysis. Numerical pain scores (range, 1−10) were collected to assess patients' pain on the day of surgery as well as pain on postoperative days 1 and 2. On the pain scale, a score of 0 represented no pain and 10 represented the worst possible pain. The medication and number of tablets prescribed were recorded; patients kept track of how many tablets they used from the prescription as well as the number of days after surgery that they used the medication. The number of remaining tablets was obtained by having patients count the number of tablets remaining in the prescription bottle. These data were collected by patient report only. Patients were not asked to bring in the number of remaining tablets to the clinic. If the patients had leftover tablets, they were asked why they stopped taking the medication; this information was recorded, along with the number of tablets remaining. If the patient