

The Impact Two Opioid Prescription Protocols Had on Provider Prescription Patterns Following Ankle Fracture Repair Surgeries

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Purpose: This study aims to evaluate the impact that an urban multicenter trauma department's previous narcotic prescription protocols have had on provider opioid prescription patterns and the effect a change in protocol will have. This study will also determine an optimal postoperative opioid prescription duration for lateral malleolus fracture repair surgery. We will evaluate the opioid prescribing pattern first before any protocol was in place, followed by the first opioid protocol implemented in January 2018. Lastly, we will assess the trends of the current 4-week taper protocol implemented in January 2020.

Methods: Data were collected retrospectively. CPT codes were used to identify subjects who had undergone ankle fracture repair surgery. Patient data were separated by the respective year of their repair surgery from January 2016 to October 2020. PROMIS (Patient-Reported Outcomes Measurement Information System) survey results and visual analog scale (VAS) pain scores were collected in the hospital's electronic medical record system. Continuous data were presented as a mean, and significance was determined by an independent t test between two groups and a one-way analysis of variance test for three groups. The data were collected from January 1, 2016, to October 2, 2020.

Results: A total of 288 patients were enrolled in the study. The years were demographically similar. The mean morphine milligram equivalent (MME) per prescription decreased each year from 483.35 (2016), 417.04 (2017), 283.16 (2018), 248.22 (2019), to 145.51 (2020). The mean prescription duration also decreased each year from 103.19 days (2016), 90.12 (2017), 65.20 (2018), 30.65 (2019), to 20.74 days (2020). The number of prescriptions per patient and the number of pills prescribed per patient decreased each year as well. The rate of oxycodone-acetaminophen, tramadol, and acetaminophen-codeine prescriptions decreased over the years, while hydrocodone-acetaminophen prescription rates were not affected. Interestingly, the 1 month postoperative VAS pain score had a slight increase almost each year over the 5-year period, from 3.62 (2016), 3.68 (2017), 3.93 (2018), 4.52 (2019), to 4.09 (2020) with no statistically significant differences between any of the years. The 1-month postoperative physical function PROMIS scores decreased significantly from 2018 to 2019 ($P < 0.05$). Several factors were found to correlate with prescription patterns such as smoking, ethnicity, anxiety, arthritis, history of opioid use, insurance status, and type of opioid.

Conclusion: This study demonstrates that an opioid prescription protocol established in an orthopaedic trauma clinic can lead to decreased opioid prescription rates, decreased MME per prescription, and decreased opioid prescription duration. Interestingly, although overall MME significantly decreased from 2016 to 2020, there was also a minor trend toward increased pain perception. Several demographic and socioeconomic factors were shown to correlate with prescription patterns.