

Increased Resource Utilization During Initial Episode of Care Following Intramedullary Nailing of Tibia Fractures in Patients with Preinjury Opiate Use

Audrey Y. Chang; Rebekah Belayneh, MD; Gele Moloney, MD

Purpose: The purpose of this study was to investigate the relationship between preinjury opiate use and resource utilization following inpatient surgical treatment of tibial fractures using intramedullary nail (IMN) during initial episode of care and returns to emergency department (ED) within 180 days of surgery.

Methods: After IRB approval, a retrospective review was performed. Patients identified by CPT code 27759 (tibia fracture treated with IMN) at 2 academic urban Level I trauma centers from January 2015 to January 2022 were included; patients without initial ED presentation or without surgical data were excluded. Demographics, operative details, length of stay, details regarding consulting services, subsequent ED admissions, and opiate use status were collected through review of medical records and hospital billing data. Opiate use status was defined per admission notes at initial presentation. Opiate and non-opiate use groups were compared using chi-squared analysis and 2-tailed unpaired t-tests ($P < 0.05$ considered significant).

Results: 1017 patients were identified, with 937 patients meeting inclusion/exclusion criteria—778 (82.6%) having no significant preinjury opiate use and 159 (17.4%) having documented preinjury opiate use. The opiate use group was stratified into prescription opiates (54.5%), intravenous drug users/heroin (15.4%), medications to manage opiate dependence (ie, methadone, buprenorphine) (16.8%), or other (13.3%). There were no significant differences in demographics (age, sex, body mass index) between non-opiate and opiate use groups. Patients with preinjury opiate use, compared to those without, had increased length of stay (11.92 vs 10.25 days, $P = 0.0419$) and increased number of inpatient consults (4.12 vs 3.15, $P < 0.0001$) after tibial IMN. Specifically, patients with preinjury opiate use had statistically higher odds of acute/chronic pain consult (45.3% vs 20.2%, chi-squared = 36.2, $P < 0.0001$) and psychiatry consult (24.5% vs 10.7%, chi-squared = 15.9, $P < 0.0001$). Odds of return to ED were increased in patients with preinjury opiate use for general ED presentation (34.6% vs 13.2%, chi-squared = 39.6, $P < 0.0001$) and same-extremity instances (31.4% vs 19.0%, chi-squared = 9.1, $P = 0.0026$), with 45.8% of the intravenous drug use group having an unplanned return to ED.

Conclusion: Patients with preinjury opiate use required greater resource utilization evidenced by increased length of stay, number of consulted services, and returns to ED following tibial fracture IMN. Recognition of disparities in resource utilization for patients with preinjury opiate use may highlight areas in which the health-care system has opportunities to improve care.