Is a Positive Urinary Toxicology Screen in Femoral Shaft Fractures Associated With Longer Hospital Length of Stay and Increased Opioid Use?

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Purpose: The purpose of this retrospective review is to evaluate the relationship between urinary toxicology screen (UTS) and traumatic femoral shaft fractures treated with an intramedullary nail (IMN) and their effect on morphine milligram equivalents (MME) and hospital length of stay (LOS).

Methods: Data from a community Level II trauma center were retrospectively analyzed using ICD-10 procedure codes for femoral shaft fracture treated with an intramedullary device. Patients with femoral shaft fractures (AO/OTA 32A-C) treated with IMN between March 2018 to September 2022 were identified if patients were ≥16 years of age at time of injury and were a trauma activation. Patients without a UTS, pathologic fractures, low-energy mechanisms, or miscoded were excluded. Demographic data, Emergency Medical Services (EMS) field reports, ISS, and LOS was collected. Opiate medication given postoperatively was converted to MME.

Results: A total of 110 cases were included for analysis. 88 (80%) were male and mean age was 35.6 years. Among the UTS panel, only opioid use was associated with increased MME. Specifically, patients with negative opioid UTS had higher ISS than opioid positive UTS (14 vs 10); however, they had lower MME/day (24.8 vs 39.0; P = 0.008). LOS was not statistically significant between opioid negative and positive patients (6.0 vs 5.0; P = 0.978) nor was it statistically significant with any other narcotic.

Conclusion: Among patients with femoral shaft fractures treated with IMN, patients with opiate positive UTS had a significantly higher opiate use than patients who were opiate negative, despite a lower ISS. No statistically significant differences were observed in LOS between opioid positive and negative patients. While previous studies have demonstrated an association of positive UTS and MME as well as LOS in the general orthopaedic trauma population, this study suggests that an opioid positive screen may better predict increased narcotic use.