Racial Disparities in Outcomes Following Pediatric Femoral Shaft Fracture Repair

***Sean A. Tabaie, MD**; Alisa Malyavko, BS; Abhay Mathur, MD; Theodore Quan, BS*

Purpose: Femoral shaft fractures are a common pediatric injury requiring either conservative or operative management. Several studies have been done to evaluate the impact of race on pediatric pain management, anesthesia, and emergency department visits; however, there are limited studies investigating outcomes following pediatric operative treatments. The aims of this study were to determine whether an association is present between a pediatric patient's race and number of comorbidities, 30-day postoperative outcomes, and length of hospital stay following open treatment of femoral shaft fractures.

Methods: Pediatric patients who underwent open treatment of femoral shaft fracture were identified in the National Surgical Quality Improvement Program-Pediatric database from 2012-2019. Patients were categorized into 2 cohorts: patients who were White and patients from underrepresented minority (URM) groups. URM groups included those who were Black or African American, Hispanic, Native American or Alaskan, and Native Hawaiian or Pacific Islander. Differences in demographics, comorbidities, and postoperative complications were assessed and compared between the 2 groups using bivariate and multivariable regression analyses.

Results: Of the 5284 pediatric patients who underwent open treatment of femoral shaft fracture, 3650 (69.1%) were White and 1634 (30.9%) were from URM groups. Compared to White patients, URM patients were more likely to have a higher American Society of Anesthesiologists classification ($P = 0.012$), and they were also more likely to have pulmonary comorbidities ($P = 0.005$) and require preoperative blood transfusion ($P = 0.006$). Following adjustment, patients from URM groups had an increased risk of prolonged hospital stay (odds ratio [OR] 2.36; $P = 0.007$).

Conclusion: URM patients undergoing open treatment of femoral shaft fractures have an increased risk of an extended hospital stay postoperatively compared to White pediatric patients. As the racial and ethnic constitution of the pediatric population changes, understanding racial and ethnic health disparities will be crucial to providing equal, high-quality care to all patients.