

**Racial Disparity in Treatments for Femoral Fractures in a Medicaid Database**

*Charisse Y. Sparks, MD; Mari F. Vanderkarr, BS; Jill Webster Ruppenkamp, MS; Mollie Vanderkarr, MSc; Anjani Parikh, MPH; Chantal E. Holy, MSc; Paul M. Coplan; Toni M. McLaurin, MD*

*Johnson & Johnson, New Brunswick, New Jersey, UNITED STATES*

**Purpose:** Racial disparities within elective care have been documented but are less clearly delineated in emergency care. Our study compared patient demographics, diagnoses, and health-care utilization in patients presenting with acute femoral fractures.

**Methods:** Patients from the IBM MarketScan Medicaid database with femoral fracture (date of first fracture diagnosis = index) from 1 October 2015 to 31 December 2020 were identified. Exclusion criteria included: concurrent humerus or tibia fracture, amputation at index, other fractures pre-index, race other than Black or White, due to small sample size. Covariates included race, patient demographics, comorbidities, fracture types (open vs closed, Gustilo I-II vs III), and procedural characteristics. Outcomes included reoperations, severe complications (deep/device infection, osteomyelitis, nonunion, malunion, device breakage) or postsurgical medication use up to 2 years post-index. For health-care utilization analyses, surgically treated Black versus White cohorts were propensity-score matched on age, gender, fracture type, and index year.  $\chi^2$  tests and survival analyses (Kaplan-Meier and Cox proportional hazard models) were built.

**Results:** 34,621 patients were identified. The Black cohort had a greater proportion of young patients versus the White cohort (<35 years: 5.7% Black vs 2.1% White), had a greater proportion of more severe fractures (open fracture: 6.1% Black vs 3% White; comminuted fractures: 6.7% Black vs 3.6% White), and had more shaft fractures (14.4% Black vs 8.9% White). Prior to matching, differences in comorbidities were observed: complicated hypertension affected 24.1% Black versus 15.7% White, and complicated diabetes, 22.4% Black versus 18.2% White. In the matched cohort, the 2-year risk for severe complications and reoperations averaged 21.2% and 19.7%, respectively. White patients were more likely to undergo reoperation compared to Black patients (hazard ratio [HR]: 1.38; confidence interval [CI]: 1.24-1.45;  $P < 0.001$ ). Within the subcohort of patients with severe complications, White patients were also more likely to undergo reoperation versus Black patients (HR: 1.25; 95% CI: 1.06-1.47). Prescription use within 90 days was significantly different for benzodiazepines (9.5% Black, 18.4% White,  $P < 0.001$ ), antidepressants (18.9% Black, 26.7% White,  $P < 0.0001$ ), and antibiotics (24.3% Black, 32.0% White,  $P < 0.0001$ ), but not for opioids (strong opioids: 4.36% Black, 5.02% White,  $P = 0.305$ ; mild/moderate opioids: 73.3% Black, 74.6% White,  $P = 0.346$ ).

**Conclusion:** Population-wide racial differences were observed in age and severity of injury of patients presenting with femoral fractures. In matched cohorts, Black patients were less likely to undergo reoperation, or receive antibiotics or mental health prescriptions, compared to White patients.