Impact of Proton Pump Inhibitors and H2 Antagonists on Postoperative Complications Following Femur Fracture Repair With Total Hip Arthroplasty: A Matched Cohort Study

Uttsav Patel, BS*; Rafael Madera, BS; Brian Lynch, MD*

Purpose: This study evaluated the impact of proton pump inhibitors (PPI) and H2 receptor antagonists (H2s) initiated at the time of total hip arthroplasty (THA) for femur fracture repair on postoperative complications.

Methods: This retrospective cohort study used the TriNetX research network to analyze 5175 patients prescribed PPIs and 2327 patients prescribed H2s, all without prior use of these medications. Treatment began at the time of THA following femur fracture. After propensity score matching for demographics and comorbidities, each group included 2295 patients. Outcomes included 90-day surgical and medical complications and 2-year surgical complications, identified using ICD and CPT codes. Risk ratios (RR) and 95% confidence intervals (CI) were calculated to compare complication risks between groups.

Results: At 90 days, the PPI group had higher rates of pneumonia (4.3% vs 2.5%; RR: 1.71, 95% CI: 1.24–2.35, P = 0.0009). The H2 group had higher rates of transfusion (17.0% vs 14.1%; RR: 0.83, 95% CI: 0.73–0.95, P = 0.0081) and readmission (11.9% vs 9.9%; RR: 0.83, 95% CI: 0.70–0.98, P = 0.0293). At 2 years, the PPI group had increased rates of periprosthetic fractures (5.4% vs 3.6%; RR: 1.48, 95% CI: 1.13–1.95, P = 0.0043), periprosthetic inflammation (3.3% vs 2.3%; RR: 1.44, 95% CI: 1.02–2.05, P = 0.0385), reoperations (2.1% vs 0.8%; RR: 2.53, 95% CI: 1.49–4.28, P = 0.0004), and mechanical loosening (1.5% vs 0.8%; RR: 1.84, 95% CI: 1.06–3.21, P = 0.0285). The overall mechanical complication rate was also higher in the PPI group (5.9% vs 4.6%; RR: 1.28, 95% CI: 1.00–1.64, P = 0.0475).

Conclusion: PPI use at the time of THA for femur fracture repair was associated with increased short- and long-term complications, including pneumonia, periprosthetic fractures, inflammation, reoperations, and mechanical loosening. In contrast, H2 antagonists were linked to higher short-term transfusion and readmission rates but fewer long-term complications. These findings suggest H2 antagonists may be a preferable option for gastrointestinal prophylaxis in this patient population.