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Risk Factors in Adverse Postoperative Outcomes in Patients with Intertrochanteric Hip Fractures Undergoing Total Hip Arthroplasty

Introduction: Risk factors for surgical correction of intertrochanteric hip fractures, a subcategory of hip fractures, are not well researched. Known risk factors for poor surgical outcomes include obesity, smoking status, and older age. This study evaluated potential risk factors for 30-day post-operative outcomes in patients undergoing total hip arthroplasty (THA) for intertrochanteric hip fracture.

Methods: The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database was retrospectively analyzed between 2008 and 2016 for patients undergoing THA for intertrochanteric hip fracture. Patients were stratified by BMI, age, and smoking status. Pearson's Chi-Squared Analyses were used to assess the relationship between comorbidities and frequency of adverse events. Independent samples t-tests were used to analyze the relationship between comorbidities and mean operative time and length of hospital stay (LOS). Binary logistic regression was used to determine the association between comorbidity variables and adverse outcomes.

Results: Database query resulted in 221 patients. Chi-squared analyses showed that patients on steroids for a chronic condition ($p=0.034$), receiving blood transfusion within 72 hours prior to surgery ($p=0.021$), and patients who were anemic ($p=0.029$) had significantly higher rates of adverse events (Table 1). Patients with diabetes ($p=0.013$), COPD ($p=0.034$), dialysis ($p=0.009$), and anemia ($p < 0.001$) had significantly longer mean LOS. Obesity was associated with significantly longer average operating time ($p=0.005$), whereas bleeding disorder was associated with shorter operating time ($p=0.031$).

Discussion and conclusion: This study highlights that specific comorbidities are significantly associated with longer operation time and hospital LOS. However, BMI, age, and smoking status were not associated with a significant difference in rates of post-operative adverse events.