

A31

Jack Zhou M.D.

Advisor(s): Danielle Casagrande M.D.

Co-author(s): Vinay Bijoor, Ben Parker, Eric N. Windsor, David H. Mai, Jonathon Gross, Jad Bou Monsef, Paul Pipitone, Daniel Wilen, Claude Scott, Colin Woon, Danielle Casagrande

Preoperative International Normalized Ratio (INR) and its Association with Readmission in Total Shoulder Arthroplasty

Introduction: Preoperative international normalized ratio (INR) is used to assess coagulation. Elevated INR has been linked to bleeding complications and major cardiovascular events. This study evaluates the relationship between preoperative INR and readmission rates in patients undergoing total shoulder arthroplasty (TSA).

Methods: A retrospective cohort study of TSA cases (2012-2021) was conducted using the National Surgical Quality Improvement Program (NSQIP) database. Patients aged ≥ 18 years were grouped by preoperative INR: ≤ 1 , 1.01-1.24, 1.25-1.49, and ≥ 1.5 . The primary outcome was unplanned hospital readmission within 30 days after surgery. Potential confounders included demographics (age, sex, race, ethnicity), baseline health (functional status, ASA classification, BMI, smoking status within one year, history of diabetes, recent immunosuppressive therapy), and procedure characteristics (admission origin, surgical setting, anesthesia modality, preoperative transfusion). Univariate and multivariable regression analyses with adjustment for confounding were used to compare cohorts and assess the relationship between INR and readmission.

Results: Among 15,397 TSA patients, INR cohorts contained 10,274 (≤ 1), 4,342 (1.01-1.24), 430 (1.25-1.49), and 351 (≥ 1.5) patients. Most were aged 70-79 years, White, non-Hispanic, independent in function, ASA class 3, obese, and without smoking, diabetes, or immunosuppressive therapy. The INR ≥ 1.5 cohort was predominantly male, while others were mostly female. On multivariable analysis, patients with preoperative INR 1.01-1.24 (OR: 1.31, 95% CI 1.07 to 1.59; $p=0.009$) and INR 1.25-1.49 (OR: 1.82, 95% CI 1.19 to 2.70; $p=0.004$) had increased risk of unplanned readmission following TSA compared to patients with INR ≤ 1 [Table 2].

Conclusion: Elevated preoperative INR may increase risk of readmission in TSA. Future studies on optimizing coagulation management and perioperative strategies may improve outcomes.