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Predictors of Postoperative Outcomes in Chronic Long Bone Osteomyelitis Patients

INTRODUCTION: Chronic long bone osteomyelitis (CLBO) is associated with adverse postoperative outcomes. The purpose of this study is to investigate the rates of and risk factors responsible for postoperative complications after CLBO surgery.

METHODS: The National Surgical Quality Improvement Program was queried to identify CLBO patients who underwent surgery (debridement, excision, incision, and sequestromy) between 2008 and 2016. Postoperative outcomes include complications, readmissions, reoperations, and extended (≥75th percentile) length of the stay. Binary logistic regression analysis was used to identify risk factors of adverse events.

RESULTS: 318 patients (70.8% male, 63.8% white, mean age 50.6 years) were identified, with osteomyelitis of the tibia/fibula (179), femur (95), humerus (28), and radius/ulna (16). 64 (20.1%) had postoperative complications, 11 (3.5%) required reoperations, and 23 (7.2%) were readmitted. Common 30-day complications were deep surgical site infection (16 patients, 25%) and sepsis (13 patients, 20.3%). Significant risk factors for poor surgical outcomes are diabetes (OR=2.7 95% confidence interval [CI] [1.1 – 6.6], p=0.027), open wound (OR=2.0 95% CI [1.2 – 3.6], p=0.015), and hypoalbuminemia (OR=1.9 95% CI [1.1 – 3.6], p=0.032). Hypoalbuminemia predicted reoperations (OR=4.0 95% CI [1.2 – 13.5], p=0.027), readmissions (OR=2.6 95% CI [1.1 – 6.3], p=0.032) and extended length of stays (OR=3.1 95% CI [1.8 – 5.5], p<0.001), but not mortality (p=0.052).

DISCUSSION: 20.1% of CLBO patients experience postoperative complications. Identified risk factors were diabetes, open wound, and hypoalbuminemia. Hypoalbuminemia predicted extended length of stay, reoperation, and readmission, building on prior investigations that suggest it to correlate with adverse postoperative outcomes.