

Analysis of Postoperative Outcomes in Chronic Vs Acute Long Bone Osteomyelitis Patients

INTRODUCTION: Long bone osteomyelitis (OM) is a complex disease that can present acutely (AO) and chronically (CO) and is often associated with high morbidity and complications. However, there is a lack of literature that highlights the difference in postoperative outcomes between AO and CO patients.

METHODS: The National Surgical Quality Improvement Program was retrospectively queried for patients with CO and AO of the humerus, radius/ulna, femur, or tibia/fibula who had debridement, excision, incision, and sequestromy procedures in 2008 through 2016. Postoperative outcomes such as complications, readmissions, reoperations, and extended length of stay (≥ 75 th percentile length of the stay) were compared. Logistic regression analysis predicted relative odds of postoperative complications.

RESULTS: 318 and 158 patients were identified in the CO and AO groups, respectively, and had similar age, sex, and race distributions. OM prevalence in the humerus (9% vs 8%), ulna/radius (5% vs 6%), femur (30% vs 38%), tibia/fibula (56% vs 48%) and length of stay (8 vs 11) was similar among the groups ($p=0.119$). Postoperative complications (AO 34%; CO: 20%) and extended length of stay (AO 39%; CO 78%) were different (both, $p=0.001$). Reoperation, readmission, and mortality rates were similar among the groups (all, $p>0.05$). AO patients were more likely to have preoperative hypoalbuminemia (OR=1.6 95% confidence interval [CI] [1.0 – 2.4], $p=0.032$) and had increased odds of any complications (OR=2.1 95% CI [1.3 – 3.2] $p=0.001$) and extended length of stay (OR=2.0 95% CI [1.3 – 3.0], $p=0.001$). Hypoalbuminemia predicted extended length of stay in both groups, and any complications in CO (all, $p<0.04$).

DISCUSSION: The distribution of long bone OM by body region was comparable between AO and CO patients. However, AO individuals were more likely to present with preoperative hypoalbuminemia, stay in the hospital for extended periods of time postoperatively, and develop complications.