

Risk Factors and Thirty-Day Postoperative Outcomes in Osteonecrosis Patients Undergoing Total Knee Arthroplasty

INTRODUCTION: Well-backed literature about risk factors and 30-day postoperative outcomes of patients who undergo total knee arthroplasty (TKA) in the setting of pre-existing osteonecrosis (ON) is scarce. Our aim is to evaluate the rates at which risk factors, postoperative outcomes, reoperation, readmission, and mortality occur in ON patients undergoing TKA.

METHODS: The National Surgical Quality Improvement Program was queried to identify patients undergoing TKA from 2008 to 2016. A total of 151 patients with and 151 subjects without ON were matched for ON, using a 1:1 propensity score matching process based on gender, age, and body mass index. Chi-square analysis, t-test and regression analysis were done to compare demographics, preoperative risk factors, perioperative and postoperative variables as well as adverse events such as postoperative complication(s), reoperation, readmission, and/or in-hospital mortality.

RESULTS: Of 225,475 patients, 306 were only included after propensity score matching. ON patients had higher mean Anesthesia Society of Anesthesiologists scores (2.52 ± 0.59) than non-ON (2.39 ± 0.58 ; $p=0.049$). There was an increased frequency of pre-existing chronic obstructive pulmonary disease (COPD) (2.6% vs 11.3%; $p=0.005$) and bleeding disorders (0.0% vs 4.6%; $p=0.015$) in ON vs. non-ON. Both groups had comparable rates of operative time, length of hospital stay, postoperative complications, reoperation, readmission, and mortality. Regression showed none of the preoperative risk factors to be independent predictors of adverse events.

DISCUSSION: Between patients who underwent TKA with ON vs. non-ON, there were comparable values in operative time, length of hospital stay, and adverse postoperative outcomes. In the preoperative setting, ON patients were more likely to have a history of COPD and bleeding disorders. Further research is needed to better compare risk factors and postoperative outcomes of ON patients undergoing TKA.