

The Impact of Thyrotoxicosis on Outcomes and Complications Following Total Knee Arthroplasty with Minimum 2-Year Surveillance

Introduction: There is limited literature evaluating the impact of thyrotoxicosis on long-term outcomes after total knee arthroplasty (TKA). The objective of this retrospective cohort study was to compare outcomes and complication rates for patients with and without thyrotoxicosis undergoing TKA.

Methods: New York's Statewide Planning and Research Cooperative System (SPARCS) database was queried to identify patients undergoing TKA between 2009 and 2011 with a minimum 2-year follow-up. Propensity score match (PSM) by age, sex, and obesity status was used to isolate patients with and without thyrotoxicosis. Univariate analyses evaluated demographics, complications, and revision rate. Multivariate binary logistic regression models assessed correlations between thyrotoxicosis and postoperative outcomes.

Results: 380 propensity score matched patients were included (thyrotoxicosis: n=190; non-thyrotoxicosis: n=190). The thyrotoxicosis cohort had higher surgical charges (\$43,055.83 vs. \$33,316.40, $p<0.001$) and longer length of stay (3.80 days vs. 3.35 days, $p=0.022$). Compared to non-thyrotoxicosis patients, those with thyrotoxicosis had lower rates of surgical complications, blood transfusions, medical complications, acute renal failure, and mortality during hospitalization (all $p<0.05$). Multivariate regression analysis revealed that thyrotoxicosis patients had lower risk for surgical complications (OR: 0.427[0.271–0.672], $p<0.001$), blood transfusions (OR: 0.411[0.258–0.656], $p<0.001$), medical complications (OR: 0.428[0.250–0.733], $p=0.002$), and mortality (OR: 0.621[0.405–0.954], $p=0.030$) (Table 1).

Conclusion: In a propensity score matched cohort of patients undergoing TKA, patients with thyrotoxicosis had higher surgical charges and length of stay, but lower surgical and medical complications, blood transfusions, and mortality rates. These results can support management of postoperative expectations and concerns in this patient cohort.