

The Impact of End Stage Renal Disease on Postoperative Outcomes of Total Knee Arthroplasty Patients

Introduction: Patients with end-stage renal disease (ESRD) are at an increased risk of knee joint osteoarthritis and osteonecrosis requiring total knee arthroplasty (TKA). This study examined the postoperative outcomes and complications of TKA on patients with and without ESRD.

Methods: The New York Statewide Planning and Research Cooperative System (SPARCS) database between 2009 and 2013 was queried for patients who underwent TKA surgery. 92,627 patients that underwent TKA were identified. A 1:1 propensity score-match by sex and age was conducted to match patients with and without ESRD (n=170 each; 340 total). Univariate analysis compared demographics, post-operative complications, reoperation, readmission, revisions of TKA and hospitalized mortality between the ESRD and non-ESRD cohorts. Multivariate binary logistic regression models that controlled for sex and age were used to evaluate ESRD as an independent predictor of postoperative outcomes for patients undergoing TKA.

Results: Patients with ESRD had a longer length of stay (8.3 days vs 4.0 days; $p < 0.001$) and higher cost of care (\$75,555.21 vs \$43,532.27; $p < 0.001$). Multivariate logistic regression models revealed that patients with ESRD had higher frequencies of surgical complications, wound complications, postoperative blood transfusions, medical complications, acute myocardial infarctions (MI), pneumonias, sepsis, readmissions, and hospitalized mortalities after surgery (all, $p < 0.05$).

Conclusions: Patients with ESRD who underwent TKA had higher surgical costs, longer hospital stays, and higher rates of complications and mortality. The impact of ESRD on postoperative outcomes of TKA should be strongly considered when deciding to operate.