

The Impacts of Kidney Functionality on Outcomes and Complications Following Total Hip Arthroplasty with Minimum 2-Year Surveillance

Study Design: Retrospective analysis.

Objective: This study was conducted to understand how End Stage Renal Disease (ESRD) contributes to complication rates in patients undergoing total hip arthroplasty (THA).

Introduction: There is limited literature evaluating the impact of ESRD on long-term outcomes following THA. However, it is understood that renal osteodystrophy in conjunction with dialysis can contribute to an increased risk of osteonecrosis and joint arthroplasty in patients with chronic kidney disease (CKD). As a result, THA surgeries become more necessary in these patients. Additionally, association of CKD with diabetes mellitus and hypertension can predispose patients to periprosthetic joint infections (PJIs) and aseptic loosening.

Methods: Patients with ESRD who were admitted for THA between 2009 and 2011 were reviewed using New York State's Statewide Planning and Research Cooperation System. A 1:1 propensity score-match by age and gender was performed on 456 patients, followed by a univariate analysis to evaluate demographics and postoperative outcomes. Multivariate binary logistic regression models were also conducted to identify correlations between ESRD and postoperative outcomes while controlling for sex and age.

Results: Patients with ESRD incurred higher charges across THA surgical visits (\$78,045 vs. \$47,582; $p < 0.001$) and had longer total lengths of stay (8.43 days vs. 4.29 days; $p < 0.001$). Two years post-operatively, patients with ESRD had higher rates of adverse outcomes as compared to non-ESRD patients. These outcomes included surgical complications, medical complications, postoperative readmissions, and in-hospital mortalities (all, $p < 0.05$).

Conclusion: Patients with ESRD undergoing THA incurred higher hospital charges and experienced higher rates of complications than did similar patients without ESRD. These results identify a need for better management of postoperative expectations and concerns for ESRD patients undergoing THA.