

Should You Transplant the Kidney Before or After Total Knee Arthroplasty in Patients with ESRD

Objective: Analyze incidence rates and postoperative outcomes between End Stage Renal Disease (ESRD) patients and status post kidney transplant cohorts undergoing Total Knee Arthroplasty (TKA).

Summary of background data: ESRD occurs when a person's kidneys cease functioning, requiring long-term dialysis or kidney transplantation. Comparison of clinical outcomes for patients undergoing TKA with ESRD or who have received a pre-operative transplant has not been extensively explored.

Methods: The National Inpatient Sample was queried to identify patients who underwent TKA from 2005 – 2012. Patient demographics and incidence rates of patients with ESRD and kidney transplants were reported from 2005 – 2012. Differences in postoperative outcomes in the cohorts with ESRD and kidney transplants were compared.

Results: Average incidence rate of patients with ESRD from 2005 – 2012 was 4.38 (95%CI: 3.31 – 5.45) and 2.34 (95%CI: 2.06 – 2.62) for kidney transplant patients (Figure 1). Incidence rates of ESRD and kidney transplants increased 55.24% and 13.21%, respectively from 2005 – 2012 (Figure 1). The ESRD cohort experienced higher rates of surgical complications, wound complications, blood transfusions, medical complications, pneumonia, and hospital mortality (all, $p < 0.05$) (Table 1). ESRD patients had increased risk of surgical complications (OR=2.611, 95%CI=1.308 – 5.213, $p=0.007$), wound complications (OR=2.525, 95%CI=1.037 – 6.152, $p=0.041$), blood transfusions (OR=2.849, 95%CI=2.223 – 3.652, $p < 0.001$), medical complications (OR=1.474, 95%CI=1.064 – 2.044, $p=0.020$), and pneumonia (OR=2.525, 95%CI=1.037 – 6.152, $p=0.041$) (Table 2).

Conclusions: ESRD patients who undergo TKA experienced higher rates of operative and post-operative complications, which should be taken into consideration to optimize ESRD patients prior to TKA surgery. Additionally, a kidney transplant requirement should be considered to minimize postsurgical complications.