

Dialysis-Dependent Patients Undergoing Total Knee Arthroplasty: 50% Dead and 25% Infected at 5 Years

Daniel Christoph Karczewski, Harold I. Salmons¹, Dirk Larson¹, Nicholas Bedard¹, Daniel J Berry¹, Matthew Philip Abdel¹
¹Mayo Clinic

INTRODUCTION: Limited data exists on dialysis-dependent patients undergoing primary total knee arthroplasty (TKA). Therefore, we analyzed mortality rate, cumulative incidences of any revision or reoperation, and risk of infection in dialysis-dependent patients undergoing primary TKA.

METHODS: We identified a total of 27 dialysis-dependent patients who underwent 28 primary TKAs between 2000 and 2019 using our institutional total joint registry. Surgical indications included osteoarthritis (89%), post-septic arthritis (7%), and traumatic arthritis (4%). The leading causes for dialysis were diabetic nephropathy (18%), multifactorial nephropathy (18%), and polycystic kidney disease (11%). Mean time from dialysis initiation to TKA was 3 years. The mean preoperative creatinine and GFR were 6 mg/dl and 14 ml/min, respectively. Competing risk analyses accounting for death, and Kaplan-Meier analyses, were performed. Mean follow up was 3 years.

RESULTS: The 5-year survivorship free from death was 44%. The 5-year cumulative incidence of any revision was 22%. There was a total of 6 revisions, and all were for periprosthetic joint infections (PJIs). The 5-year cumulative incidence of any reoperation was 26%. There was a total of 2 additional reoperations: one for periprosthetic tibia fracture at 7 years, and one for a superficial wound infection at 2 months. The 5-year cumulative incidence of any infection was 26%. Postoperative creatinine and GFR were 5 mg/dl and 11 ml/min, respectively. Successful renal transplant was performed in 2 patients at a mean of 3 years postoperatively.

DISCUSSION AND CONCLUSION: More than half of all dialysis-dependent patients undergoing primary TKA died within 5 years. PJI was the main cause of failure (21%), and less than one in 10 patients underwent successful postoperative renal transplant.