

Orthopaedic and Medical Outcomes of Total Knee Arthroplasty in Patients With Prior Native Septic Arthritis: A Propensity-Matched Cohort Study

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INTRODUCTION: Patients with a history of native knee septic arthritis (SA) may be at increased risk of multiple medical and orthopaedic complications following total knee arthroplasty (TKA). This propensity matched cohort analysis conducted using the TriNetX database evaluates orthopaedic and medical outcomes in this population compared to matched controls

METHODS: Two cohorts were constructed using the TriNetX database. The first included 1,212 patients with confirmed ipsilateral and native SA and TKA, and the other included 6,664 patients of which side specificity could not be confirmed given database limitations. Medical and orthopaedic outcomes were compared against a control group at 1-month, 3-month, 6-month, 1-year, and all-time in the group without known side specificity, and at 6-month, 1-year, and all-time in the side specific group to ensure adequate sample size. 1:1 propensity score matching was conducted using a greedy nearest neighbor matching algorithm, and outcomes were assessed using an odds ratio (OR) with a 95% confidence interval (CI). A p-value less than 0.05 was considered significant.

RESULTS: In the unknown side specific group, rates of prosthetic joint infection, revision, periprosthetic fracture, instability/dislocation events, mechanical loosening, surgical site infections, acute renal failure, deep vein thrombosis and death were significantly higher at all time intervals ($p < 0.05$). Pulmonary embolism rates were higher in all time periods ($p < 0.03$) except at 1 month. In the known side specific group, there were increased rates of prosthetic joint infection ($p = 0.047$) and death ($p = 0.028$) at the 6-month interval, increased rates of prosthetic joint infection, revision, acute renal failure, deep vein thrombosis, and death ($p < 0.035$) at the 1-year interval, and prosthetic joint infection ($p < 0.01$), surgical site infection ($p < 0.01$), and deep vein thrombosis ($p = 0.01$) over the entire follow up-period.

DISCUSSION AND CONCLUSION: Patients with a history of native knee septic arthritis are associated with higher rates of multiple medical and orthopaedic complications following total knee arthroplasty.