

Distal Femur Replacement versus Revision Total Knee Arthroplasty following Periprosthetic Fracture

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INTRODUCTION: Periprosthetic fractures following total knee arthroplasty (TKA) are associated with significant morbidity and present a challenge to orthopaedic surgeons. Best practice is still debated, but two options are distal femur replacement (DFR) and revision TKA (rTKA). This study aims to compare these options in the setting of periprosthetic fractures following TKA.

METHODS: This retrospective cohort study drew data from the National Readmissions Database, years 2016-2019. Patients with periprosthetic fractures undergoing either rTKA or DFR were identified via ICD-10 codes. Multivariate regression was performed to assess outcomes. Negative binomial regression was performed to assess 30-day readmission, reoperation, and discharge disposition. Quasi-Poisson regression was performed to assess length of stay (LOS) and total charges. Demographics and comorbidities, measured via Elixhauser comorbidity index, were controlled for in our analysis.

RESULTS: A total of 23,162 patients, 17,795 undergoing rTKA and 5,368 undergoing DFR, were included. The mean age was 75.2 years. There was no difference in medical complications, but patients undergoing DFR had increased surgical complications (Odds Ratio (OR) 1.215; p<0.001), including joint infections (OR 2.62; p<0.001) and dislocations (OR 7.013; p<0.001). DFR was also associated with increased 30-day readmission (OR 1.183; p=0.005) and reoperation (OR 1.736; p<0.001). They also had greater odds of routine discharge (OR 1.566; p<0.001), longer LOS (OR 1.062; p=0.009), and greater total charges (OR 1.565; p<0.001).

DISCUSSION AND CONCLUSION: In the setting of periprosthetic fractures, rTKA is preferable to DFR when appropriate. DFR is associated with greater complications, including joint infections and dislocations. Furthermore, these patients may experience a worse hospital course, with greater risk of requiring a readmission or reoperation within 30-days, longer LOS, and significantly greater cost associated with their care.

