

Arthroplasty for Treatment of Geriatric Distal Femur Fractures: Incidence, Complication, and Revision Rates

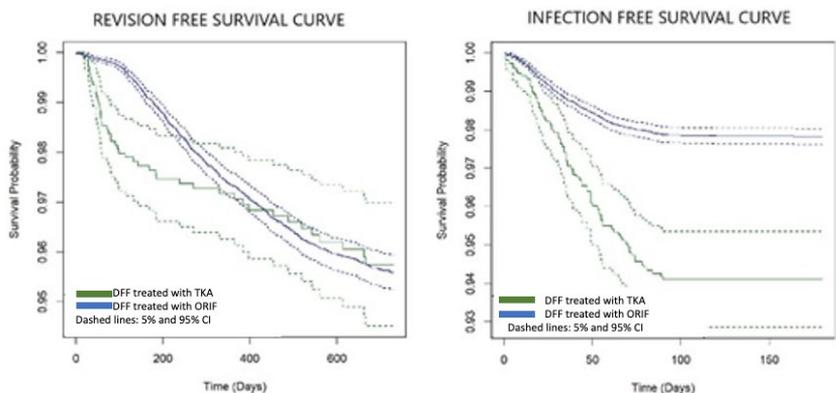
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Purpose: This study aimed to examine the incidence and rate of complications in using arthroplasty, such as total knee arthroplasty (TKA) and distal femoral replacement (DFR), to treat geriatric distal femur fractures (DFFs) compared to open reduction and internal fixation (ORIF). We used a large, national claims database and sought to address the limitations of previous research that only included small case series.

Methods: A retrospective review was conducted using the PearlDiver national all-claims database by querying both CPT and ICD-10 procedure codes for ORIF and TKA for treatment of DFF in patients 60 and older from 2015 to 2020. The TKA codes for primary DFF treatment included both DFR and complex TKA. Demographic data, including age, sex, obesity, tobacco use, diabetes, and osteoporosis, were collected. The complications assessed were infection and revision. Univariate and logistic regression analysis were performed and a log-rank test was used to compare infection-free survival and construct survival rates between TKA and ORIF groups.

Results: Out of 23,279 elderly patients with DFF, 1556 (6.7%) underwent primary arthroplasty. The compound annual growth rate of arthroplasty was 6.5% over the years studied. The mean age and rates of diabetes, osteoporosis, and smoking were similar between groups. The odds of arthroplasty increased for obesity (1.31, $P < 0.0001$) and female sex (1.45, $P < 0.0001$) and decreased for tobacco use (0.76, $P < 0.05$) in a univariate analysis. Logistic regression showed that only obesity demonstrated significant correlation with arthroplasty (odds ratio [OR] = 1.48). Infection rate was higher for TKA (5.3%) compared to ORIF (2.0%), with an OR of 2.74 ($P < 0.0001$). The revision rates were similar at 3.0% for TKA and 3.1% for ORIF ($P = 0.99$). The Kaplan-Meier survival curve for revision-free interval showed no significant difference between the 2 groups ($P = 0.6$) over a 2-year period, but the TKA group had a significantly worse infection-free survival ($P < 0.0001$).

Conclusion: This study encompasses the largest cohort of DFFs treated with arthroplasty to date. It highlights a rising trend of treating these fractures with TKA but with a 250% higher rate of infection compared to ORIF. Additional research is needed to identify which specific patients could benefit the most from TKA for DFF.



See the meeting website for complete listing of authors' disclosure information. Schedule and presenters subject to change.