

## **Failed Debridement and Implant Retention Does Not Compromise Success of Subsequent Staged Revision in Infected Total Knee Arthroplasty**

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**Introduction:** Prosthetic joint infection (PJI) is the leading cause of early revision following total knee arthroplasty (TKA). Debridement, antibiotics and implant retention (DAIR) is often the initial treatment of PJI; however, there is concern that a failed DAIR attempt undermines the success of future revision procedures. The aim of this study is to investigate how DAIR affects subsequent staged revisions for PJI.

**Methods:** A multicenter retrospective review was performed over a 15-year period. Treatment success was defined as implant retention without the use of long-term suppressive antibiotics. This was compared between patients who underwent a staged revision as the first procedure for PJI (staged only) and patients who failed DAIR prior to staged revision (F-Dair). Competing risk survival analysis was performed and adjusted for patient demographics, ASA score, organism type, BMI, age of prosthesis and the duration of symptoms.

**Results:** Of 293 eligible patients, 63 underwent stage revision and 230 underwent DAIR as the first procedure for PJI. 75 patients failed DAIR and underwent subsequent staged revision. The success rate of treatment was 72.0% in the F-Dair group compared to 79.4% in the staged-only group at an average follow-up of 6.2 years. On survival analysis, there was no significant difference in sub-distribution hazard ratio comparing the probability of failure in the two treatments groups (Figure 1, SHR=0.87; 95% CI 0.40-1.88; P=0.72)

**Conclusions:** This study suggested that a previously failed DAIR does not compromise the success rate of a subsequent staged revision.