

# **Management and Outcomes of Unicompartmental Knee Arthroplasty Periprosthetic Joint Infection**

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**INTRODUCTION:** Treatment of periprosthetic joint infection (PJI) following unicompartmental knee arthroplasty (UKA) includes debridement, antibiotics, and implant retention (DAIR) and conversion to total knee arthroplasty (TKA), but evidence of their efficacy is scant. We sought to determine infection-free survival of DAIR and TKA conversion in patients with PJI following UKA.

**METHODS:** We performed a retrospective cohort study of patients treated for PJI following UKA between January 2000 to August 2023. Patient demographics, type of UKA, acuity of symptoms (acute, <90 days, and chronic, >90 days), synovial white blood cell (WBC) count, type of revision surgery, and infection-free follow-up time were recorded. Statistical significance was assessed with Fisher's test.

**RESULTS:** 35 UKA infection patients were identified. The mean age was 58 and 54% were male. Medial UKA was the most common procedure (n=21, 60%) followed by lateral UKA (n=8, 23%) and patellofemoral (n=6, 17%). Most patients underwent DAIR (n=25, 71%) compared to conversion TKA (n=8, 23%), while 2 patients (6%) underwent revision UKA. The failure rate of DAIR was 36% compared to 13% for conversion TKA (p=0.38). More specifically, failure rates for arthroscopic I&D, open I&D without polyethylene exchange, open I&D with polyethylene exchange, single stage conversion TKA, and two stage conversion TKA were 60%, 33%, 27%, 20%, and 0%, respectively (p=0.56). Average follow-up time for infection-free patients was 2.3 years.

**DISCUSSION AND CONCLUSION:** We demonstrated a trend towards improved infection-free survival following conversion TKA compared to DAIR. Arthroscopic I&D had the highest failure rate and two stage conversion TKA the lowest. This may suggest cartilage debridement is critical to treat PJI in UKA. Interpretation of our findings should be tempered by lack of statistical significance, likely from insufficient power given the rarity of infected UKA. However, this is the largest cohort of patients studied with infected UKA to our knowledge.