DAIR for Acute PJI: Results of 168 Primary TKAs at Extended Follow-up of 5 Years

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INTRODUCTION:
There is renewed interest in either single or double debridement, antibiotics, and implant retention (DAIR) for acute periprosthetic joint infections (PJIs). The purpose of this study was to assess the contemporary results of single DAIRs for acute PJI after primary total knee arthroplasty (TKA) with extended follow-up.
METHODS:
We identified 168 primary TKAs treated with DAIR followed by chronic antibiotic suppression for acute PJI between 2000-2021 at a single high-volume academic institution. Acute postoperative PJI was defined as infection within four weeks of primary TKA, and acute hematogenous PJI was defined as infection occurring more than four weeks after primary TKA with symptoms for less than 21 days. The mean age was 69 years, 36% were female, and mean BMI was 35 kg/m2. PJI diagnosis was based on the 2011 MSIS criteria. Kaplan-Meier survivorship analyses were performed. Mean follow-up was 5 years.
RESULTS:
Survivorship free of reinfection was 87% at 1 year, 76 % at 2 years, and 68% at 5 years. There was no significant difference in reinfection between early postoperative and acute hematogenous PJIs (p=0.8). Reinfection were caused by the original infecting organism in 43%. BMI, host grade, and extremity grade were not predictive of reinfection (p>0.05). Median time to reinfection was 10 months. Survivorship free of any revision was 85% at 1 year, 75% at 2 years, and 66% at 5 years. Indications for revision included recurrent PJI (91%), patellar instability (5%), and other aseptic failures (4%). Mean KSS improved from 62 to 78 at 5 years (p=0.6).
DISCUSSION AND CONCLUSION: In this large series of acute PJIs after primary TKAs treated with a single DAIR, infection-free survival was 68% at 5 years. With a rigorous definition of acute PJI and careful patient selection, results are markedly improved at extended follow-up when compared to most historical series.