DAIR for Acute PJI: Results of 133 Primary Hip Arthroplasties at Extended Follow-up of 7 Years

E Bailey Terhune¹, Khaled A Elmenawi, Jessica Ann Grimm, Charles Patrick Hannon¹, Nicholas Bedard¹, Elie Berbari¹, Daniel J Berry¹, Matthew Philip Abdel¹

¹Mayo Clinic

INTRODUCTION:

There is renewed interest in single or double debridement, antibiotics, and implant retention (DAIR) for acute periprosthetic joint infections (PJIs). The purpose of this study was to assess the results of single DAIRs for acute PJI after primary hip arthroplasty.

METHODS: We identified 133 hips (114 total hip arthroplasties, 19 hemiarthroplasties) with acute PJI treated with DAIR followed by chronic antibiotic suppression between 2000-2021 at a single institution. Acute postoperative PJI was defined as infection within four weeks of primary hip arthroplasty, and acute hematogenous PJI was defined as infection occurring more than four weeks after primary hip arthroplasty with symptoms for less than 21 days. The mean age was 67 years, 42% were female, and mean BMI was 34 kg/m². PJI diagnosis was based on the 2011 MSIS criteria. Kaplan-Meier survivorship analyses were performed. Mean follow-up was 7 years. RESULTS:

Survivorship free of reinfection was 80% at 1 year, 79% at 2 years, and 77% at 5 years. There was no difference in survivorship free of reinfection between early postoperative and acute hematogenous PJIs (p=0.1). McPherson Host Grade C was predictive of reinfection (HR 5, p=0.03). Reinfection was caused by the original organism in 38% of hips. Median time to reinfection was 13 days. Survivorship free of any revision was 85% at 1 year, 83% at 2 years, and 82% at 5 years. Indications for revision included recurrent PJI (92%), dislocation (4%), and aseptic mechanical failures (4%). Mean HHS improved from 63 to 83 at 5 years (p=0.8).

DISCUSSION AND CONCLUSION: In this large series of acute PJIs after primary hip arthroplasties treated with a single DAIR, infection-free survival was 77% at 5 years. Poor host status predicted reinfection. With a rigorous definition of acute PJI, success was markedly improved at extended follow-up compared to most historical series.