



The Success of a Two-Stage Treatment Protocol for Periprosthetic Joint Infections of the Knee: Our Institutional Experience

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[Disclosures: None](#)

INTRODUCTION

- Periprosthetic joint infection (PJI) is a devastating complication following total knee arthroplasty (TKA).
- Although two-stage exchange remains the gold standard for infection eradication, outcomes may vary as pathogen profiles evolve.

PURPOSE

The purpose of this study was to evaluate the long-term results of two-stage exchange for TKA PJI and compare outcomes with historical institutional data.

METHODS

- Study Design**
 - Retrospective cohort study
 - Single academic institution
 - January 2017 – October 2023
- Inclusion Criteria**
 - Patients undergoing two-stage exchange arthroplasty for infected TKA
- Outcomes:**
- Treatment Success:
 - Infection control following completion of two-stage exchange with or without chronic suppressive antibiotic therapy.
- Treatment Failure
 - Septic revision due to initial infecting organism
 - Aseptic revision
- Statistical Analysis**
 - Chi-square analysis for risk factor assessment
 - Comparison with historical institutional cohort
 - Significance threshold: $P < 0.05$

RESULTS

- Cohort
 - Total knees included: 172
 - Mean age at reimplantation: 66 years
 - Male patients: 63%

Overall Treatment Success

Cohort	Success Rate
Contemporary	90.7% (156/172)
Historical	90.7% (68/75)

Antibiotic Suppression:

- 133/156 successful cases required no continued antibiotic therapy after reimplantation

Failure Outcomes:

- Among 16 failures:
 - 2 deaths more than 1 year after PJI treatment.
 - 8 aseptic revisions
 - 4 septic revisions
 - 2 above-knee amputations (AKAs) for persistent infection.

MDR vs. Non-MDR Organisms:

Overall Treatment Success

Organism Type	Contemporary Success Rate	Historical Success Rate
MDR	63.3% (31/49)	91.2% (31/34)
Non-MDR	77.3% (95/123)	91.3% (42/46)

RESULTS CONT.

- Risk Factor Analysis:**
- Variables not significantly associated with failure:
 - Gender, ASA class, MDR organism, Year of explant, Age, BMI
- Variables approaching significance for improved outcomes:
 - Longer antibiotic duration after reimplantation ($P = 0.067$)
 - Lower Charlson Comorbidity Index at reimplantation ($P = 0.056$)

CONCLUSIONS

- Two-stage exchange for TKA PJI demonstrated equivalent infection eradication rates in this contemporary cohort compared with historical institutional data.
- Traditional patient and organism-related risk factors were not significantly associated with outcome.
- Continued optimization of treatment strategies and ongoing surveillance of pathogen trends are needed to improve outcomes in modern PJI management.