



Management of Infected Extremity Endoprosthesis: A Systematic Review

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ABSTRACT:

Background

Endoprosthetic reconstructions have become increasingly common in the setting of significant bone loss. Indications include revision arthroplasty, trauma, and reconstruction in the setting of primary malignancies or bony metastases. Although the use of endoprostheses has several advantages, they carry a high risk of infection. The purpose of this review is to determine the success rates of surgical management of infected endoprostheses.

Methods

The authors searched databases for relevant studies and screened in duplicate. Data extracted included overall infection rate, timing of infection, follow-up, isolated pathogen and operative treatment strategy, and subsequent failure rate. The overall quality of the evidence with the Methodological Index for non-randomized studies criteria.

Results

A total of 16 studies and 647 patients met the inclusion criteria. 400 patients had operative management and reported outcomes. Failure rates of patients undergoing debridement, antibiotics, and implant retention (DAIR) were 55.1%. Failure rates of patients who underwent one-stage revision were 45.5%. Failure rates of patients undergoing two-stage revision were 27.3%. Failure occurred at 31.4 months (range, 0–228) postoperatively.

Conclusions

Rates of periprosthetic joint infection remain high in endoprosthetic reconstructions. Although DAIR procedures were found to have a low success rate, they remain a reasonable option in acute infections given the morbidity of staged revisions. There is a lack of comparative data in the current literature and the heterogeneity and low level of evidence does not allow for between group comparisons of results.