

One- or two-stage surgical revision of infected hip prosthesis: a meta-analysis

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Background and objectives

Background – The two-stage revision strategy has been claimed as being the "gold standard" for treating prosthetic hip infection. The one-stage revision strategy remains an attractive alternative option, however, its effectiveness in comparison to the two-stage strategy remains uncertain.

Objective – To compare the effectiveness of one- and two-stage revision strategies for prosthetic hip infection, using re-infection as an outcome.

Methods

Design – Systematic review and meta-analysis.

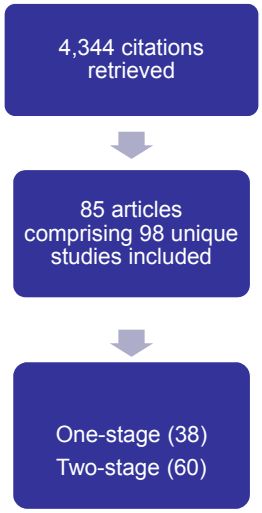
Data sources – MEDLINE, EMBASE, Web of Science, Cochrane Library, manual search of bibliographies, and email contact with investigators.

Study selection – Longitudinal studies with unselected patient populations treated by one- or two-stage revision and reporting re-infection (or recurrence) outcomes within two years of revision.

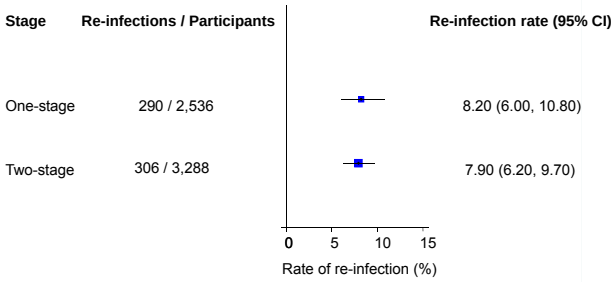
Data extraction and analysis – Two independent investigators extracted data and consensus reached with a third. Study quality assessed based on Methodological Index for Non-Randomised Studies (MINORS). Rates of re-infection were aggregated using random-effect models after arcsine transformation. Rates of re-infection grouped by study level characteristics.

Results

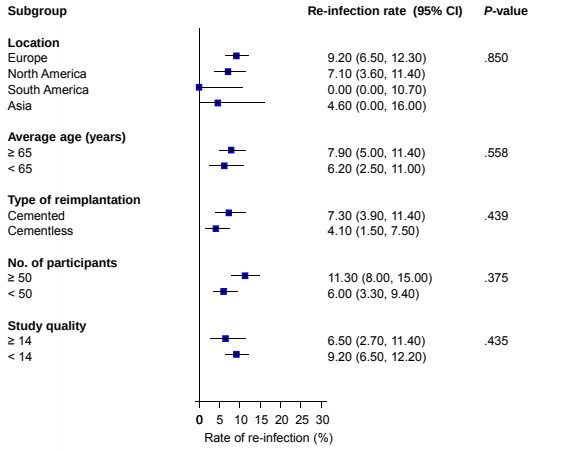
Study selection



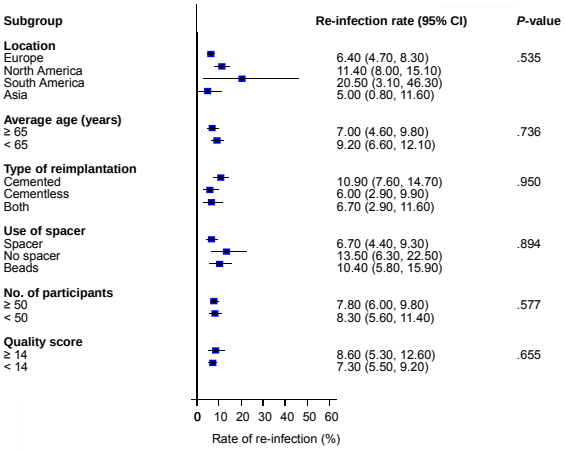
Rates of re-infection in pooled analyses



Rates of re-infection in one-stage studies, by study level characteristics



Rates of re-infection in two-stage studies, by study level characteristics



Conclusions

- **Similar rates of re-infection of approximately 8% after one- or two-stage hip revision for prosthetic infection in unselected patients.**
- **Re-infection rates remained generally similar when grouped by study level characteristics.**
- **One-stage revision surgery may be an alternative option for treating prosthetic hip infection.**
- **In the absence of a rigorous clinical trial, more detailed analyses requires collaborative pooling of individual participant data (INFORM Global Collaboration)**

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