



PP-009

Rates and causes of revision of tumor endoprostheses: a review of the literature and meta-analysis

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Introduction: Endoprostheses have become the preferred option for reconstruction after bone tumor reconstruction of the proximal femur, distal femur, and proximal tibia. However, revision rates remain higher than that of conventional prosthesis. We conducted a review and meta-analysis of tumor endoprostheses to estimate the rates of revision for mechanical, infectious, and tumor reasons.

Methods: A literature search was conducted on PubMed (Medline) with an extension of the following search terms: tumor, endoprosthesis, and location (femur or tibia). The search and abstraction of the data was performed by two independent reviewers. Random effect models were used for pooled estimates.

Results: The search included 31 studies from 21 different centers. A total of 3227 patients were included. 48 series could be isolated from these 31 studies: 11 proximal femur (569 patients); 21 distal femur (1789 patients); and 16 proximal tibia (919 patients). The pooled estimate for revision for any cause was 22% (95% CI: 19 - 25); it was 13% for proximal femur, 24% for distal femur, and 26% for proximal tibia (figure 1). The pooled estimate for revision for mechanical reason was 13% (95% CI: 10 - 15); it was 9% for proximal femur, 14% for distal femur, and 13% for proximal tibia. The pooled estimate for revision for infection was 9% (7 - 11); it was 2% for proximal femur, 9% for distal femur, and 14% for proximal tibia. The pooled estimate for infection (with or without revision) was 11%. It was 7% for proximal femur, 10% for distal femur, and 17% for proximal tibia. The pooled estimate for local recurrence was 7%. It was 7% for proximal femur, 6% for distal femur, and 8% for proximal tibia. When comparing designs for knee endoprostheses, there was no effect of fixation (cemented or uncemented), or hinge mechanism (fixed or rotating); there was however a significant difference according to modularity with custom-made implants showing worse results.

Conclusions: One patient in five will need a revision during followup. Endoprostheses located at the proximal femur do better than those located around the knee. Tibial endoprostheses show worse infection rates.

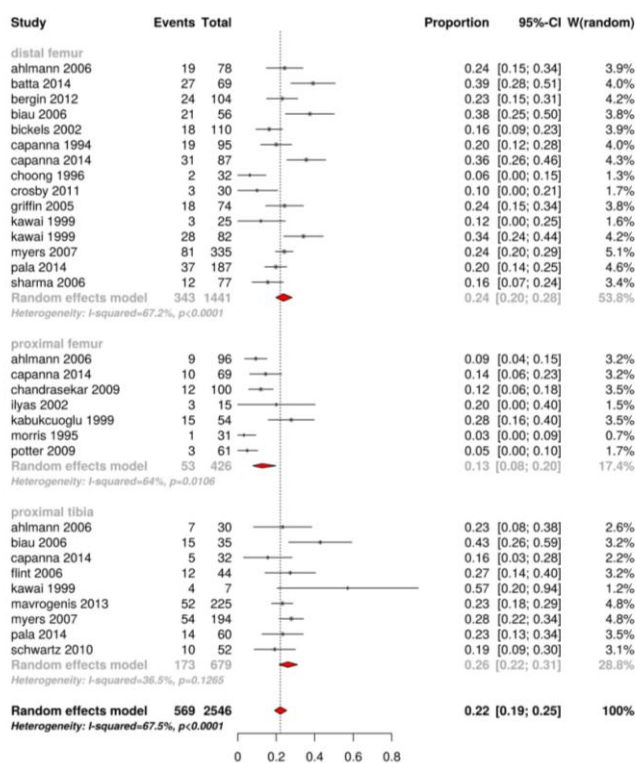


Figure 1