

Appendix

Statistical Analysis

The registry uses Kaplan-Meier estimates of survivorship to describe the time to the first revision of an arthroplasty, with censoring at the time of death or closure of the database at the time of analysis. The unadjusted cumulative percentage of revisions after primary THA, with an accompanying 95% CI, was calculated using unadjusted pointwise Greenwood estimates. HRs were calculated using Cox proportional-hazards models, adjusting for age, sex, fixation, and head size, and were used to make statistical comparisons of the revision rates between groups. The assumption of proportional hazards was checked analytically for each model; if the interaction between the predictor and the log of the postoperative time was significant in the standard Cox model, then a time-varying model was used. Time points were iteratively chosen until the assumption of proportionality was met, and the HRs were calculated for each selected time period. Patients with bilateral THA and different types of polyethylene were counted as having a unilateral operation in each analysis group.

All tests were 2-tailed at the 5% level of significance. Statistical analysis was performed using SAS software, version 9.3 (SAS Institute).