

Cancer incidence and cause-specific mortality among patients with metal-on-metal hip replacements in Finland: a population-based study

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Background and purpose

The aim of the study was to assess risk of death and to update the risk of cancer related to metal-on-metal hip replacements.

Patients and methods

A cohort of 10,728 metal-on-metal hip replacement patients and a reference cohort of 18,235 conventional total hip replacement patients were extracted from the Finnish Arthroplasty Register from the years 2001 to 2010. Data on incident cancer cases and causes of death up to 2011 were achieved from the Finnish Cancer Registry and Statistics Finland. The relative risk of cancer and death were expressed as standardised incidence and mortality ratios (SIR, SMR). SIR/SIR- and SMR/SMR-ratios, and Poisson regression model were used to compare cancer risk and risk of death between cohorts.

Results

The overall cancer risk of the metal-on-metal cohort was not increased compared to that of the non-metal-on-metal cohort (RR 0.91, 95% CI 0.82 to 1.02, $p = 0.1$). The risk of soft tissue sarcoma and basalioma in the metal-on-metal cohort was higher than in the non-metal-on-metal cohort (SIR/SIR ratio 2.55, 95% CI 1.02 to 6.36 and 1.26, 95% CI 1.07 to 1.49, respectively). The overall risk of death in the metal-on-metal cohort was decreased compared to that in the non-metal-on-metal cohort (RR 0.78, 95% CI 0.69 to 0.88, $p < 0.001$).

Interpretation

Overall risk of cancer or risk of death is not increased after metal-on-metal hip replacement. However, metal-on-metal hip implants should not be considered safe until data with longer follow-up time are available.