



O5:103

Retrospective Evaluation of the Incidence of Early Periprosthetic Infection with Silver-Treated Custom Megaprotheses in High Risk Patients: Case Control Study

Hazem Wafa¹, Robert Grimer¹, Simon Carter¹, Roger Tillman¹, Adesegun Abudu¹, Lee Jeys¹

¹ The Royal Orthopaedic Hospital, United Kingdom

Objective: To compare the incidence of early periprosthetic infection in high risk patients who have undergone endoprosthetic reconstruction using the Agluna silver-treated Stanmore custom megaprotheses with a control group who received a non Agluna-treated Stanmore implants.

Methods: We conducted a case control study recruiting 85 patients with Agluna-treated implants and 85 controls. There were 106 males and 64 females with a mean age of 42.2 years (range, 18.4 to 90.4 years) at the time of implant insertion. Fifty patients (29.4%) received their implants for primary reconstruction, seventy nine (46.5%) for one-stage revision, while the remaining forty one patients (24.1%) had a two-stage revision surgery for periprosthetic infection. Endoprosthetic replacements were of the distal femur (n=63), proximal tibia (n=36), proximal femur (n=19), hemipelvis (n=16), total femur (n=6), proximal humerus (n=6), distal humerus (n=2), distal radius (n=2), intercalary (n=12), while eight patients had combined femoral and tibial implants.

Results: All patients were followed up for a minimum of 6 months. Data collected during the postoperative period, and at 3, 6, 9, and 12 month post-operative visits was analyzed. The overall postoperative infection rates of the silver and control groups were 12.9% and 23.5% respectively ($p < 0.01$). Eight of the eleven infected prostheses (72.7%) in the silver group were successfully treated with debridement, antibiotics, and implant retention (DAIR) as compared to only five of the twenty infected implants (25%) in the control group ($p < 0.01$). Three patients with silver-treated implants (3.5%) and fifteen of the control group (17.6%) had chronic periprosthetic infection necessitating device removal, amputation or chronic antibiotic suppression ($p < 0.01$).

Eight of the fifteen patients (53.3%) with positive intraoperative cultures in the control group had postoperative infection versus only two of the fifteen patients (13.3%) in the silver group ($p < 0.01$). None of those eight patients in the control group had their infection resolved with DAIR procedure. The overall success rates in controlling infection with two-stage revisions in the silver and control groups were 80% and 52.4% respectively ($p < 0.01$).

Conclusions: The Agluna-treated megaprotheses are associated with lower rates of early periprosthetic infection. These silver-treated implants are particularly useful in two-stage revisions for periprosthetic infection and in those patients with incidental positive cultures at the time of implant insertion. The DAIR procedure appears to be more successful with this type of implants.

E-mail (main author): hazem.wafa@nhs.net