

**FC-087****Silver ions levels in body fluids and clinical results in silver-coated megaprotheses: a 1 to 4 years follow-up**

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Introduction: In recent years silver coating of orthopaedic implants was introduced to reduce infection rate due to silver antibacterial effect. Considering the high risk of infection in orthopaedic oncological reconstructions, this innovation could be particularly interesting for megaprotheses, but few data are reported in Literature.

Materials and Methods: From 2010 to November 2014 a modified MegaC System megaprosthesis with an innovative peripheral silver-added layer of titanium alloy ("Porag") was implanted in 37 patients after previous infection (23) or at high risk for infection for local or general conditions (14). Initial surgery had been performed for oncological diseases in 16 patients, for sequelae of joint replacement or trauma surgery in 21. Previous infection followed arthroplasty (16) or trauma surgery (7); a two-stage treatment was performed in 16 cases, one-stage in 7. A proximal femur replacement was performed in 15 patients, distal femur replacement in 14, total femur in 2, knee arthrodesis in 6.

Results: Follow-up ranged from 2 to 50 months with 21 patients presenting a follow-up longer than 1 year. No occurrence or recurrence of infection was detected so far. Two patients are under monitoring as they developed a fistula with persistent negative cultures (one healed, one is still under treatment). A stem revision was performed in one patient at two years from surgery. No clinical evidence of argyria was detected. No local or systemic side effects related to silver were detectable.

Levels of 0,1 to 7,5, 0.02 to 5 and 0.1 to 0.7 µg/L in urine and levels of 0.24 to 9, 0.8 to 20 and 0.3 to 3.7 µg/L in blood were detected respectively at one year, two years and three years from surgery. Average blood levels were higher in the first 3 to 6 months after surgery.

Conclusion: In our series promising preliminary results of silver coating in megaprotheses were observed for infection control in a high risk group of patients, mostly affected by previous infections. No side-effects were detected. The circulating silver levels observed confirm both the persistence of silver coating activity after three years and at the same time the safety of silver-coated implants. Longer follow-up and larger series are needed.