

## **Peri-prosthetic infections after mega-prosthesis reconstruction result in high risk for amputation and persistent infection**

Christina Berger<sup>1,2</sup>, Catharina Parai<sup>1,2</sup>, Jonatan Tillander<sup>3</sup>, Peter Bergh<sup>1,2</sup>, David Wennergren<sup>1,2</sup>, Helena Brisby<sup>1,2</sup>

<sup>1</sup> Ortopeden, Sahlgrenska Universitetssjukhuset, <sup>2</sup> Inst. för kliniska vetenskaper, Sahlgrenska Akademin, Göteborgs universitet, <sup>3</sup> Institutionen för biomedicin, Avdelningen för infektionssjukdomar, Göteborgs universitet

A periprosthetic joint infection is a feared complication after mega-prosthesis reconstruction of large bone defects. The current study investigates how patients operated with a mega-prosthesis due to sarcoma, metastasis, or trauma, are affected by a deep infection focusing on re-operations, risk for persistent infection, arthrodesis or subsequent amputation. Time to infection, causative bacterial strains, mode of treatment and length of hospital stay are also reported.

A total of 114 patients with 116 prostheses were evaluated, in median 7.6 years (range 3.8-13.7) after surgery, of which 35 (30%) were re-operated due to a peri-prosthetic infection. Of the infected patients, the prosthesis was still in place in 51%, 37% were amputated and 9% had an arthrodesis. In 26% the infection was persistent at follow up. The mean total length of hospital stay was 68 (median 60) days and the mean number of reoperations was 8.9 (median 6.0). The mean length of antibiotic treatment was 340 days (median 183). Coagulase negative staphylococci and *Staphylococcus aureus* were the most frequent bacterial agents isolated in deep cultures. No MRSA or ESBL-producing Enterobacterales were found but vancomycin resistant *Enterococcus faecium* was isolated in one patient.

In summary there is a high risk for peri-prosthetic infection in mega-prostheses relatively often resulting in persistent infection or amputation.