

Infection after Intracapsular Femoral Neck Fracture – Does Antibiotic-Loaded Bone Cement Reduce Infection Risk after Hemiarthroplasty and Total Hip Arthroplasty? Data from the German Arthroplasty Registry

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INTRODUCTION:

A longitudinal approach based on registry data investigating the rate of periprosthetic joint infection (PJI) following hemiarthroplasty (HA) and total hip arthroplasty (THA) with cemented and uncemented fixation after intracapsular femoral neck fracture is lacking in the literature. The aim of this investigation was to compare risk of infection in both cemented and uncemented hemiarthroplasty as well as total hip arthroplasty following femoral neck fracture.

METHODS:

Data collection was performed using the German Arthroplasty Registry (EPRD) In HA and THA following femoral neck fracture. Fixation method was divided into cemented and uncemented prostheses and paired according to age, sex, body mass index (BMI), and the Elixhauser score using Mahalanobis distance matching.

RESULTS:

Overall in 13,612 cases of intracapsular femoral neck fracture, with 9,110 (66.9 %) HAs and 4,502 (33.1 %) THAs were analyzed. Infection rate in HA was significantly reduced in cases with use of antibiotic-loaded cement compared to uncemented fixated prosthesis ($p=0.013$). In patients with THA no statistical difference between cemented and uncemented prosthesis was registered, however after one year 2.4 % of infections were detected in uncemented and 2.1 % in cemented THA. In the subpopulation of HA after one year 1.9 % of infections were registered in cemented and 2.8 % in uncemented HA. BMI ($p=0.001$) and Elixhauser-Comorbidity-Score ($p<0.003$) were identified as risk factors of PJI, while in THA also cemented prosthesis demonstrated within the first 30 days an increased risk (HR=2.73; $p=0.010$).

DISCUSSION AND CONCLUSION:

The rate of infection after intracapsular femoral neck fracture was significantly reduced in patients treated by antibiotic-loaded cemented hemiarthroplasty. In particular for patients with multiple risk factors for the development of a PJI the usage of antibiotic-loaded bone cement seems to be a reasonable procedure for prevention of infection.

