Wound Infections Following Implant Removal Below the Knee: The Effect of Antibiotic Prophylaxis: Results of the WIFI Trial, A Multicenter Randomized Controlled Trial

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Purpose: Following clean surgical procedures, the rate of postoperative wound infection (POWI) should be less than ~2%. However, a 12.2% infection rate has been reported following implant removal after foot, ankle, and lower leg fractures. The aim of this study was to evaluate the effect of a single dose of antibiotic prophylaxis on the incidence of wound infection following implant removal below the knee.

Methods: This study was a multicenter double-blind placebo controlled randomized trial in patients undergoing implant removal following a foot, ankle, or lower leg fracture. Patients were randomized between a single dose of intravenous cephalosporin and a placebo. Primary outcome was POWI. With 2 × 250 patients, a reduction in POWI rate from 10% to 3.3% could be detected.

Results: 470 patients were available for analysis with 228 patients in the intervention group and 242 patients in the control group. 66 patients developed a POWI (14.4%). In the intervention group 30 patients (13.2%) suffered from POWI versus 36 (14.9%) in the control group (P = 0.599). The only factor significantly associated with the development of POWI was use of alcohol (P = 0.048). No other possible risk factors were identified.

Conclusion: No evidence of treatment efficacy has been shown and we therefore believe there is no place for routine administration of a single dose of antibiotic prophylaxis prior to implant removal below the level of the knee.