

**P2725 High success rate of immunocompromised patients with prosthetic joint infections undergoing 2-stage exchange treated by continuous antibiotic therapy**

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**Background:** Prosthetic joint infections can be successfully managed by two-stage exchange. Success rate of this procedure is related to many factors including patient immunologic status and schedule of antibiotic treatment. Aim of this study was to evaluate the cure rate of immunocompromised patients undergoing reimplantation after an antibiotic free period or receiving continuous antibiotic therapy.

**Materials/methods:** This observational study included patients with PJI undergoing 2-stage exchange. Group A patients did not discontinue antibiotic treatment pre-reimplantation; in Group B patients, antibiotic treatment was followed with 2 weeks of holiday antibiotic period pre-reimplantation. Only patients with persistent disappearance of clinical signs of infection and inflammatory markers normalization underwent reimplantation.

Immunocompromised were those reporting any condition associated with impaired immune response such as diabetes, liver cirrhosis, autoimmune diseases (i.e. rheumatoid arthritis), or receiving immunosuppressive treatments (i.e. steroids, TNF alpha inhibitors). We defined cure as absence of recurrence for 96 weeks post-reimplantation. Statistical analyses were performed using Mann-Whitney U test, Fisher's exact test, and multivariate analysis.

**Results:** We evaluated 196 patients with PJI (median age, 66 years (interquartile range 59-72), 91 (46%) males). Comorbidity was reported in 77 (39%), and microbiological evidence in 164 (84%). *Staphylococcus aureus* was isolated in 63/164 (38%) patients; coagulase-negative staphylococci were isolated in 71/164 (43%). Favorable outcome was achieved for 169 (86%) patients (91% and 79% in Groups A and B, respectively). No immunocompromise (odds ratio (OR) 2.73, 95% confidence interval (CI) 1.3-7.3,  $p=0.04$ ), a positive culture (OR 3.96, 95% CI 1.55-10.19,  $p=0.02$ ), and no antibiotic discontinuation (OR 3.32, 95% CI 1.3-8.44,  $p=0.02$ ) predicted favorable outcome using multivariate analysis. After cure rate was analysed in the 77 patients who were immunocompromised, we found that cure rate was higher in 46 immunocompromised patients receiving continuous therapy than in 31 immunocompromised patients observing a holiday antibiotic period pre-reimplantation (41/46 vs. 20/31;  $\chi^2=5.4$ ,  $p=0.02$ ). Therefore, the cure rate in respect to continuous therapy was not different in immunocompetent patients (63/68 vs. 44/51;  $\chi^2=1.3$ ,  $p=0.2$ ).

**Conclusions:** Continuous therapy, no immunocompromise, and positive culture predicted a favourable outcome in PJI undergoing 2-stage exchange. Continuous therapy has the greatest efficacy in immunocompromised patients.

