

Session: P087 Progress in bone and joint infections

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## **An assessment of prosthetic joint infection risk: a single-centre analysis**

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### **Background:**

Arthroplasty remains an effective surgical intervention that improves quality of life. In Scotland over the last decade there has been a 41% increase in the number of cases of both knee and hip arthroplasty, with 15,781 cases being performed in 2015.

Prosthetic joint infection (PJI) albeit rare is an important complication of prosthetic joint implantation associated with significant morbidity and mortality.

Identification of patients as high risk for PJI would allow risk stratification at pre-operative assessment, inform clinical decision making and increase the index of suspicion allowing prompt diagnosis and effective management to be initiated.

The aim of our study was to review and risk-assess the patient population undergoing prosthetic joint implantation at a large Glasgow teaching hospital.

### **Material/methods:**

A retrospective analysis was performed over an 8-month period extending from May to December 2015. Patients were identified using our electronic clinical record system (Clinical Portal) and laboratory information management system (Telepath). Any patient who had intra-operative samples sent for standard bacterial investigation for either a presumed or confirmed infection involving a knee or hip arthroplasty was included.

An assessment of risk was based on the proposed Mayo PJI baseline risk score. Prior operation on the index joint, prior arthroplasty, body mass index (BMI), immunosuppression, ASA score, and procedure duration was measured at the time of surgery. Points were assigned for the presence of each factor in accordance with the above Mayo scoring system. The 30 day mortality and all cause mortality rate were also calculated.

### **Results:**

A total of 93 patients over the 8-month period were identified. No statistical difference in the number of males and females was observed for the study population. Approximately two-thirds of patients were aged 65 years or older. 75% of cases related to hip arthroplasty.

Of these patients, 34 (37%) had undergone a prior operation on the index joint. 28 (30%) patients had a recorded BMI of  $\geq 30$ . 11 (12%) patients had diabetes mellitus and 5 (5%) patients had rheumatoid arthritis. 5 patients had a history of chronic kidney disease.

The mean baseline risk score for the study population was 4 (out of a total of 13 points), with 8 (9%) patients having a score of  $\geq 7$ .

The 30-day mortality rate for the study population was 3%, with the case fatality rate being calculated as 9%.

### **Conclusions:**

PJI remains a significant complication of prosthetic joint implantation, with the rate of arthroplasty continuing to increase over the last decade.

This study provides an insight into the risk factors and characteristics of our patient population and could provide a robust means to assess for PJI risk. Prospective identification of patients at risk would importantly allow both risk stratification and targeted prevention strategies