Clinical characteristics of patients with polymicrobial septic arthritis

Abstract

***Purpose*:** Little is known about the incidence, risk factors, clinical characteristics and outcomes of patients with polymicrobial SA (PMSA). We aimed to determine the unique characteristics of patients with PMSA by comparing them to patients with monomicrobial SA (MMSA).

Methods: We conducted a retrospective cohort study of patients 18 years and older admitted to a single tertiary care medical center, between 1998-2015 , with surgically-treated culture-positive SA affecting one or more joints. Patients were separated into two groups by the presence of one (MMSA) or more organisms (PMSA).

Results: 441 patients with MMSA and 47 with PMSA were identified. Prior history of SA was more common among the PMSA group (31.9% vs. 18.6%; p=0.03) as well as higher rates of prosthetic joint involvement (48.9% vs. 36.1%; p=0.06). Patients with PMSA were sicker with higher rates of shock at presentation (14.9% vs. 5.5%; p=0.02), intensive care unit admissions (39.1% vs. 18%; p<0.001), and longer mean length of stay of stay (16.1 vs. 10.9 days; p <0.001). The most prevalent pathogens in the PMSA group were *coagulase-negative Staphylococcus* (31%) followed by *methicillin-sensitive Staphylococcus Aureus* (29%) and *Enterococcus* (24%).

Conclusion: To our knowledge this is the first study to determine the clinical and microbiologic profiles of patients with PMSA. Important differences were noted such as more frequent involvement of atypical and prosthetic joints in PMSA. PMSA should be suspected in patients with these clinical features, and broad-spectrum antibiotics should be considered as these patients appear to be sicker and have worse outcomes.

Key words: Septic Arthritis, Polymicrobial Infection, Prosthetic Joint, *Staphylococcus Aureus*