Staphylococcus aureus bacteremia (SAB) is a high-risk infection and feared complication related to hemodialysis. This study aimed to investigate incidence and risk factors for SAB depending on hemodialysis access type” Chaudry et al (2019).

Abstract:

INTRODUCTION: Staphylococcus aureus bacteremia (SAB) is a high-risk infection and feared complication related to hemodialysis. This study aimed to investigate incidence and risk factors for SAB depending on hemodialysis access type.

METHODS: The Danish National Registry on Regular Dialysis and Transplantation was used to identify patients from January 1, 1996 to December 31, 2011 with end-stage kidney disease. Patients were followed until death, the first episode of SAB, or end of study (December 31, 2011). Independent risk factors were assessed by multivariable Poisson regression with time-updated exposure variables.

FINDINGS: Total of 9997 patients were included. The initial modality of renal replacement therapy was hemodialysis in 6826 patients and peritoneal dialysis in 2882 patients; 289 patients had preemptive kidney transplantation. SAB occurred in 1278 patients (12.8%). The incidence rate of SAB declined after 90 days and leveled off after 270 days in hemodialysis, peritoneal dialysis, and kidney transplanted. As compared to peritoneal dialysis, the adjusted rate ratio (RR) for SAB was 7.42 (95% CI 5.63-9.79) in uncuffed central venous catheter
Increased risk of Staphylococcus aureus bacteremia in hemodialysis

(CVC), 5.68 (95% CI 4.39-7.36) in cuffed CVC, 4.43 (95% CI 2.10-9.53) in arteriovenous graft, and 3.40 (95% CI 2.79-4.15) in arteriovenous fistula. SAB risk did not differ between uncuffed and cuffed CVC. The risk of SAB was increased during the first three months of renal replacement therapy especially for CVC (RR 11.37 [95% CI 7.09-18.22]) compared with peritoneal dialysis. Diabetes mellitus (RR 1.35 [95% CI 1.20-1.51]) and male sex (RR 1.15 [95% CI 1.03-1.29]) were also associated with SAB.

DISCUSSION: Patients on hemodialysis had a high incidence rate of SAB, particularly those undergoing hemodialysis via CVC. SAB risk was comparable for cuffed and uncuffed CVC. Diabetes mellitus, male sex, and the first three months in renal replacement therapy were independently associated with SAB.

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