

## Haemodialysis and CLABSI

### Abstract:

**Introduction:** Catheter-related bloodstream infection (CRBSI) and catheter colonization (CC) are two complications among haemodialysis (HD) patients that lead to increased morbidity and mortality. This study aims to evaluate the prevalence of CRBSI and CC among HD patients registered at Universiti Kebangsaan Malaysia Medical Centre and to identify the factors involved by focusing on the demographic profile of the patients as well as their clinical characteristics and outcomes.

**Method:** This is a retrospective study of end-stage renal disease patients with suspected CRBSI during the period from 1 January 2016 to 31 December 2018. Data on patients who fulfilled the blood culture criteria for CRBSI and CC diagnosis were further analysed for clinical manifestations, comorbidities, history of dialysis, catheter characteristics, and microbiological culture results. The outcomes of CRBSI and CC were also assessed. **Findings.** In the 3-year period under study, there were 496 suspected CRBSI cases with a total of 175 events in 119 patients who fulfilled the inclusion criteria. During that time, the percentage of patients who experienced CRBSI and CC was 4.2% and 4.8%, respectively. The majority of the cohort consisted of male (59.4%), Malay ethnicity (75%), and patients on a tunneled dialysis catheter (83%). Patients who were fistula naïve and had an internal jugular catheter were more common in the CRBSI group than in the CC group. The predominant microorganisms that were isolated were Gram-positive organisms. In terms of clinical presentation and outcome, no differences were found between the CRBSI and CC groups. Patients with Gram-negative bacteraemia, high initial c-reactive protein, and catheter salvation were likely to have poor outcomes. Recurrence of CRBSI occurred in 31% of the cohort. Neither catheter salvation nor antibiotic-lock therapy were associated with the recurrence of CRBSI. On the other hand, the femoral vein catheter site was associated with risk of recurrence. The overall mortality rate was 1.1%. **Discussion.** From the analysis, it was concluded that clinical assessment and positive culture are crucial in diagnosing CRBSI with or without peripheral culture. This study provides essential information for the local setting which will enable healthcare providers to implement measures for the better management of CRBSI.

### Reference:

Shahar S, Mustafar R, Kamaruzaman L, Periyasamy P, Pau KB, Ramli R. Catheter-Related Bloodstream Infections and Catheter Colonization among Haemodialysis Patients: Prevalence, Risk Factors, and Outcomes. *Int J Nephrol*. 2021 Jun 19;2021:5562690. doi: 10.1155/2021/5562690. PMID: 34249377; PMCID: PMC8238579.

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