

This study evaluated the impact of delayed central venous catheter (CVC) removal on clinical outcomes in patients with Gram-negative CRBSI” Lee et al (2018).

Summary:

Background: Gram-negative bacteria are increasingly the cause of catheter-related bloodstream infection (CRBSI), and the prevalence of multi-drug-resistant strains is rising rapidly. This study evaluated the impact of delayed central venous catheter (CVC) removal on clinical outcomes in patients with Gram-negative CRBSI.

Methods: Between January 2007 and December 2016, patients with Gram-negative bacteraemia and CVC placement, from two tertiary care hospitals, were included retrospectively. Cases with CVC removal more than three days after onset of bacteraemia or without CVC removal were classified as having delayed CVC removal.

Results: In total, 112 patients were included. Of these, 78 had CRBSI (43 definite and 35 probable) and 34 had Gram-negative bacteraemia from another source (non-CRBSI). Enterobacteriaceae were less common pathogens in patients with CRBSI than in patients with non-CRBSI (11.5% vs 41.3%; $P < 0.001$). Delayed CVC removal was associated with increased 30-day mortality (40.5% vs 11.8%; $P = 0.01$) in patients with Gram-negative CRBSI; this was not seen in patients with non-CRBSI (25.0% vs 14.3%; $P > 0.99$). Delayed CVC removal, multi-drug-resistant (MDR) Gram-negative bacteraemia (OR 6.3) and chronic renal failure (OR 11.1) were associated with 30-day mortality in patients with CRBSI. The protective effect of early CVC removal on mortality was evident in the MDR group (48.3% vs 18.2%; $P = 0.03$), but not in the non-MDR group (11.1% vs 0%; $P = 0.43$).

Conclusion: CVCs should be removed early to improve clinical outcomes in patients with Gram-negative CRBSI, especially in settings where MDR isolates are prevalent.

Reference:

Lee, Y-M., Moon, C., Kim, Y.J., Lee, H.J., Lee, M.S. and Park, K-H. (2018) Clinical impact of delayed catheter removal for patients with central-venous-catheter-related Gram-negative bacteraemia. *The Journal of Hospital Infection*. 99(1), p.106-113.



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