



Outcomes are superior for catheters impregnated with chlorhexidine/silver sulfadiazine or other antibiotics than for standard catheters in preventing CRBSIs and catheter colonization under bundles” Wang et al (2018).

Abstract:

Background: Catheter-related blood-stream infections (CRBSIs) are the most common complication when using central venous catheters (CVCs). Whether coating CVCs under bundles could further reduce the incidence of CRBSIs is unclear. We aimed to assess the effectiveness of implementing the use of bundles with antimicrobial-coated CVCs for preventing catheter-related blood-stream infections.

Methods: In this systematic review and network meta-analyses, we searched the Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library in addition to the EMBASE, MEDLINE, CINAHL, and Web of Science databases for studies published before July 2017. The primary outcome was the rate of CRBSIs per 1000 catheter-days, and the secondary outcome was the incidence of catheter colonization.

Results: Twenty-three studies revealed significant differences in the rate of CRBSIs per 1000 catheter-days between antimicrobial-impregnated and standard CVCs (RR 0.70, 95% CI 0.53-0.91, $p = 0.008$). Thirty-three trials were included containing 10,464 patients who received one of four types of CVCs. Compared with a standard catheter, chlorhexidine/silver

sulfadiazine- and antibiotic-coated catheters were associated with lower numbers of CRBSIs per 1000 catheter-days (ORs and 95% CIs: 0.64 (0.40–0.955) and 0.53 (0.25–0.95), respectively) and a lower incidence of catheter colonization (ORs and 95% CIs: 0.44 (0.34–0.56) and 0.30 (0.20–0.46), respectively).

Conclusions: Outcomes are superior for catheters impregnated with chlorhexidine/silver sulfadiazine or other antibiotics than for standard catheters in preventing CRBSIs and catheter colonization under bundles. Compared with silver ion-impregnated CVCs, chlorhexidine/silver sulfadiazine antiseptic catheters resulted in fewer cases of microbial colonization of the catheter but did not reduce CRBSIs.

Full Text

Reference:

Wang, H., Tong, H., Liu, H., Wang, Y., Wang, R., Gao, H., Yu, P., Lv, Y., Chen, S., Wang, G., Liu, M., Li, Y., Wang, C. (2018) Effectiveness of antimicrobial-coated central venous catheters for preventing catheter-related blood-stream infections with the implementation of bundles: a systematic review and network meta-analysis. *Annals of Intensive Care*. June 15th. .

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