Central line associated bloodstream infections (CLABSI) often result from intraluminal microbial colonization and are associated with morbidity, mortality, and substantial costs. The use of antimicrobial catheter lock solutions may reduce the incidence of CLABSI” Rijnders et al (2018).

Abstract:

BACKGROUND: Central line associated bloodstream infections (CLABSI) often result from intraluminal microbial colonization and are associated with morbidity, mortality, and substantial costs. The use of antimicrobial catheter lock solutions may reduce the incidence of CLABSI.

METHODS: Patients undergoing hemodialysis through a prevalent central venous catheter (CVC) were randomly assigned to have their CVC locked between dialysis sessions with an antimicrobial catheter lock solution containing trimethoprim 5 mg/mL, Ethanol 25% and Ca-EDTA 3% (Investigational Medical Device, IMD) or heparin 5,000 U/mL (Active Control Heparin, ACH). Exit site care was standardized by protocol-driven use of skin antiseptics and occlusive dressings. The composite primary endpoint consisted of the incidence of CLABSI and the use of intra-catheter thrombolytic treatment (TT). Given the viscosity and odor of the IMD, blinding was impossible. Therefore, the incidence of CLABSI was adjudicated by a blinded endpoint committee.
RESULTS: 270 patients on hemodialysis were enrolled and followed for a total of 43,738 CVC days. Despite the low CLABSI incidence of 0.41/1,000 CVC days in patients randomized to ACH, the IMD further reduced the incidence 4.56-fold to 0.09/1,000 CVC days (P<0.03). The product was well tolerated, and the frequency and severity of adverse events were comparable between groups. Intracatheter instillation of thrombolytics was more frequent in patients receiving the IMD (12% ACH, 40% IMD; P<0.001) but rates of catheter removal did not differ (13% in ACH and 11% in IMD). Overall dialysis adequacy was comparable between groups. CONCLUSIONS: In patients on chronic hemodialysis, a trimethoprim, ethanol and Ca-EDTA Lock solution significantly reduced the incidence of CLABSI.

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