



Cathasept significantly reduced tunneled hemodialysis catheter colonization, but the reduction in CRBSIs was not statistically significant, and it was associated with more thrombotic complications” Kanaa et al (2015).

Reference:

Kanaa, M., Wright, M.J., Akbani, H., Laboi, P., Bhandari, S. and Sandoe, J.A. (2015) Cathasept Line Lock and Microbial Colonization of Tunneled Hemodialysis Catheters: A Multicenter Randomized Controlled Trial. American Journal of Kidney Diseases. June 30th. .

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Abstract:

**BACKGROUND:** Catheter-related bloodstream infections (CRBSIs) cause morbidity and mortality in hemodialysis (HD) patients. Cathasept (tetra-sodium EDTA) solution has antimicrobial and anticoagulant activities.

**STUDY DESIGN:** Multicenter prospective randomized controlled study.

**SETTING & PARTICIPANTS:** 117 maintenance HD patients with confirmed uncolonized tunneled HD catheters from 4 HD centers.

**INTERVENTION:** Patients were randomly assigned to receive Cathasept 4% locks (Cathasept group) or stayed with heparin 5,000 U/mL locks (heparin group), filled thrice weekly according to catheter lumen volume until the catheter was removed or for a maximum of 8 months.

**OUTCOMES:** Primary outcome was clinically significant microbial colonization of the catheter, defined as a through-catheter quantitative blood culture yielding  $\geq 1,000$  colony-forming units/mL of bacteria or yeast. Secondary outcomes included CRBSI rate, catheter patency, and biomarkers of inflammation and anemia.

**MEASUREMENTS:** Weekly through-catheter quantitative blood culture, high-sensitivity C-reactive protein fortnightly, and full blood count and ferritin monthly.

**RESULTS:** Incidence rates of catheter colonization were 0.14/1,000 catheter-days in the Cathasept group and 1.08/1,000 catheter-days in the heparin group (incidence rate ratio, 0.13; 95% CI, 0.003-0.94;  $P=0.02$ ). CRBSI rates were 0.28/1,000 catheter-days in the Cathasept group and 0.68/1,000 catheter days in the heparin group (IRR, 0.40; 95% CI, 0.08-2.09;  $P=0.3$ ). The proportion of dialysis sessions with achieved prescribed blood flow rate was significantly lower in the Cathasept group (66.8% vs 75.3%;  $P<0.001$ ), with more patients requiring thrombolytic locks or infusions to maintain catheter patency (22 vs 9;  $P=0.01$ ). Mean high-sensitivity C-reactive protein level was  $11.6\pm 5.3$  (SE) mg/L lower for patients in the heparin group ( $P=0.03$ ). Anemia marker levels were similar in both groups.

**LIMITATIONS:** Study was underpowered to assess effect on CRBSI, terminated early due to slow recruitment, and not double blinded.

**CONCLUSIONS:** Cathasept significantly reduced tunneled hemodialysis catheter colonization, but the reduction in CRBSIs was not statistically significant, and it was associated with more thrombotic complications. Its safety profile was comparable to heparin lock solution.

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