

We evaluated the safety and efficacy of a novel non-antibiotic catheter lock solution for the prevention of CLABSI” Chaftari et al (2017).

Abstract:

Background: For long-term central lines (CL), the lumen is the major source of central line associated bloodstream infections (CLABSI). Current standard of care for maintaining catheter patency includes flushing the CL with saline or heparin. Neither agent has any antimicrobial activity. Furthermore heparin may enhance staphylococcal biofilm formation. We evaluated the safety and efficacy of a novel non-antibiotic catheter lock solution for the prevention of CLABSI.

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Patients and Methods: Between November 2015, and February 2016, we enrolled 60 patients with hematologic malignancies who had peripherally inserted central catheter (PICC) to receive the study lock solution. The study lock consisted of 15 or 30 micrograms/mL of nitroglycerin in combination with 4% sodium citrate and 22% ethanol. Each lumen was locked for at least 2 h once daily, prior to being flushed.

Results: After enrolling 10 patients at the lower nitroglycerin dose without evidence of toxicity, the dose was escalated to the higher dose (30 micrograms/ml). There was no serious related adverse events or episode of hypotension with lock administration. Two patients experienced mild transient adverse events (one headache and one rash) possibly related to the lock and that resolved without residual effect. CLABSI rate was 0 on lock days vs 1.6/1000 catheter-days (CD) off lock prophylaxis compared with a rate of 1.9/1000 CD at the institution in the same patient population.

Conclusions: The nitroglycerin-based lock prophylaxis is safe and well tolerated. It may prevent CLABSI when given daily to cancer patients. Large, prospective, randomized clinical trials are needed to validate these findings.

Reference:

Chaftari, A.M., Hachem, R., Szvalb, A., Taremi, M., Granwehr, B., Viola, G.M., Sapna, A., Assaf, A., Yazan, N., Shah, P., Gasitashvili, K., Natividad, E., Jiang, Y., Slack, R., Reitzel, R., Rosenblatt, J., Mouhayar, E. and Raad, I. (2017) A Novel Non-Antibiotic Nitroglycerin Based Catheter Lock Solution for the Prevention of Intraluminal Central Venous Catheter Infections in Cancer Patients. *Antimicrobial Agents and Chemotherapy*. April 17th. .
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