

In patients with CLABSI due to Gram-negative pathogens, the use of ALT along with systemic antibiotics has an excellent catheter salvage rate” Soman et al (2016).

Abstract:

**BACKGROUND:** Central-line-associated blood-stream infection (CLABSI) is a highly consequential nosocomial infection. The most effective management includes the removal of the infected catheter. Retention of the catheter and antibiotic lock therapy (ALT) along with systemic antibiotics may be attempted only if there are unusual extenuating circumstances. CLABSIs due to Gram-negative bacteria (GNB) is more common in our setting and the organisms are often highly resistant. Hence, there is a need to explore the use of novel antimicrobials for catheter lock solutions along with antibiofilm agents.

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**PATIENTS AND METHODS:** We report the use of antibiotic lock therapy in the first 29 patients who had 37 episodes of bacteremia (CLABSI/symptomatic colonization) due to long-term catheters in our unit from February 2008 to September 2014. Patients received ALT if they had CLABSI or were symptomatic with a colonized catheter. Patients who needed removal of the catheter were ineligible for ALT. Patients received systemic antibiotic therapy and lock solutions were kept in the catheter for dwell times of 24 hours, and therapy was continued for 14 days. Successful treatment was defined as any of the following: 1) Clinical cure with disappearance of signs of sepsis 2) Microbiological cure with resolution of bacteremia (confirmed by a negative blood culture which was obtained through the catheter 2-5 days after stopping therapy).

**RESULTS:** Among the 37 episodes treated with ALT, 30 episodes were caused by GNB and four episodes were caused by Gram-positive cocci (GPC); Enterococcus, methicillin-sensitive *S. aureus* (MSSA), methicillin-resistant *S. aureus* (MRSA), and methicillin-sensitive coagulase-negative staphylococcus (CoNS). There were three episodes of CRBSI due to *Candida* and one episode each due to *L. monocytogens* and *Bacillus* spp. Of the other 30 episodes due to GNB,

Acinetobacter baumannii were isolated in eight episodes, Stenotrophomonas (n=6), E. coli (n=5), Flavobacterium (n=2), and P. aeruginosa (n=4), and B. cepacia in three episodes. The other organisms isolated were K. pneumoniae, and non-typhoidal Salmonella (1 episode each). Successful treatment with ALT was observed in 30 (81.08%) of the 37 episodes.

**CONCLUSIONS:** In patients with CLABSI due to Gram-negative pathogens, the use of ALT along with systemic antibiotics has an excellent catheter salvage rate. Newer antibiotics (tigecycline and colistin) may be useful options as antibiotic lock solutions along with antibiofilm agents especially in the setting of resistant Gram-negative bacilli producing CLABSI.

Reference:

Soman, R., Gupta, N., Suthar, M., Kothari, J., Almeida, A., Shetty, A. and Rodrigues, C. (2016) Antibiotic Lock Therapy in the Era of Gram-Negative Resistance. The Journal of the Association of Physicians of India. 64(2), p.32-37.

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