

Bicarbonate Lock Therapy

BACKGROUND:

Sodium bicarbonate lock therapy has been explored as an alternative to ethanol lock therapy for the prevention of recurrent central line-associated bloodstream infections (CLABSI).¹ The best option for patients with CLABSI is to remove the catheter and place a new one, but there are populations in whom which vascular access locations may be limited. *Staphylococcus aureus* and *Candida* or other yeast infections, meanwhile, should be treated with removal of the catheter and NOT with antibiotic lock therapy, ethanol lock therapy or bicarbonate lock therapy. Sodium bicarbonate lock therapy could be considered if ethanol lock therapy is not available or contraindicated in a patient with a CLABSI in whom the catheter is to be maintained or a patient at risk of CLABSI.

Exclusion criteria:

- Exit site infection
- Tunnel infection
- *Staphylococcus aureus* infections
- *Candida* or other yeast infection
- Cannot withdraw lock solution from catheter
- Intolerance to sodium bicarbonate

Procedure:

Do not inject the sodium bicarbonate systemically! Always withdraw the sodium bicarbonate lock solution first. Do not use the catheter for other infusions without withdrawing the sodium bicarbonate lock solution first. The volume of the sodium bicarbonate lock solution is 3ml in each lumen of the catheter. The concentration is 8.4%.¹ Dwell times range from 4-48 hours.

Perform the following steps in each lumen of the catheter.

Steps:²

1. Withdraw the old sodium bicarbonate lock solution and discard.
2. Use the SAS protocol. Flush the catheter with normal saline.
3. Infuse the ordered medication through the catheter, if you are using the catheter for an ordered medication.
4. Flush the catheter with normal saline.
5. Instill 3ml of the sodium bicarbonate lock solution into the catheter.
6. Repeat these steps for the other lumen.

Reference

1. Josyabhatla R, Naik M, Liu Y, Speer AL, Imseis EM. Sodium Bicarbonate Locks May Be a Safe and Effective Alternative in Pediatric Intestinal Failure: A Pilot Study. [J Pediatr Gastroenterol Nutr.](#) 2022;75(3):304-307. doi:10.1097/MPG.0000000000003506
2. Justo JA, Bookstaver PB. Antibiotic lock therapy: Review of technique and logistical challenges. [Infect Drug Resist.](#) 2014;7:343-363. doi:10.2147/IDR.S51388