



Recommendations for Antibiotic Lock Treatment of Infected Central Venous Catheters/Ports

General Recommendations:

- Antibiotic lock treatment may be considered for treatment of infected catheters with no signs of exit site or tunnel infection for whom catheter salvage is the goal.
- Catheter removal is recommended for CLABSI due to *S. aureus* and *Candida* species, instead of treatment with antibiotic lock and catheter retention, unless there are unusual extenuating circumstances.
- For patients with multiple positive catheter-drawn blood cultures that grow coagulase-negative staphylococci and concurrent negative peripheral blood cultures, antibiotic lock therapy may be given without systemic antibiotics for 10–14 days.
- For all other situations, antibiotic locks should be used in conjunction with systemic antimicrobial therapy, both administered for 7–14 days.
- At this time, there are insufficient data to recommend ethanol locks for the treatment of CLABSI.
- Infectious Disease consult should be considered. Treatment of CVC infections in pediatric patients should be guided by the Pediatric Infectious Diseases Consult Service.

Procedural Instructions:

- Concentrations of antibiotics and anticoagulants should be formulated based on tables for hemodialysis and non-hemodialysis catheters below.
- Antibiotic lock should be changed every 24 hours for non-hemodialysis patients and after each dialysis session for hemodialysis patients. Antibiotic lock may not be appropriate for patients requiring frequent line access.
- Solution must dwell in catheter for a minimum of 2 hours, and a maximum of 24 hours for non-hemodialysis patients, and a maximum of 3 days for hemodialysis patients.
- For adults: volume 2 mL per lumen: central venous access device (Groshong, Permacath, Hickman, Broviac), or implantable infusion port (Mediport, Port-a-cath). For pediatrics: volume of 1 mL per lumen.
- Avoid heparin containing locks in patients with a history of heparin-induced thrombocytopenia history.

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Formulas for Antimicrobial Locks

Adult Hemodialysis Catheters				
Antibiotic	Antibiotic Conc. (mg/mL)	Anticoagulant	Anticoagulant Conc.	Diluent
Vancomycin	5	Heparin	1,000 units/mL	0.9 NaCl
Vancomycin*	3	Sodium Citrate	40 mg/mL	0.9 NaCl
Gentamicin	1	Heparin	2500 units/mL	0.9 NaCl
Gentamicin*	2.5	Sodium Citrate	40 mg/mL	0.9 NaCl
Ceftazidime	0.5	Heparin	100 units/mL	0.9 NaCl
Cefazolin	5	Heparin	2,500 units/mL	0.9 NaCl

*Sodium Citrate is not available on the inpatient formulary, but may be an option for outpatients

Adult Non-Hemodialysis Catheters				
Antibiotic	Antibiotic Conc. (mg/mL)	Anticoagulant	Anticoagulant Conc. (units/mL)	Diluent
Vancomycin	2	Heparin	10	0.9 NaCl
Gentamicin	1	Heparin	2500	0.9 NaCl
Cefazolin	0.5	Heparin	100	0.9 NaCl
Ceftazidime	0.5	Heparin	100	0.9 NaCl
Ciprofloxacin	0.125	Heparin	100	0.9 NaCl

Pediatric Hemodialysis Catheters				
Antibiotic	Antibiotic Conc. (mg/mL)	Anticoagulant	Anticoagulant Conc. (units/mL)	Diluent
Vancomycin	1	Heparin	1,000	0.9 NaCl
Gentamicin	1	Heparin	1,000	0.9 NaCl
Ceftazidime	0.5	Heparin	1,000	0.9 NaCl
Cefazolin	5	Heparin	1,000	0.9 NaCl

Pediatric Non-Hemodialysis Catheters				
Antibiotic	Antibiotic Conc. (mg/mL)	Anticoagulant	Anticoagulant Conc. (units/mL)	Diluent
Vancomycin	2.5	Heparin	10	0.9 NaCl
Gentamicin	0.02	Heparin	10	0.9 NaCl
Ceftazidime	0.5	Heparin	10	0.9 NaCl
Cefazolin	0.5	Heparin	10	0.9 NaCl

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Revision History:	

The recommendations in this guide are meant to serve as treatment guidelines for use at Michigan Medicine facilities. If you are an individual experiencing a medical emergency, call 911 immediately. These guidelines should not replace a provider's professional medical advice based on clinical judgment, or be used in lieu of an Infectious Diseases consultation when necessary. As a result of ongoing research, practice guidelines may from time to time change. The authors of these guidelines have made all attempts to ensure the accuracy based on current information, however, due to ongoing research, users of these guidelines are strongly encouraged to confirm the information contained within them through an independent source.