



Hemodialysis-only Antibiotic Dosing

Patients receiving chronic hemodialysis (HD) are at an increased risk for infections and management may be difficult when patients require intravenous (IV) antibiotics for a prolonged duration. Preserving residual vascular integrity for potential HD access is of high importance in these patients, therefore alternatives to central line placement are desired. How can prolonged IV antibiotics be administered in HD patients without a central line?

Can we give antibiotics intermittently only after HD?

Yes, many antibiotics are renally cleared, therefore high concentrations are achieved and sustained in between dialysis sessions. Administration through dialysis access at outpatient dialysis centers may be easier for a patient. The 2018 Infectious Diseases Society of America Outpatient and Parenteral Therapy (OPAT) guideline notes that dialysis-only dosing is possible with cefazolin, cefepime, ceftazidime, meropenem, and vancomycin.¹ Additional data also supports daptomycin and ertapenem.²

What doses should be used?²

Antibiotic	Proposed dosing regimen 3 times weekly AFTER HD	Comments
Cefazolin	2/2/2 g or 2/2/3 g	Higher dosing for MSSA bacteremia
Cefepime	2/2/2 g	
Ceftazidime	1/1/2 g or 2/2/3 g	Lower dosing may be used when MIC < 8 µg/mL and NOT for <i>P. aeruginosa</i>
Ertapenem	500/500/500 mg or 1/1/1 g	
Meropenem	N/A	Very limited data showing poor outcomes with intermittent dosing in a small number of patients. ³ Daily dosing is preferred.
Daptomycin	6/6/9 mg/kg or 8/8/12 mg/kg	Higher dosing for <i>S. aureus</i>
Vancomycin	Dosing adjusted to goal pre-dialysis level of 15 – 20 µg/mL ⁴	

Key Takeaway: Thrice weekly IV antibiotic dosing is available with select antibiotics in patients receiving chronic HD. Dosing through HD access may preserve vascular access and be logistically easier.

References:

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2. Tsai YV, Soto C, Crawford G, Dzintars K. Important antimicrobial dosing considerations for transitions of care: focus on thrice-weekly dosing in hemodialysis. *Am J Health Syst Pharm*. 2025; 82(4):203-210. doi:10.1093/ajhp/zxae259.
3. Ho V, Tay F, Wu J, et al. The case for intermittent carbapenem dosing in stable hemodialysis patients. *Antibiotics (Basel)*. 2020; 9(11):815.
4. Rybak MJ, Le J, Lodise TP, et al. Therapeutic monitoring of vancomycin for serious methicillin-resistant *Staphylococcus aureus* infections: A revised consensus guideline and review by the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, the Pediatric Infectious Diseases Society, and the Society of Infectious Diseases Pharmacists. *Am J Health Syst Pharm*. 2020; 77(11):835-864. doi:10.1093/ajhp/zxaa036.