

Vancomycin Guidance in Hemodialysis (HD) Patients

This reference is a guidance for general management. Patient-specific information including response to previous doses, estimated volume of distribution, residual renal function and frequency of HD sessions should be considered.

Sample Time	<p>Immediately pre-dialysis; lab bundling may be considered in patients with minimal or no residual renal function</p> <ul style="list-style-type: none"> • Flush catheter thoroughly before obtaining vancomycin level • If a random level is needed, wait at least 4 hours post-dialysis to allow for drug redistribution 														
Goal	AUC 400–600 mg*hr/L (pre-dialysis level ~17-25mcg/mL)														
TDM Strategy	<p><u>Initial Loading Dose:</u> Vancomycin 12.5mg/kg IV once (Max 1250mg)</p> <p><u>Maintenance Doses</u> to be given AFTER Dialysis:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e1eef6;"> <th style="text-align: left;">Pre-Dialysis Level (mcg/mL)</th> <th style="text-align: left;">Vancomycin Dose</th> </tr> </thead> <tbody> <tr> <td><5</td> <td>12.5mg/kg IV once</td> </tr> <tr> <td>5-10</td> <td>10mg/kg IV once</td> </tr> <tr> <td>10-15</td> <td>7.5mg/kg IV once</td> </tr> <tr> <td>15-20</td> <td>5mg/kg IV once</td> </tr> <tr> <td>20-25</td> <td>2.5mg/kg IV once</td> </tr> <tr> <td>>25</td> <td>No supplemental dose needed</td> </tr> </tbody> </table> <p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Patient-specific information including response to previous doses, estimated volume of distribution (Vd), residual renal function and frequency of HD sessions should be considered. • Approximately 30-40% reduction in serum level from a 3-to 4-hour dialysis session. • Dose is calculated with actual body weight. • Patients with residual or recovering renal function may require larger or more frequent doses than anuric patients. • NOTE: When ordering the one-time dose of vancomycin, do NOT use the “post-dialysis” frequency; order a dose with “once” frequency at the appropriate date and time. 	Pre-Dialysis Level (mcg/mL)	Vancomycin Dose	<5	12.5mg/kg IV once	5-10	10mg/kg IV once	10-15	7.5mg/kg IV once	15-20	5mg/kg IV once	20-25	2.5mg/kg IV once	>25	No supplemental dose needed
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Reference

- 1) Crew P, Heintz SJ, Heintz BH. Vancomycin dosing and monitoring for patients with end-stage renal disease receiving intermittent hemodialysis. *Am J Health Syst Pharm.* 2015;72(21):1856-1864. doi:10.2146/ajhp150051
- 2) Pai AB, Pai MP. Vancomycin dosing in high flux hemodialysis: a limited-sampling algorithm. *Am J Health Syst Pharm.* 2004;61(17):1812-1816. doi:10.1093/ajhp/61.17.1812

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- 3) 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

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