

IV ANTI-INFECTIVE MEDICATION DOSING IN CRRT^{1,2,3,4,5,6}
(Continuous Renal Replacement Therapy)- UPDATED NOV 2006

The dosing recommendations presented here are based on published literature, personal experience, and clinical judgement. These recommendations should be used as "initial" guidelines and individualized dosing is advocated when possible. LHSC-specific practice considerations are also noted below. Please RE-ASSESS dose if CRRT is stopped

IV Anti-Infective Medications	CVVH Dose (Continuous Venovenous Hemofiltration)	CVVHD Dose (Continuous Venovenous Hemodialysis)	CVVHDF Dose (Continuous Venovenous Hemodiafiltration)
Acyclovir	5 – 7.5 mg/kg q12h Use higher end of the dosing range for CNS infections		
Amikacin (Amikin [®]) NF	10 mg/kg load, then 7.5 mg/kg q24 – 48 h		
Aztreonam (Azactam [®]) (SAP)	1-2g q12h		2g q12h
Cefazolin (Ancef [®])	1 –2 g q12h		2g q12h
Cefepime (Maxipime [®]) NF	1-2g q12h		2g q12h
Cefotaxime (Claforan [®])	1-2g q12h		2g q12h
Ceftazadime (Tazidime [®])	1 – 2 g q12h		2g q12h
Ceftriaxone (Rocephin [®]) *restricted to ER – see autosub*	2 g q12 – 24 h		
Cefuroxime (Zinacef [®])	1.5 gm q8-12h		1.5 gm q8h
Ciprofloxacin (Cipro [®])	400 mg q24h ⁺		400 mg q24h - q12h ⁺
Fluconazole (Diflucan [®])	200 – 400 mg q24h	400-800mg q24h (use 800mg if flow 2L/h or relative resistance i.e. Candida glabrata)	
Ganciclovir (Cytovene [®])	2.5 mg/kg q24h (dose in 25 mg increments ⁺)		
Gentamicin	3 mg/kg load, 2 mg/kg q24-48 h ** (individualize dosing) Gram positive synergy dose: 1mg/kg q24-36h		
Imipenem/cilastatin (Primaxin [®])	500 mg q8h		500 mg q6-8h
Levofloxacin (Levaquin [®])	Load: 500mg, then 250mg q24h no information is available for adjusting patients on 750 mg IV Daily regimen – please use clinical judgement		
Meropenem (Merrem [®])	1 g q12h		1g q12h
Metronidazole (Flagyl [®])	500 mg q8h		
Penicillin	4 million units q8h	4 million units q6-8h	4 million units q4-6h
Pipercillin (Pipracil [®])	3 - 4 g q8-12h	3 – 4 g q8h	3 – 4 g q6h
Pipercillin/tazobactam (Tazocin [®])	3.375 g q6h Consider: 4.5g q6h pneumonia & q8h for intra-abdominal infections ⁺		
Ticarcillin/clavulanic acid (Timentin [®]) NF	2 g q8-12h	2 g q6-8h	2 – 3.1 g q6-8h
Tobramycin	3 mg/kg load, 2 mg/kg q24-48 h ** (individualize dosing)		
TMP/SMX (Septra [®])	2.5 mg/kg TMP q8h (consider higher doses with CVVHDF)		
Vancomycin	15-20 mg/kg load then 1g q48h ** (individualize dosing)		15-20 mg/kg load; 1g q24h ** (individualize dosing)

+ = LHSC-specific clinical practice patterns

These dosing recommendations are made on the assumption that the patient is in anuric/oliguric acute renal failure, has normal hepatic function and has a UFR and DFR of at least 1 Liter/hr each. Higher UFR and/or DFR may increase the potential for drug removal.

NF = non-formulary drug at LHSC

SAP = Special Access Program; need to apply to Health Canada to use this non-marketed product in Canada. Coordinate LHSC efforts through Drug Information, Pharmacy Department.

RX Restrictions = prescribing restrictions at LHSC; check the online formulary (<https://appserver.lhsc.on.ca/formulary>) for details on the approved indications/ prescribers; use outside these restrictions requires the Non-Formulary Approval process to be followed.

NO DOSAGE ADJUSTMENTS REQUIRED	DO NOT USE IN RENAL DYSFUNCTION
Amphotericin B (regular, liposomal- RX restrictions & lipid complex- NF) Azithromycin (Zithromax [®]) Caspofungin (Cancidas [®]) – RX restrictions Clindamycin Doxycycline (Vibramycin [®]) SAP Linezolid (Zyvoxam [®]) NF Quinupristin/dalfopristin (Synercid [®]) NF Rifampin (Rifadin [®]) SAP	Itraconazole SAP Voriconazole ⁷ - RX restrictions

¹ Henteges M. Aurora Drug Information. St. Luke's Medical Centre. October 2001.

² Mueller B. CVVH Initial Drug Dosing Guidelines (Updated 5/5/2000). The Drug Monitor. www.thedrugmonitor.com/cvvh-dosing.html Accessed: December 20,2005.

³ Lewis, RE. Antifungal Dosage Adjustment in Kidney and Liver Dysfunction. Doctor fungus. www.doctorfungus.org/thedrugs/antif_dosage.htm Accessed: December 20,2005.

⁴ Kubin C & Dzierba A. The effects of continuous renal replacement on anti-infective therapy in the critically ill. Journal of Pharmacy Practice. 2005; 18(2): 109-117.

⁵ Compendium of Pharmaceuticals and Specialties, online version (e-CPS). 2005. Canadian Pharmacists Association.

⁶ Trotman RL et al. Antibiotic dosing in critically ill adult patients receiving continuous renal replacement therapy. Clinical Infectious Diseases. 2005; 41: 1159-1166.

⁷ Janssen. US Prescribing Information. Sporanox (itraconazole injection). http://healthcareprofessionals.orthobiotech.com/common/prescribing_information/SPORANOX/PDF/Sporanox_Injection.pdf Accessed: January 23,2006.