UCLA Healthcare

Adult Anti-Infective Dosing Guide

Department of Pharmaceutical Services (7/2011)

Anti-Infective	Normal Dose	CrCl 20-50 mL/min	CrCl 10-19 mL/min	CrCl < 10 mL/min
Acyclovir	*HSV infections*			
	5 mg/kg/dose Q8H	5 mg/kg/dose Q12H	5 mg/kg/dose Q24H	2.5 mg/kg/dose Q24H
	HSV encephalitis/Herpes zoster			
	10 mg/kg/dose Q8H	10 mg/kg/dose Q12H	10 mg/kg/dose Q24H	5 mg/kg/dose Q24H
Amikacin[CF]	*Traditional Dosing*			
	7.5 mg/kg/dose Q12H	5-7.5 mg/kg/dose Q12-24H	5 mg/kg/dose Q24-48H	2.5-5mg/kg/dose Q48-72H
	Target amikacin levels: PEAK = 25-35 mg/L and TROUGH < 5-10 mg/L. Peak levels (drawn 1/2 hr following a 1/2 hr infusion) and trough levels (drawn within 30 minutes of next dose) should be obtained after the 3rd dose of regimen.			
	Extended Dosing (preferred method of dosing)			
	CrCl ≥ 60 mL/min	CrCl = 40-59 mL/min	CrCl = 20-39 mL/min	CrCl < 20 mL/min
	10-15 mg/kg/dose Q24H	10-15mg/kg/dose Q36H	10-15mg/kg/dose Q48H	Call Pharmacy
	Extended dosing allows for high peak to MIC ratios potentially improving efficacy and reducing the risk of nephro- and ototoxicity. An **"extended interval"** level between 6-14 hours (after start of infusion) is recommended anytime after the 1st dose; peak & trough levels are unnecessary. Contact the pharmacy satellite for assessment of aminoglycoside levels.			
Amphotericin B	0.5-1 mg/kg/dose Q24H	No Change*	No Change*	No Change*
	*Dose adjustment is unnecessary for pre-existing renal impairment, however, decreased renal function caused by amphotericin may warrant dose adjustment (e.g., dose reduction or Q48H dosing).			

Anti-Infective	Normal Dose	CrCl 20-50 mL/min	CrCl 10-19 mL/min	CrCl < 10 mL/min
Amphotericin B Lipid Complex[CF] (ABLC)	5 mg/kg/dose Q24H	No Change*	No Change*	No Change*
	*Dose adjustment is unnecessary for pre-existing renal impairment; however, decreased renal function caused by amphotericin may warrant dose adjustment (e.g., dose reduction or Q48H dosing).			
Ampicillin	1-2 g Q6H	1-2 g Q6-8H	No Change	1-2 g Q12H
Ampicillin/Sulbactam	3 g Q6H	3 g Q8H	3 g Q12H	1.5 g Q12H
Aztreonam[CF]	1 g Q8H	1 g Q8-12H	1 g Q12H	0.5-1 g Q24H
Caspofungin[CF]	70 mg x 1 dose then 50 mg Q24H	No Change	No Change	No Change
Cefazolin	1 g Q8H	1 g Q12H	0.5-1 g Q12H	0.5-1 g Q24H
Cefepime[CF]	1 g Q12H *P. aeruginosa*: 1-2 g Q8H	1 g Q 24H CrCl <30: 500 mg Q24H *P. aeruginosa*: 1 g Q12-24H	500 mg Q 24H *P. aeruginosa*: 1 g Q24H	250 mg Q 24H *P. aeruginosa*: 1 g Q24H
Ceftriaxone	1 g Q24H	No Change	No Change	No Change
	Management of meningitis will require higher doses: 2 g Q12H.			
Ciprofloxacin-IV	400 mg Q12H	CrCl <30: 400 mg Q24H	400 mg Q24H	400 mg Q24H
Ciprofloxacin-PO	250-750 mg Q12H	CrCl <30: 250-500 mg Q12H	250-500 mg Q12H	250-500 mg Q24H
Daptomycin[CF]	4-6 mg/kg/dose Q24H	CrCl <30: 4-6 mg/kg Q48H	No Change	No Change
Ethambutol-PO	15 mg/kg/dose Q24H	CrCl <30: 15 mg/kg/dose Q48H	No Change	No Change
Ertapenem	1 g Q24H	CrCl <30: 500 mg Q24H	No Change	No Change
Fluconazole IV/PO	100-400 mg Q24H	50-200 mg Q24H	50-100 mg Q24H	50-100 mg Q24-48H
	Management of *Coccidioides* meningitis may require higher doses.			
Flucytosine-PO	12.5-37.5 mg/kg/dose Q6H	12.5-37.5 mg/kg/dose Q12H	12.5-37.5 mg/kg/dose Q24H	12.5-25 mg/kg/dose Q24H
	Steady-state serum 5-FC levels are difficult to obtain but may be useful in cases involving anuric patients. Target peak: 30-50 mcg/mL (to be drawn 2 hrs post-dose after 3-5 days of therapy). Bone marrow suppression has been associated with 2-hour post dose 5-FC peaks of ≥ 100 mcg/mL.			

Anti-Infective	Normal Dose	CrCl 20-50 mL/min	CrCl 10-19 mL/min	CrCl < 10 mL/min
Foscarnet **(Induction)**	CrCl: >1.4 mL/min/kg 60mg/kg/dose Q8H **or** 90mg/kg/dose Q12H CrCl: >1-1.4 mL/min/kg 45mg/kg/dose Q8H **or** 70mg/kg/dose Q12H	CrCl: >0.8-1 mL/min/kg 50 mg/kg/dose Q12H CrCl: >0.6-0.8 mL/min/kg 40 mg/kg/dose Q12H **or** 80 mg/kg/dose Q 24H	CrCl: >0.5-0.6 mL/min/kg 60 mg/kg/dose Q24H CrCl: ≥0.4-0.5 mL/min/kg 50 mg/kg/dose Q24H	CrCl: <0.4 mL/min/kg NOT recommended
Foscarnet **(Maintenance)**	CrCl: >1.4 mL/min/kg 90-120mg/kg/dose Q24H CrCl: >1-1.4 mL/min/kg 70-90mg/kg/dose Q24H	CrCl: >0.8-1 mL/min/kg 50-65 mg/kg/dose Q24H CrCl: >0.6-0.8 mL/min/kg 80-105 mg/kg/dose Q48H	CrCl: >0.5-0.6 mL/min/kg 60-80 mg/kg/dose Q48H CrCl: ≥0.4-0.5 mL/min/kg 50-65 mg/kg/dose Q48H	CrCl: <0.4 mL/min/kg NOT recommended
Ganciclovir **(Induction)**	CrCl: ≥70 mL/min 5mg/kg/dose Q12H CrCl: 50-69 mL/min 2.5 mg/kg/dose Q12H	CrCl: 25-49 mL/min 2.5 mg/kg/dose Q24H	CrCl: 10-24 mL/min 1.25 mg/kg/dose Q24H	CrCl: <10 mL/min 1.25 mg/kg 3 x wk
Ganciclovir **(Maintenance)**	CrCl: ≥70 mL/min IV: 5 mg/kg/dose Q24H PO: 1000 mg TID CrCl: 50-69 mL/min IV: 2.5mg/kg/dose Q24H PO: 1500 mg Q24H	CrCl: 25-49 mL/min IV: 1.25 mg/kg/dose Q24H PO: 1000 mg Q24H	CrCl: 10-24 mL/min IV: 0.625 mg/kg/dose Q24H PO: 500 mg Q24H	CrCl: <10 mL/min IV: 0.625 mg/kg 3 x wk PO: 500 mg 3 x wk

CF = Restricted to use only if indication meets Medical Center approved criteria.
NOTE: For life-threatening conditions, alternative dosing may be necessary. Please check with the ID pharmacist or the ID Consult Service.

Anti-Infective	Normal dose	CrCl 20-50 mL/min	CrCl 10-19 mL/min	CrCl < 10 mL/min
Gentamicin	*Traditional Dosing*			
	1-2 mg/kg/dose Q8-12H	1.2-1.5 mg/kg/dose Q12-24H	1.5 mg/kg/dose Q24-48H	1-1.5mg/kg/doseQ48-72H
	Target gentamicin levels: PEAK = 5-10 mg/L and TROUGH < 1-2 mg/L. Peak levels (drawn 1/2 hr following a 1/2 hr infusion) and trough levels (drawn within 30 minutes of next dose) should be obtained after the 3rd dose of regimen.			
	Extended Dosing (preferred method of dosing)			
	CrCl ≥ 60 mL/min	CrCl = 40-59 mL/min	CrCl = 20-39 mL/min	CrCl < 20 mL/min
	5-7 mg/kg/dose Q24H	5-7mg/kg/dose Q36H	5-7mg/kg/dose Q48H	Call Pharmacy
	Extended dosing allows for high peak to MIC ratios potentially improving efficacy and reducing the risk of nephro- and ototoxicity. An "**extended interval**" level between 6-14 hours (after start of infusion) is recommended anytime after the first dose; peak & trough levels are unnecessary. Contact the pharmacy satellite for assessment of aminoglycoside levels.			
Isoniazid-PO	300 mg Q24H	No Change	150-300 mg Q24H* *Controversial whether dose reduction is needed	150 mg Q24H* *Controversial whether dose reduction is needed
Levofloxacin[CF] IV/PO	750 mg Q24H	750 mg x 1 dose, then 750 mg Q48H	750 mg x 1 dose, then 500 mg Q48H	750 mg x 1 dose, then 500 mg Q48H
Linezolid[CF] IV/PO	600 mg Q12H	No Change	No Change	No Change* *Clinical significance of metabolites is unknown
Meropenem[CF]	1 g Q8H	1 g Q12H	500 mg Q12H	500 mg Q24H
Metronidazole IV/PO	500 mg Q8H	No Change	No Change	500 mg Q12H
Oxacillin	1-2 g Q4-6H	No Change	No Change	No Change
Penicillin G	2-3 MU Q4H	1-2 MU Q4H	1-2 MU Q6H	1 MU Q6-8H
Piperacillin/ Tazobactam	3.375-4.5 g Q6H (Neutropenic host: 4.5 g Q6H)	3.375 g Q6H	2.25 g Q6H	2.25 g Q8H
Pyrazinamide-PO	15-30 mg/kg/dose Q24H (Max daily dose = 2 g)	No Change	No Change	12-20 mg/kg/dose Q24H
Quinupristin/ Dalfopristin[CF]	7.5 mg/kg/dose Q8H	No Change	No Change	No Change
Rifampin IV[CF]/PO	600 mg Q24H	No Change	No Change	No Change
Tobramycin[CF]	See Gentamicin	See Gentamicin	See Gentamicin	See Gentamicin
Trimethoprim/ Sulfamethoxazole	*Systemic Infections* 10 mg-TMP/kg/day divided Q6-12H	*Systemic Infections* 5-7.5 mg-TMP/kg/day divided Q12-24H	*Systemic Infections* 2.5-5 mg-TMP/kg/day Q24H	*Systemic Infections* 2.5 mg-TMP/kg/day Q24H
	PCP Pneumonia 15-20 mg-TMP/kg/day divided Q6-12H	*PCP Pneumonia* 10-15 mg-TMP/kg/day divided Q12-24H	*PCP Pneumonia* 7.5-10 mg-TMP/kg/day Q24H	*PCP Pneumonia* 5 mg-TMP/kg/day Q24H
Vancomycin-PO	125 mg PO Q6H	No Change	No Change	No Change
Vancomycin-IV	15 mg/kg/dose Q8-12H	15 mg/kg/dose Q24-48H	15 mg/kg/dose Q48-72H	15 mg/kg/dose Q4-7 days
	IV Vancomycin dosing is guided by serum **TROUGH** concentration (target: 10-20 mg/L*); peak levels are unnecessary. Trough levels (drawn within 30 min of dose) should be drawn after the 3rd dose of the regimen. *Target: 15-20 mg/L trough concentration for serious infections including meningitis, osteomyelitis, & respiratory tract infections.			
Voriconazole-IV[CF]	6 mg/kg/dose Q12H x 2 doses, then 4 mg/kg/dose Q12H	Intravenous dose NOT recommended; consider oral therapy	Intravenous dose NOT recommended; consider oral therapy	Intravenous dose NOT recommended; consider oral therapy
Voriconazole-PO[CF]	≥40kg: 200mg Q12H <40kg: 100mg Q12H	No change	No change	No change
	Although not clearly established, voriconazole trough levels < 1-2 mcg/mL have been associated with therapeutic failure. Due to interpatient variability, voriconazole trough levels should be drawn on Day 7 of therapy.			

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Estimation of CrCl using the Cockcroft & Gault equation:

$$\text{CrCl (ml/min)} = \frac{(140-\text{age})\ (\text{Wt-kg})}{(72)\ (\text{SCr-mg/dL})}$$

(For females multiply equation by 0.85)

Specific dose recommendations can be obtained by contacting the Infectious Diseases pharmacist at pager 92528 or a satellite pharmacist at the following extensions:

4rd Floor: x77421	6th Floor: x77621	8th Floor: x77821	Emergency Dept: x77219
5th Floor: x77521	7th Floor: x77721		Operating Room: x77221
			NPH Pharmacy: x77425

The Drug Information Center (DIC) is available to answer general or patient-specific questions regarding drug therapy. Hours of DIC are 8:00 AM to 5:00 PM, Monday through Friday, x78522.