

## ANTIBIOTIC DOSING IN RENAL IMPAIRMENT

DRUG NAME	USUAL DOSE (Normal renal function)	CrCl (ml/min)	DOSAGE ADJUSTMENT (in renal insufficiency)	
<b>ABACAVIR</b>	300 mg PO q12h	no change	no change	
<b>ACYCLOVIR</b>	5 - 10 mg/kg IV q8h	> 50	5 - 10 mg/kg IV q8h	
		25-50	5- 10 mg/kg IV q12h	
		24-10	5 - 10 mg/kg IV q24h	
		0-9	2.5 -5 mg/kg IV q24h	
		HD	2.5 - 5 mg/kg IV q24h (give dose after dialysis on dialysis days)	
	200 mg PO q4h (5x daily)	> 10	no adjustment necessary	
		0-10	200 mg PO q12h	
		400 mg PO q4 (5x daily) - 12h	>10	no adjustment necessary
			0-10	200 - 400 mg PO q12h
		800 mg PO q4 (5x daily) - 12h	> 25	no adjustment necessary
24-10	800 mg PO q8 - 12h			
0-9	400 - 800 mg PO q12h			
HD	800 mg PO q12h (give dose after dialysis on dialysis days)			
<b>AMOXICILLIN</b>	500 mg - 1 gm PO q12h	> 30	no dose adjustment necessary	
		24-10	250 - 875 mg PO q12h	
		<10	250 - 875 mg PO q24h	
		HD	250 - 875 mg PO q24h + 250 - 500 mg after each HD	
<b>AMOXICILLIN + CLAVULANATE</b>	500 - 875 mg PO q12h	>15	normal dose and interval	
		15-5	500 - 875 mg q24h	
		< 5	250 - 500 mg q24h	
		HD	250 - 500 mg q24h + 250 - 500mg after each HD	
<b>AMPHOTERICIN B</b>	0.25 - 1.5 mg/kg/day * not to exceed total daily dose of 1.5 mg/kg	no dose change necessary		
<b>AMPICILLIN</b>	250 mg - 2 gm IV q4-6h	> 30	no dose adjustment necessary	
		30-10	normal dose q6 - 8h	
		< 10	normal dose q8h	
		HD	normal dose q8h + supplemental dose after each HD	
<b>AMPICILLIN / SULBACTAM</b>	1.5 - 3 gms IV q6h	> 30	normal dose IV q6h	
		15-30	normal dose IV q12h	
		< 15	normal dose IV q24h	
		HD	normal dose q24h + supplemental dose after each HD	
<b>AMPRENAVIR</b>	1200 mg PO q12h	no change	no change	
<b>AZITHROMYCIN</b>	500 mg IV/PO once daily for 3 days	no change	no change	
<b>AZTREONAM</b>	1 - 2 gms IV q8h	> 30	normal dose	
		30-10	load with 1-2 gm, then 500 mg - 1 gm IV q8h	
		<10	load with 1-2 gm, then 250 - 500 mg IV q8h	
		HD	dose for CrCl < 10 + supplemental dose after HD	
<b>CEFAZOLIN</b>	500 mg - 1 gm IV q8h	> 35	no dose adjustment necessary	
		35-10	500 mg - 1 gm q12h	
		< 10	500 mg - 1 gm q24h	
		HD	2 gm after each HD	

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CEFEPIME	1 - 2 gm IV q12h	> 60	no dose adjustment necessary
		30 - 60	1 - 2 gm q 24h
		29-10	500 mg - 1 gm q24h
		< 11	250 - 500 mg q24h
		HD	dose for CrCl < 11 + 250 - 500 mg after each HD
	2 gm IV q8h (meningitis)	> 60	no dose adjustment necessary
		30-60	2 gm IV q12h
		29-10	2 gm IV q24h
		< 10	1 gm IV q24h
		HD	dose for CrCl < 11 + 1 gm after each HD
	1 gm IV q8h (neutropenic fever)	> 60	no dose adjustment necessary
		30 - 60	1 gm IV q12h
		29-10	1 gm IV q24h
< 11		500 mg IV q24h	
HD		dose for CrCl < 11 + 500 mg after each HD	
CEFTRIAXONE	1 - 2 gms IV q24h  * max. dose = 4 gm/day	no change	* adults with both renal and hepatic failure should not receive more than 2 gm/day
CEFUROXIME AXETIL	250 - 500 mg PO q12h	> 10 < 10	normal dose 250 mg PO q24h
CEFOTAXIME	500 mg - 1 gm IV q8h	> 35	no dose adjustment necessary
		35-10	1 gm q12h
		< 10	1 gm q24h
CLARITHROMYCIN	250 - 500 mg PO q12h	> 30	normal dose
		< 30	If normal dose is 500 mg PO q12h: give load of 500 mg then 250 mg q12h If normal dose is 250 mg PO q12h, give 250 mg q24h
CLINDAMYCIN	600 mg IV q8h <b>OR</b> 150 - 450 mg PO q6h	no change	no change
DICLOXACILLIN	125 - 500 mg PO q6h	no change	no change
DIDANOSINE (ddI)	≥ 60 kg: 200 mg PO q12h <b>OR</b> 400 mg PO q24h (tablets) <60kg: 125 mg PO q12h <b>OR</b> 250 mg PO q24h (tablets)	≥ 50	≥ 60 kg: normal dose < 60 kg: normal dose
		26 - 49	≥ 60 kg: 100 mg PO q12h or 200 mg PO q24h (tablets) < 60 kg: 75 mg PO q12h or 150 mg PO q24h (tablets)
		25-10	≥ 60 kg: 150 mg PO q24h (tablet) < 60 kg: 100 mg PO q24h (tablet)
		< 10	≥ 60 kg: 100 mg PO q24h (tablet) < 60 kg: 75 mg PO q24h (tablet)
		HD	dose for CrCl < 10
DOXYCYCLINE	100 mg IV/PO q12h	no change	no change
EFAVIRENZ	600 mg PO q24h	no change	no change
ERYTHROMYCIN	250 - 500 mg PO q6 - 12h <b>OR</b>	no change	no change
	15 - 20 mg/kg/day IV divided q6h		
ETHAMBUTOL	15 - 25 mg/kg/day	> 50	normal dose
		10-50	normal dose q24 - 36h
		< 10	normal dose q48h

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		HD	normal dose after each HD
FLUCONAZOLE	<b>Loading Dose:</b> 100 - 800 mg PO/IV q24h <b>Maintenance Dose:</b> 50 - 800 mg PO/IV q24h	> 50	normal dose
		< 50 (no HD)	50% normal dose q24h
		HD	load with 100 - 400 mg, then normal dose after each HD
FLUCYTOSINE (5-FC)	50 - 150 mg/kg/day PO divided q6h	> 40	normal dose
		20 - 40	12.5 - 37.5 mg/kg q12h
		20-10	12.5 - 37.5 mg/kg q24h
		< 10	12.5 - 37.5 mg/kg q24 - 48h
		HD	If receiving HD q 48 - 72h then 20 - 50 mg/kg immediately after each HD
GANCICLOVIR IV	<b>Induction:</b> 5 mg/kg IV q12h x 14 - 21 days	>70	5 mg/kg q12h
		50-69	2.5 mg/kg q12h
		25-49	2.5 mg/kg q24h
		<25	1.25 mg/kg q24h
		HD	1.25 mg/kg 3x/week with doses given after HD
	<b>Maintenance:</b> 5 mg/kg IV q24h	>70	5 mg/kg q24h
		50-69	2.5 mg/kg q24h
		25-49	1.25 mg/kg q24h
		<25	0.625 mg/kg q24h
		HD	0.625 mg/kg 3x/week with doses given after HD
<b>IMPENEM</b> (Refer to product information for complete prescribing information for patients requiring different total daily doses)	500 mg IV q6h (2 g/day) [ <b>Note that meningitis dose is higher (up to 1g q 6h, depending on renal function- consult ID)</b> ]	≥ 71	≥ 70 kg: 500 mg q6h  60 - 69 kg: 500 mg q8h 50 - 59 kg: 250 mg q6h 40 - 49 kg: 250 mg q6h 30 - 39 kg: 250 mg q8h
		41 - 70	≥ 70 kg: 500 mg q8h 60 - 69 kg: 250 mg q6h 50 - 59 kg: 250 mg q6h 40 - 49 kg: 250 mg q8h
		21 - 40	≥ 70 kg: 250 mg q6h
		<b>** In patients undergoing hemodialysis or with a Clcr of 6-20 ml/min, the 500mg IV q 12 hour dose should be reserved for treatment of severe infections. Patients with Clcr ≤ 5 ml/min should not receive imipenem/cilastatin unless dialysis is going to be instituted within 48 hours. These patients may be at an increased risk of seizures.</b>	
INDINAVIR	800 mg PO q 8h	no change	no change
ISONIAZID	300 mg PO daily	no change	no change
ITRACONAZOLE	100 - 200 mg PO (capsule / solution) q12h <b>OR</b>	PO: no change	PO: no change
	200 mg IV q12h x 4 doses, then 200 mg IV q24h	IV: > 30	normal dose
	<b>***IV use NOT TO EXCEED 14 days***</b>	IV: ≤ 30	<b>not recommended due to injectable excipient</b>
LAMIVUDINE	150 mg po q 12h	≥ 50	150 mg PO q12h

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		30-49	150 mg PO q24h
		15-29	150 mg x 1, then 100 mg PO q24h
		14-May	150 mg x 1, then 50 mg PO q24h
		< 5	150 mg x 1, then 25 mg PO q24h
		HD	150 mg x 1, then 25 - 50 mg PO q24h
<b>LAMIVUDINE/ZIDOVUDINE (COMBIVIR)</b>	1 tablet PO q12h	<b>not recommended in fixed combination for Clcr &lt; 50 ml/min</b>	
<b>LEVOFLOXACIN</b>	If normal dose <b>250 mg IV/PO</b> q24h	≥ 20	250 mg q24h
		< 20 and HD	250 mg q48h
		≥ 50	500 mg q24h
	If normal dose <b>500 mg IV/PO</b> q24h	20 - 49	500 mg q48h
		< 20 and HD	500 mg x 1, then 250 mg q48h
		CVVHD	500 mg q 48h
	If normal dose <b>750 mg IV/PO</b> q24h (note that the 500 mg q 24h dosage schedule shown above should be used if the levofloxacin MIC is ≤0.5 ug/ml)	≥ 50	750 mg q24h
		20 - 49	750 mg q48h
		< 20 and HD	750 mg X 1, then 500 mg q48h
CVVHD	750 mg q 48h		
<b>LINEZOLID</b>	600 mg IV/PO q12h	no change	no change
<b>MEROPENEM</b>	1 gm IV q 8h - (note that meningitis dose is higher, 2g q 8h, with normal renal function)	>50	normal dose
		26-50	normal dose q12h
		25-Oct	50% normal dose q12h
		<10	50% normal dose q24h
		HD	50% normal dose q24h + 50% normal dose after each HD
<b>METRONIDAZOLE</b>	500 mg IV/PO q12h	no change	no change
	500 mg IV/PO q8h ( <i>C. difficile</i> diarrhea)	no change	no change
<b>NAFCILLIN</b>	2 gm IV q4-6h	no change	no change
<b>NELFINAVIR</b>	1250 mg PO q12h	no change	no change
<b>NEVIRAPINE</b>	200 mg PO q12h	no change	no change
<b>NITROFURANTION</b>	50-100 mg PO q12h	≥ 40	normal dose
		< 40	avoid use: therapeutic levels not attained in the urine
<b>NORFLOXACIN</b>	400 mg PO q12h	> 30	normal dose
		< 30	normal dose PO q24h
<b>PENICILLIN G</b>	2.0 - 4.0 million units IV q4h	> 125	3.0 - 4.0 million units q4h
		60 - 124	1.8 - 2.0 million units q4h
		40 - 59	1.3 - 1.5 million units q4h
		20 - 39	800,000 - 1.0 million units q4h
		19-Oct	800,000 - 1.0 million units q6h
		< 10 & HD	500,000 - 800,000 units q6h
		< 10 & ESLD	500,000 units q8h
<b>PENTAMIDINE</b>	4 mg/kg IV or IM q24h	> 50	normal dose
		Oct-50	normal dose q24-36h
		< 10	normal dose q48h
		HD	dose for CrCL < 10 ml/min
<b>PIPERACILLIN/TAZOBACTAM</b>	<b>Mild to Moderate Infections:</b> 3.375 gm IV q6h	>40	normal dose
		20-40	2.25 gm q6h
		<20	2.25 gm q8h
		HD	2.25 gm q8h + 1.125 gm supplemental dose after each HD
	<b>Severe/life threatening</b>	>40	normal dose

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	<b>infections:</b> 4.5 gm IV q6h	20-40	4.5 gm q8h
		<20	4.5 gm q12h
		HD	2.25 gm q8h + 1.125 gm supplemental dose after each HD
	<b><i>Pseudomonas aeruginosa</i> infections*:</b> 3.375 gm IV q4h. * Combination therapy with an aminoglycoside may be indicated, depending on piperacillin MIC and site of infection. Treatment of uncomplicated UTIs can be with "mild to moderate infection" dosages	>40	normal dose
		20-40	3.375 gm q6h
		<20	3.375 gm q8h
	HD	2.25 gm q8h + 1.125 gm supplemental dose after each HD	
<b>QUINUPRISTIN/DALFOPRISTIN</b>	7.5 mg/kg IV q8h	no change	no change
<b>PYRAZINAMIDE</b>	15-30 mg/kg/d (maximum 2 gm/day)	> 10	normal dose
		<10	25-30 mg/kg three times weekly
		HD	25-30 mg/kg three times weekly, post-dialysis
<b>PYRIMETHAMINE</b>	25 - 75 mg PO q24h	no change	no change
<b>RIFABUTIN</b>	300 mg PO q24h	no change	no change
<b>RIFAMPIN</b>	600 mg IV/PO q12 - 24h	no change	no change
<b>RITONAVIR</b>	600 mg PO q12h	no change	no change
<b>SAQUINAVIR</b>	600 mg PO q8h	no change	no change
<b>STAVUDINE</b>	≥ <b>60kg:</b> 40 mg PO q12h	≥ 50	normal dose
		26-49	normal dose q24h
	< <b>60kg:</b> 30 mg PO q12h	≤ 25 and HD	50% normal dose q24h
<b>STREPTOMYCIN</b>	15 mg/kg/day IM	> 80	normal dose
		50-80	1 gram loading dose, then 7.5 mg/kg q24h
		Oct-49	1 gram loading dose, then 7.5 mg/kg q24-72h
		< 10	7.5 mg/kg q72-96h
		HD	give 50-75% of loading dose after each HD
		< 10	normal dose q24h
<b>TMP/SMX</b>  (Bactrim, Septra)  1SS tablet = 80 mg TMP; 1DS tablet =160 mg TMP;  1 ampule(5 ml) = 80 mg TMP	<b>Urinary Tract Infections:</b>  5 mg/kg/day of trimethoprim component given in divided doses  <b>Serious Systemic Infections:</b>  8-10 mg/kg/day of trimethoprim component given in divided doses (q 6 -12hr)  <b><i>Pneumocystis carinii</i> Pneumonia</b>  15-20 mg/kg/day of trimethoprim component given q 6-8hr	> 30	normal dose
		15 - 30	normal dose divided q12h x 48-72h then 50% of normal daily dose given q24h
		< 15	<b>NOT ADVISED</b>
		HD	<b>NOT ADVISED-</b>
<b>VALACYCLOVIR</b>	Primary Genital Herpes Simplex 1 gm PO q12hrs	≥ 30	normal dose
		29-Oct	1 g q24 hrs

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		<10	500 mg q24 hrs		
		HD	500 mg q24 hrs dosed post-dialysis		
		Recurrent Herpes Simplex (genital) 500 mg PO q12h	≥ 30	normal dose	
			≤ 29	500 mg PO q24h	
			HD	dose for Clcr ≤ 29, given after HD	
			HD	dose for Clcr ≤ 29, given after HD	
		Herpes zoster: 1 gm PO q8h	≥ 50	normal dose	
			30-49	1 gm PO q12h	
			29-Oct	1 gm PO q24h	
			<10	500 mg PO q24h	
HD	dose for Clcr < 10, given after HD				
HD	dose for Clcr < 10, given after HD				
<b>VALGANCICLOVIR</b>	900 mg po q12h		<b>INDUCTION</b>	<b>MAINTENANCE</b>	
		≥ 60	900 mg po q12h	900 mg po q24h	
		40 - 59	450 mg po q12h	450 mg po q24h	
		25 - 39	450 mg po q24h	450 mg po q2days	
		24-Oct	450 mg po q2days	450 mg po twice weekly	
		HD	do not use in patients on hemodialysis		
		HD	do not use in patients on hemodialysis		
<b>ZALCITABINE (ddC)</b>	0.75 mg PO Q8H	≥ 50	normal dose		
		Oct-49	0.75 mg q12h		
		< 10 and HD	0.75 mg q24h		
<b>ZIDOVUDINE</b>	200 mg PO q8h	≥ 26	normal dose		
		≤ 25 and HD	100 mg q8h		