Antibiotic doses

Drug	IV dose	Dosing in renal failure	Adverse effects
Amikacin	15 mg/kg/day divided IV/IM q8-12hr	In renal failure, increase interval between doses (mild/ moderate : q12-18 h, severe :q24-48 h).	*Nephrotoxicity, ototoxicity and neurotoxicity.*
Amoxicillin + Clavulanate (Augmentin) (1.2 g vial contains Amoxicillin 1 g + Clavulanate 200 mg)	1.2 g vial q6 - 8h	In renal failure, increase interval between doses (mild /moderate:q8-12h, severe :q12-24 h). Supplemental dose is required for HD and PD	*Side effects of amoxicillin include diarrhoea and rashes. Amoxacillin and ampicillin have a common spectrum but amoxicillin is better absorbed so diarrhoea is less. Adverse effects of all penicillins include hypersensitivity, and local irritation at the site of injection.*
Ampicillin-sulbactam (1.5 g vial contains ampicillin 1 g + sulbactam 0.5 g)	1.5 gm to 3 gm IV/IM Every 6hr , not to exceed 12 g/day	In renal failure, increase interval between doses (mild/moderate :q12h, severe : q24h). Supplemental dose is required for HD but not PD	IM injection site pain, Diarrhoea, Thrombophlebitis.
Aztreonam	1-2 g IV/IM Every 8-12hr , not to exceed 8 g/day	CrCl 10-30 mL/min: 1-2 g loading dose, then 50% of usual dosage CrCl <10 mL/min: 1-2 g loading dose, then 25% of usual dosage	*Toxic effects are phlebitis, rash, and elevated liver function tests.*
Cefazolin	1–2 g q8h	In renal failure, increase interval between doses (mild/moderate :q12h, severe :q24h). Supplemental dose is required for HD but not PD	***All cephalosporins can cause allergic reactions.***

Cefepime	1–2 g q8–12h	In RF, the interval between doses is increased and the dose of drug is reduced. (In children, in mild-moderate RF : 25 mg/kg q12h, in severe RF : 12.5 mg/kg q24h). Supplementary dose is required in HD and PD.	*Rash, Diarrhoea and elevated liver function tests.*
Cefoperazone	2-4g/day devided every 8-12h	No change in dosing is required in renal failure.	Anaphylaxis, Stevens-Johnson syndrome, Erythema
Cefotaxime	1-2 g IV or IM q8hr , not to exceed 12 g/day	In Creatinine clearance <20 reduce dose by 50 %. Supplemental dose is required for HD but not PD.	
Ceftazidime	1-2 g IV every 8-12hr, not to exceed 6 g/day	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q12-24h, Cr Cl <10 mL/min: q24-48 h). Supplemental dose is required for HD and PD.	*Toxic effects are phlebitis, rash, Diarrhoea and elevated liver function tests.*
Ceftriaxone	1–2g IV q24h	No dose adjustment is required in mild/moderate renal failure.	*Toxic effects are phlebitis, rash, Diarrhoea and elevated liver function tests.*
Cefuroxime	0.125–0.5g q12h (oral) 0.75–1.5g IV q6–8h	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q8-12h, Cr Cl <10 mL/min: q24h). Supplemental dose is required for HD but not PD.	*Diarrhoea and elevated liver function tests.*
Cephalexin	0.25–0.5g q6h (oral only)	In renal failure, increase interval	

		between doses (Cr Cl 10-50 mL/min: q8-12h, Cr Cl <10 mL/min : q12-24h). Supplemental dose is required for HD but not PD	
Ciprofloxacin	(Oral) 0.5–0.75g q12h (IV) 0.2–0.4g q8–12h	In renal failure reduce dose (Cr Cl 10-50 mL/min: to 50%-75%, in Cr Cl <10 mL/min: to 50%). Supplementary dose is indicated in HD and PD.	*Adverse reactions of fluoroquinolones include nausea, dizziness, phototoxicity , and arthropathy.*
Clarithromycin	(oral) 0.25–0.5g q12h; Extended release 1g q 24 h (IV) 500 mg q12h	Cr Cl <30 mL/min reduce dose by 50% and administer q12h - 24h.	*Abnormal taste, Nausea, Vomiting and abdominal pain*
Clindamycin	(Oral) 150-300 mg q6h IV 200-900 mg q8h	No change of dosing is required in renal failure.	*Adverse effects include allergic rashes, neutropenia, thrombocytopenia and anaphylaxis. Pseudomembranous colitis is caused by overgrowth of C difficile which responds to oral metronidazole or vancomycin.*
Gentamicin/Tobramycin	3-6 mg/kg/day IV/IM divided q8h	Treatment in patients with renal failure may be best continued with *non-aminoglycoside* antimicrobials. If an aminoglycoside is strongly indicated careful monitoring of blood levels is required to determine frequency or dose of subsequent administration. (Empirically with a Cr Cl 10-50 mL/min: q12-18h; Cr Cl <10mL/min:	*Ototoxicity* *Nephrotoxicity* *Neurotoxicity*

		q24-48h). Supplemental dose is required in HD and PD.	
Imipenem/cilastin	0.5–1.0 g IV q 6 h	In renal failure both dose and interval between dosing are altered (Cr Cl >50 mL/min: 50-100% of dose q 6-8h; Cr Cl 10-50 mL/min: 25-50% q8h; Cr Cl <10mL/min: 25% q12h). Supplemental dose is required in HD.	*Adverse effects include nausea, vomiting, diarrhoea, eosinophilia, neutropenia, and lowering of the seizure threshold. Imipenem is nephrotoxic.*
Levofloxacin	IV 0.25–0.75 g q24h Oral: 0.25–0.75g q24h		*Nausea , Insomnia ,arthralgia, tendinopathy or arthritis.*
Linezolid	600 mg PO/IV q12hr	No change in dosing is required in renal failure.	Common adverse effects of short-term use include headache, diarrhea, and nausea. Long-term use, can cause bone marrow suppression, thrombocytopenia, peripheral neuropathy, optic nerve damage, and lactic acidosis.
Meropenem	0.5-2g IV q8h	In renal failure, the dosing interval is increased and the dose reduced. (Cr Cl 10-50 mL/min: 50-100% of dose q12h; Cr Cl <10mL/min: 50% of dose q24h). Supplementary dose is required in HD and PD.	*Constipation,Nausea or vomiting and Diarrhea*
Metronidazole (For anaerobic infection)	7.5 mg/kg q6h (not to exceed 4g/day)	No change in dosing is required in mild-moderate renal	

	(oral) 500mg q8-12h	failure. With a Cr Cl < 10 mL/min dose is reduced to 50%. Supplemental dose is required in haemodialsis but not peritoneal dialysis.	*Stevens-Johnson syndrome, Furry tongue, Ataxia*
Piperacillin	100-150 mg/kg/day IV in divided doses q6-12h	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q6-8h, Cr Cl <10mL/min : q12h). Supplemental dose is required for HD but not PD.	*Rash, Hemolytic anemia*
Piperacillin-tazobactam	3.375g-4.5g IV q6h.	In renal failure, the interval between doses is increased and the dose of drug is reduced. (In children, Cr Cl 10-50 mL/min: 70% of dose q6-8h; Cr Cl <10mL/min: 70% of dose q8h). Supplementary dose is required in HD but not PD.	*Diarrhea, Insomnia*
Quinupristin/dalfopristin	7.5 mg/kg q8-12h	No dosage adjustment of is required for use in patients with renal impairment.	*Hyperbilirubinemia, Local edema*
Rifampin	0.3g q8h Or 0.6–0.9g q24h (oral) 0.3g q8h Or 0.6–0.9g q24h	In renal failure Cr Cl 10-50 mL/min administer 50-100% dose. Cr Cl <10mL/min administer 50% of dose. Supplementary dose is not indicated in HD or PD.	*Elevated liver function test*,
Ticarcillin (5.2 mEq Na/g)	3g q4–6 h	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q 6-8 h, Cr Cl <10mL/min : q 12 h). Supplemental dose is required for HD but not PD.	

Ticarcillin-clavulanate (Timentin) (3.1-gram vial containing 3 grams ticarcillin and 100 mg clavulanic acid)	3.1g IV q4–6h	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q 6-8h, Cr Cl <10-50 mL/min: q12h). Supplemental dose is required for HD but not PD	*Phlebitis, myalgia*
Tiecoplanin	400 mg q12h for 3 doses then 200-400mg q24h.	In renal failure Cr Cl 10-50 mL/min reduce dose to 33% on 4th day. Cr Cl <10 mL/min administer 50% of dose;	Adverse effects include, increased risk of ototoxicity and nephro toxicity when given along with aminoglycosides. Increased ototxicity with loop diuretics.
Vancomycin	15 mg/kg q12h (often 1-1.5g q12h)	In renal failure, increase interval between doses (Cr Cl 10-50 mL/min: q24-48 h, Cr Cl <10mL/min: q48-96h). Supplemental dose is required for HD but not PD.	*Rapid IV infusion can cause severe hypotension (incl shock, cardiac arrest), wheezing, dyspnoea, urticaria, pruritis, flushing (Red man syndrome). Vancomycin has been associated with ototoxicity and nephrotoxicity, primarily when used in combination with an aminoglycoside.*