Antibiotic Renal Dosing List

With the age of antibiotic scrutiny upon us and CMS starting to put antibiotics under the microscope, Remedi SeniorCare is happy to provide you with this Antibiotic Renal Dosing List to help you stay compliant. In it you will find renal doses of numerous antibiotics based on your patient's creatinine clearance (CrCl).

Creatinine is a waste product of muscle metabolism derived from creatine and is cleared from the body almost exclusively by the kidneys. In normal patients, the rate of creatinine production equals the amount of creatinine excreted. In order to determine if kidneys are functioning properly and eliminating metabolic waste, the clearance of creatinine is monitored to determine a glomerular filtration rate (GFR), a term often interchanged with creatinine clearance, reported in mLs/min. It measures how many milliliters of fluid are passing through the glomerulus of the kidney in one minute. Age, sex, muscle mass, and medications all play a role in determining the rate.

In the geriatric population, serum creatinine levels are usually elevated, indicating a drop in kidney function normal to aging, and thus a lower creatinine clearance. It can also be lower due to reduced muscle mass, since loss of muscle tissue is another part of the aging process. Because many drugs depend on clearance by the kidneys for elimination, it is important drugs are dosed according to the amount a patient's kidneys can handle.

Most labs will calculate a creatinine clearance when a serum creatinine or a CMP or BMP are ordered. If you can't find one, call your Remedi SeniorCare pharmacist with your patient's age, weight, height, and serum creatinine level, and they will be happy to calculate one for you and furthermore help you determine a proper antibiotic dose that is both safe and effective.

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Antibiotic Renal Dosing Adjustment

Acyclovir (Zovirax)	
Normal renal dosing of 200 mg every 4 hours:	
CrCl > 10 mL/min:	200 mg every 4 hours, 5 times daily
CrCl 0-10 mL/min:	200 mg every 12 hours
Normal renal dosing of 400 mg every 12 hours:	
CrCl > 10 mL/min:	400 mg every 12 hours
CrCl 0-10 mL/min:	200 mg every 12 hours
Normal renal dosing of 800 mg every 4 hours:	
CrCl >25 mL/min:	800 mg every 4 hours, 5 times daily
CrCl 10-25 mL/min:	800 mg every 8 hours
CrCl 0-10 mL/min:	800 mg every 12 hours
Amoxicillin/Amoxicillin-Clavulanate (Amoxil/Augmentin)	
CrCl 10-30 mL/min:	250-500 mg every 12 hours
CrCl < 10 mL/min:	250-500 mg every 24 hours
CrCl < 30 mL/min:	Should not use 875 mg IR or ER tablets
Ampicillin (Principen)	
CrCl > 50 mL/min:	Administer every 6 hours
CrCl 10-50 mL/min:	Administer every 6-12 hours
CrCl < 10 mL/min:	Administer every 12-24 hours
Azithromycin (Zithromax)	
No adjustment required	
Cefadroxil (Duricef)	
CrCl 10-25 mL/min:	Administer every 24 hours
CrCl < 10 mL/min:	Administer every 36 hours
Cefdinir (Omnicef)	
CrCl < 30 mL/min:	300 mg once daily
Cefixime (Suprax)	
CrCl 21-60 mL/min:	Administer 75% of the standard dose
CrCl < 20 mL/min:	Administer 50% of the standard dose
Cefpodoxime (Vantin)	
CrCl < 30 mL/min:	Administer every 24 hours
Cefprozil (Cefzil)	
CrCl < 30 mL/min:	Reduce dose 50%
Ceftaroline (Teflaro)	
CrCl 30-50 mL/min:	400 mg IV every 12 hours
CrCl 15-30 mL/min:	300 mg IV every 12 hours
CrCl < 15 mL/min:	200 mg IV every 12 hours

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Antibiotic Renal Dosing Adjustment

Ceftolozone/Tazobactam (Zerbaxa)	
CrCl 30-50 mL/min:	750 mg IV every 8 hours
CrCl 15-29 mL/min:	375 mg IV every 8 hours
Ceftriaxone (Rocephin)	
No adjustment required unless dose is >2 g/day	
Cefuroxime Axetil (Ceftin)	
CrCl 10-20 mL/min:	Administer every 12 hours
CrCl < 10 mL/min:	Administer every 24 hours
Cephalexin (Keflex)	
CrCl 10-50 mL/min:	500 mg every 8-12 hours
CrCl <10 mL/min:	250-500 mg every 12-24 hours
Ciprofloxacin (Cipro)	
CrCl 30-50 mL/min:	250-500 mg every 12 hours
CrCl <30 mL/min:	500 mg ER every 24 hours
CrCl 5-29 mL/min:	250-500 mg every 18 hours
Clarithromycin (Biaxin)	
CrCl < 30 mL/min:	Half the normal dose or double the dosing interval
Clindamycin (Cleocin)	
No adjustment required	
Doxycycline (Vibramycin)	
No adjustment required	
Erythromycin	
CrCl >10mL/min:	No adjustment required
CrCl <10mL/min:	50-75% of usual dose at same interval (max 2 g/day)
Fluconazole (Diflucan)	
CrCl > 50 mL/min:	No adjustment required
CrCl < 50 mL/min:	Reduce dose by 50%
Fosfomycin (Monurol)	
Specific guidelines not available The half-life increases and urinary excretion decreases as renal impairment progresses	
Ivermectin (Stromectol)	
No adjustment required	

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Antibiotic Renal Dosing Adjustment

Levofloxacin (Levaquin)	
Normal renal dosing of 750 mg/day:	
CrCl 20-49 mL/min:	750 mg every 48 hours
CrCl 10-19 mL/min:	750 mg initial dose, followed by 500 mg every 48 hours
Normal renal dosing of 500 mg/day:	
CrCl 20-49 mL/min:	500 mg initial dose, followed by 250 mg every 24 hours
CrCl 10-19 mL/min:	500 mg initial dose, followed by 250 mg every 48 hours
Normal renal dosing of 250 mg/day:	
CrCl 20-49 mL/min:	No adjustment required
CrCl 10-19 mL/min:	250 mg every 48 hours (except in uncomplicated UTI, where no adjustment required)
Linezolid (Zyvox)	
No adjustment required	
Loracarbef (Lorabid)	
CrCl 10-49 mL/min:	Administer 50% of usual dose at usual interval or usual dose given half as often
CrCl <10 mL/min:	Administer usual dose every 3-5 days
Metronidazole (Flagyl)	
No adjustment required	
Minocycline (Minocin)	
CrCl >10 mL/min:	No adjustment required
ESRD:	Avoid
Moxifloxacin (Avelox)	
No adjustment required	
Neomycin oral	
Dosage should be modified depending on clinical response and degree of renal impairment, but no quantitative recommendations are available	
Nitrofurantoin (Macrobid)	
CrCl <60 mL/min:	Contraindicated (not recommended)

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Antibiotic Renal Dosing Adjustment

Oseltamivir (Tamiflu)	
Treatment:	
CrCl > 30-60 mL/min:	30 mg PO twice daily for 5 days
CrCl > 10-30 mL/min:	30 mg PO once daily for 5 days
CrCl <= 10 mL/min, not undergoing dialysis: Use is not recommended	
Prophylaxis:	
CrCl > 30-60 mL/min:	30 mg PO once daily
CrCl > 10-30 mL/min:	30 mg PO every other day
CrCl <= 10 mL/min, not undergoing dialysis: Use is not recommended	
Penicillin	
CrCl 10-50 mL/min:	Administer every 8-12 hours
CrCl <10 mL/min:	Administer every 12-16 hours
Rifampin (Rifadin)	
No adjustment required	
Sulfamethoxazole/Trimethoprim (Bactrim/Septra)	
CrCl 15-30 mL/min:	Administer 50% recommended dose
CrCl < 15 mL/min:	Use is not recommended
Sulfadiazine	
CrCl 10-50 mL/min:	Extend dosing interval to every 8-12 hours
CrCl < 10 mL/min:	Extend dosing interval to every 12-24 hours
Terbinafine (Lamisil)	
CrCl <= 50 mL/min:	Use is not recommended; clearance reduced by approximately 50%
Tetracycline	
CrCl 50-80 mL/min:	Administer every 8-12 hours
CrCl 10-50 mL/min:	Administer every 12-24 hours
CrCl <10 mL/min:	Administer every 24 hours
Trimethoprim (Proloprim)	
CrCl 15-30 mL/min:	Reduce recommended dose by 50%
CrCl < 15 mL/min:	Use is not recommended
Valcyclovir (Valtrex)	
CrCl 10-50 mL/min:	Administer the full dose every 12-24 hours depending on indication
CrCl < 10 mL/min:	500 mg PO every 24 hours
Vancomycin oral (Vancocin)	
No adjustment required	

References: LEXICOMP, MICROMEDIX HEATHCARE SERIES- Accessed 9/2015