

Table 28.5. Conventional dosage regimens for systemically administered antimicrobial drugs in dogs and cats. The reader is referred to specific chapters in this book for detailed information on activity and adverse effects.

Drug	Route	Dose (mg/kg except as indicated)	Dose interval (h)	Comments
Penicillins				
Flucloxacillin	PO	15	8	Penicillinase-resistant penicillin. Avoid ingesta.
Penicillin G, sodium or potassium	IV, IM, SC	20,000–40,000 U/kg	4–6	May increase plasma sodium or potassium concentration.
Ampicillin sodium	IV, IM, SC	10–20	6–8	Administer IV over 3 minutes.
Ampicillin sulbactam	IV, IM	10–20	8	Administer IV over 3 minutes.
Amoxicillin	PO	10–20	8–12	
Amoxicillin-clavulanate	PO	12.5–25	12	
Ticarcillin disodium, ticarcillin-clavulanate	IV	33–50	4–6	More frequent or higher doses recommended for Gram-negative infections.
Piperacillin sodium/piperacillin-tazobactam	IV	40	6	
Cephalosporins				
Cephalexin	PO	20–30	6–12	Use 30 mg/kg q 12 h for pyoderma. More frequent dosing (q 6–8 h) is required for Gram-negative bacterial infections.
Cefadroxil	PO	22	12	
Cefazolin sodium	IV, IM	20–35	8	22 mg/kg q 2 h during surgery if needed.
Cefpodoxime proxetil	PO	5–10 (dogs)	24	Of all third-generation cephalosporins, most active against staphylococci. Less active against Gram-negative and anaerobic infections.
Cefaclor	PO	15–20	8	For otherwise resistant bacterial infections.
Cefixime	PO	10	12	Use 5 mg/kg q12–24h for resistant bacterial urinary tract infections.
Cefotetan disodium	IV, SC	30	8	For serious and resistant infections. May cause pain on injection.
Cefoxitin sodium	IV, IM	30	6–8	For serious and resistant infections. May cause pain on injection.
Ceftiofur sodium	SC	2.2–4.4 (dogs)	24	For treatment of otherwise resistant urinary tract infections.
Cefotaxime sodium	IV, IM	20–50	6–8	For serious and resistant infections.
Ceftazidime	IV	30	6	For serious and resistant infections. Potent antipseudomonal activity.
Cefepime	IV, IM	40 (dogs)	6	For serious and resistant infections. Reduce dose in renal failure.
Cefovecin	SC	8	14 days	Approved for use for skin and soft tissue infections and in some countries, urinary tract infections. Efficacy for treatment of infections in other sites not established.
Carbapenems				
Imipenem-cilastatin	IV, IM, SC	5	6–8	250–500 mg of reconstituted drug should be added to no less than 100 mL of fluids and administered IV over 30–60 minutes.
Meropenem	IV	8.5 24	12 12	SC injections may cause alopecia at the injection site. For <i>Pseudomonas aeruginosa</i> or infections with MIC values approaching the breakpoint, use 12 mg/kg q 8 h SC or 24 mg/kg q 8 h IV.

Glycopeptides									
Vancomycin	IV	15	8					Reconstituted drug is added to 0.9% NaCl or 5% dextrose and administered over 30–60 minutes. Therapeutic drug monitoring recommended.	
Fluoroquinolones									
Enrofloxacin	PO, IV, IM IM, PO	5–20 (dogs) 5 (cats)	24					Avoid use of enrofloxacin in cats. Reduce dose or increase dosage interval with renal failure. Dilute in fluids (e.g., 1:10 dilution) and infuse IV over 30 minutes. Oral absorption may be limited.	
Ciprofloxacin hydrochloride	PO	20–30	24						
	IV	10							
Marbofloxacin	PO	2.75–5.5	24						
Orbifloxacin	PO	2.5–7.5	24					Orbifloxacin suspension provides lower and more variable plasma levels than the tablets. A dose of 7.5 mg/kg should be used.	
Difloxacin hydrochloride	PO	5–10	24					Urine concentrations may not be sufficient for treating UTIs.	
Moxifloxacin	PO	10	24					Moxifloxacin has enhanced activity against Gram-positive bacteria and anaerobes.	
Pradofloxacin	PO	3–5 (dogs) 5–10 (cats)	24					Pradofloxacin has enhanced activity against Gram-positive bacteria and anaerobes. May not be available in some countries.	
Nitroimidazoles									
Metronidazole	PO	15 (dogs) 10–15 (cats)	12 24					Reduce dose by 50% in animals with hepatic dysfunction. An intravenous solution, metronidazole hydrochloride, is available.	
Metronidazole benzoate	PO	25 (cats)	12					More palatable formulation for cats that may be available from some compounding pharmacies.	
Timidazole	PO	15	12 (dogs) 24 (cats)					Antiprotozoal drug.	
Ronidazole	PO	30	24					For <i>Tritrichomonas foetus</i> infections.	
Rifamycins									
Rifampin	PO	5	12					Preferably use in combination with other drugs. Avoid in animals with hepatic dysfunction. Do not administer with fatty meals. Drug interactions may occur. Monitor liver enzymes with prolonged treatment. May impart a red-orange color to the urine and tears.	
Trimethoprim-sulfonamides									
Sulfadimethoxine	PO	55 on day 1, 27.5 thereafter	24					Isosporiasis with or without a dihydrofolate reductase inhibitor.	
Trimethoprim-sulfamethoxazole, trimethoprim-sulfadiazine	PO, IV	30	12					Dose listed is for combined components, i.e., 5 mg/kg of trimethoprim and 25 mg/kg of sulfonamide. Avoid in animals with hepatic failure. Reduce dose in animals with renal insufficiency. Obtain baseline Schirmer tear test and monitor this and the CBC with prolonged treatment. Each 5-mL vial of the injectable preparation should be diluted in 75–125 mL of 5% dextrose and administered IV over 1 hour.	
Ormetoprim-sulfadimethoxime	PO	55 on first day, then 27.5 (dogs)	24					Dose listed is for combined components. Avoid in animals with hepatic failure. Reduce dose in animals with renal insufficiency. Obtain baseline Schirmer tear test and monitor this and the CBC with prolonged treatment.	

(continued)

Table 28.5. Conventional dosage regimens for systemically administered antimicrobial drugs in dogs and cats. The reader is referred to specific chapters in this book for detailed information on activity and adverse effects. (*continued*)

Drug	Route	Dose (mg/kg except as indicated)	Dose interval (h)	Comments
Aminoglycosides				
Gentamicin sulfate	IV, IM, SC	9–14 (dogs) 5–8 (cats)	24	Ensure adequate fluid and electrolyte balance during treatment. Avoid in animals with renal impairment. Monitor BUN, creatinine, and urinalysis for casts and proteinuria. See gentamicin.
Amikacin	IV, IM, SC	15–30 (dogs) 10–14 (cats)	24	See gentamicin. Reserve for infections resistant to other aminoglycosides. See gentamicin. Less active than gentamicin and amikacin.
Tobramycin sulfate	IV, IM, SC	3–6	24	
Kanamycin sulfate	IV, IM, SC	20	24	
Streptomycin,	PO	20	6	
dihydrostreptomycin	IM, SC	20–30	24	
Neomycin	PO	10–20	6–12	Not absorbed systemically; used to treat hepatic encephalopathy. Use cautiously in animals with renal disease and avoid use for > 14 days.
Chloramphenicol and Related Drugs				
Chloramphenicol	PO, IV, IM	40–50 (dogs) 12.5–20 (cats)	6–8 12	Avoid long-term use in cats. Monitor CBC with long-term use. Warn owners that human exposure to chloramphenicol may cause bone marrow disease. Drug interactions may occur. Avoid in animals with hepatic failure.
Macrolides and Lincosamides				
Erythromycin	PO	10–20	8	Do not administer to rabbits or rodents, as this may cause fatal diarrhea.
Tylosin	PO	7–15	12–24	See erythromycin. For colitis in dogs, use 20 mg/kg q 8h with food, and taper to q 24h if a response occurs. 20 mg/kg is equal to 1/8 teaspoon of tylosin phosphate (Tylan) for a 20-kg dog.
	IM	8–11	12	
Clarithromycin	PO	7.5	12	Serum MIC values may not predict tissue concentrations.
Azithromycin	PO	5–10	24	See erythromycin. A dose of 10 mg/kg PO q 12h has been suggested for pyoderma.
Lincomycin hydrochloride	PO	15–25	12	See erythromycin. For IV administration, dilute 1:10 in 0.9% saline and administer over 30–60 minutes. The oral suspension may be unpalatable to cats. For toxoplasmosis, use 25 mg/kg q 12h PO.
Clindamycin hydrochloride,	PO	11–33 (dogs)	12	
clindamycin phosphate	IV, IM	11 (cats)	24	
		10	12	
Oxazolidinones				
Linezolid	PO, IV	10 (dogs)	8	The use of linezolid should be reserved for Gram-positive infections that are susceptible to linezolid but resistant to all other reasonable alternatives, on the basis of culture and susceptibility testing.
Tetracyclines				
Tetracycline	PO	15–20	8	Do not mix with food containing cations such as calcium, zinc, magnesium, iron, aluminum.
	IV, IM	4.4–10		
Oxytetracycline	PO	20	12	
	IV	7.5–10		
Doxycycline	PO, IV	5	12	For IV administration, dilute in 100 to 1000 mL of LRS or 5% dextrose and administer over 1–2 hours.
		10	24	

Minocycline	PO	5–12.5	12		May not be available in some countries.
Antimycobacterial Drugs					
Clofazimine	PO	4–8 (dog) 25 mg/cat	24		
Ethambutol	PO	15 (dog)	24		
Isoniazid	PO	5–10 (dog max 300 mg daily)	24		May cause neurologic toxicity.
Other Antiprotozoal Drugs					
Allopurinol	PO	10	12		For leishmaniasis in combination with meglumine or miltefosine.
Amprolium	PO	1.25 g of 20% powder	24		
Atovaquone	PO	13.3 (dogs) 15 (cats)	8		Babesiosis and cytauxzoonosis with azithromycin. Administer with food. Drug interactions may occur.
Benznidazole	PO	5–10	12		For Chagas' disease.
Decoquinane	PO	10–20	12		American hepatozoonosis and sarcocystosis. Powder (6% decoquinane; 60 mg active ingredient per gram) is mixed with food. This equates to 0.5–1 tablespoon/10 kg body weight q 12 h.
Diminazene aceturate	Deep IM	3–5	Once		Babesiosis and trypanosomiasis. Narrow therapeutic range.
Fenbendazole	PO	50	24		
Imidocarb dipropionate	Deep IM	6.6 (dogs) 5 (cats)	Once, repeat in 14 days		Large <i>Babesia</i> spp. infections. Caution with hepatic or renal insufficiency. Avoid use in conjunction with other cholinesterase inhibitors.
Nitazoxanide	PO	100 mg/animal	12		Cryptosporidiosis. Efficacy and safety unclear. Vomiting common in cats.
Paramomycin	PO	10	8		Cryptosporidiosis. Caution in animals with diarrhea due to possible systemic absorption. Avoid in cats.
Ponazuril	PO	20–50 (dogs)	12–24		Toxoplasmosis, neosporosis, isosporiasis. Optimal dose, duration, efficacy, and adverse effects unknown.
Pyrimethamine	PO	1	24		Primarily neosporosis, toxoplasmosis, and American hepatozoonosis. Use with a sulfonamide. Use caution with hepatic and renal insufficiency. Monitor CBC. Folic acid supplementation (5.0 mg/day) may be required.
Meglumine antimonate	SC	75–100	24		For leishmaniasis in combination with allopurinol.
Miltefosine	PO	2	24		For leishmaniasis in combination with allopurinol.
Toltrazuril	PO	5–10 (dogs) 18 (cats)	12–24		Hepatozoonosis, isosporiasis. One dose may be effective for isosporiasis. Optimal dose and duration for hepatozoonosis unknown.
Antifungal Drugs					
Amphotericin B deoxycholate	IV	0.5 mg/kg (dogs) 0.25 mg/kg (cats)	Administer on a Monday-Wednesday-Friday basis for 4 weeks or until azotemia develops		Dilute in large volume of 5% dextrose in water. Obtain baseline CBC, kidney panel, and UA and ensure adequate hydration before starting treatment. Recheck kidney panels before each treatment.

(continued)

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Lipid complexed amphotericin B (Abelcet)	IV	3 mg/kg (dogs) 1 mg/kg (cats)	Administer on a Monday-Wednesday-Friday basis for 4 weeks or until azotemia develops	Dilute to 1 mg/ml in D5W. Administer calculated dose IV over 1–2 hours.
Ketoconazole	PO	10–15 (dogs) 5–10 (cats)	12	Do not administer to pregnant animals. Monitor liver enzymes monthly during treatment. Drug interactions may occur. Inhibits adrenal function. Antacids impair absorption.
Fluconazole	PO	5–10 50 mg/cat	12	Do not administer to pregnant animals. Monitor liver enzymes monthly during treatment. Drug interactions may occur.
Itraconazole	PO	5	12–24	Do not administer to pregnant animals. Monitor liver enzymes monthly during treatment. Drug interactions may occur. Use of the oral suspension warrants dose reduction to 3 mg/kg. Monitor serum drug levels after 2 weeks if there is inadequate response to treatment. Compounded formulations are unstable.
Voriconazole	PO	4 (dogs only)	12	Do not use in cats. Use cautiously in animals with liver disease. Also see fluconazole. Consider therapeutic drug monitoring.
Posaconazole	PO	5–10 (dogs) 5 (cats)	12–24 24	Absorption may be improved when daily dose is split into 2–4 doses. Consider therapeutic drug monitoring. Also see fluconazole. Antacids impair absorption.
Flucytosine	PO	25–50	6–8	Monitor CBC. Use cautiously in animals with impaired renal function. Avoid use in dogs. Serum concentration monitoring is recommended in humans.
Griseofulvin (microsized)	PO	25	12	Administration with fatty food improves absorption. Dose may be increased to 50 mg/kg q 12 h for refractory infections. Avoid in cats with FIV infections. Do not use in pregnancy. Drug interactions possible. Monitor CBC.
Griseofulvin (ultramicrosized)	PO	15	12	Avoid in cats with FIV infections. Do not use in pregnancy. Drug interactions possible. Monitor CBC.
Terbinafine	PO	30–40	24	Administer with food.