

Neonatal Drug Doses 2016

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Antimicrobials				
Drug	Dose	Route	Frequency	Notes
Amikacin sulfate - < 1 wk old	30-35 mg/kg	IV	SID	Need to run levels to adjust dose Peak >60 (MIC < 16 S; >32 R) Trough < 2
Amikacin sulfate – 2-4 wk old	20-25 mg/kg	IV	SID	Need to run levels to adjust dose Peak >60 (MIC < 16 S; >32 R) Trough < 2
Na Ampicillin	50 - 100 mg/kg	IV	QID	
Amoxicillin trihydrate	20-30? mg/kg	PO	TID?	Poorly absorbed foals > 2-3 wks
Azythromycin	10 mg/kg	PO	SID 5 days, then Q48H	Davis JL. Gardner SY. Jones SL. et al. Pharmacokinetics of azithromycin in foals after i.v. and oral dose and disposition into phagocytes. <i>J Vety Pharmy & Therap.</i> 25(2):99-104, 2002; Jacks S. Giguere S. Gronwall PR. et al: Pharmacokinetics of azithromycin and concentration in body fluids and bronchoalveolar cells in foals. <i>AJVR.</i> 62(12):1870-5, 2001
Cefotaxime	50-100 mg/kg	IV	QID	
Cefpodoxime proxetil	10 mg/kg	PO	QID/BID	3 rd generation; data from 7-14 d foals, 3-4 m foals; max serum level 0.81+- 0.22, half life 7.2 hr; Carrillo NA et al <i>AJVR</i> 66(1):30-35, 2005.
Cefuroxime axetil (Ceftin)	30 mg/kg/day	PO	BID, TID	
Cefuroxime Na (Ceftin)	50-100 mg/kg/day	IV	TID	Orthoped 150 mg/kg/day tid with oral followup; meningitis 200-240 mg/kg/day divided tid/qid (good levels in meningitis).
Cephalexin	10 mg/kg	PO	QID	
Ceftiofur (Naxcel)	10 mg/kg	IV	QID	levels drop rapidly in septic foals; IV slow infusion over 20 minutes
Ceftiofur (Naxcel)	1.5 mg/kg/hr	IV	CRI	In 3 hour aliquots
Chloramphenicol palmitate	50 mg/kg	PO	QID	public health cautions
Chloramphenicol succinate	10 -25 mg/kg	IV	QID	public health cautions

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Clarithromycin	7.5 mg/kg	PO	BID	Jacks S, et al: J Vet Pharmacol Ther 2002 Oct;25(5):359-362.
Doxycycline	10 mg/kg	PO	BID	J. vet. Pharmacol. Therap. 30, 187–193: adequate for the treatment of bacteria with a MIC <= 3 ug/mL; most <i>Pasteurella</i> spp., <i>Actinobacillus</i> spp., <i>Staphylococcus</i> spp., <i>b-hemolytic streptococci</i> , <i>Rhodococcus equi</i> , <i>Borrelia burgdorferi</i> , <i>Neorickettsia risticii</i> , and <i>Anaplasma phagocytophilum</i> ; also include approximately 50% of <i>Escherichia coli</i> and <i>Klebsiella</i> spp. isolates
Enrofloxacin	2.5-10 mg/kg	IV, PO	SID	Quinolone-induced arthropathies; 1-3 weeks old foals; IV and oral have similar kinetics; T1/2 IV -- 16.5 hrs., T1/2 oral -- 18.27 hrs; poor choice for streps;
Erythromycin stearate	20-30 mg/kg	PO	QID	
Erythromycin lactobionate	≥5 mg/kg	IV	Q4-6H	
Gentamicin sulfate	20-25 mg/kg	IV	SID	Peak > 40 (MIC < 4 S; > 8 R) Trough < 2
Imipenem	10-20 mg/kg	IV	QID	Conc < 5mg/ml
Imipenem	0.4-0.8 mg/kg/hr	IV	CRI	
Minocycline	3-4 mg/kg	PO	BID	Equine Vet J. 2012 Jul;44(4):453-8. Am J Vet Res. 2010 Sep;71(9):1062-6.
Metronidazole – systemic infections	15 mg/kg	PO/PR	QID	
Metronidazole – enteric infections	15 mg/kg	PO	BID	
Oxytetracycline	5-10 mg/kg	IV	BID	Some forms ppt in NaCl
K Penicillin	20,000-50,000	IV	QID	Reconstituted can be stored refrigerated for up to 7 days.
Na Penicillin	U/kg			
Rifampin	5 mg/kg	PO	BID	

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Drug	Dose	Route	Frequency	Notes
Ticarcillin	50 - 100 mg/kg	IV	QID	
Ticarcillin + clavulanic acid Timentin®	50 - 100 mg/kg	IV	QID	Very hyperosmotic solution (~3000 mOsm)
Ticarcillin + clavulanic acid Timentin®	8 – 16 mg/kg/hr	IV	CRI	
Fluconazole	8 mg/kg - loading 4 mg/kg	PO	SID	
Trimethoprim potentiated sulfa	30 mg/kg	PO	BID	5 mg/kg of the trimethoprim fraction

Gastrointestinal Drugs				
Drug	Dose	Route	Frequency	Notes
Bismuth subsalicylate	½-2 oz	PO	Q4-6H	
Cimetidine	10-20 mg/kg	PO	QID	
Cisapride	0.1-0.2 mg/kg	PO/PR	Q4-8H	
Erythromycin (prokinetic)	2-25 mg/kg	IV	Q4-8H	
Loperamide	0.1- 0.5 mg/kg	PO	QID	watch for gas retention (colic), constipation; antidote -- naloxone
Milk of Magnesia	2 - 4 oz/kg	PO/enema	SID (BID)	
Ranitidine	0.8-2.2 mg/kg 5-10 mg/kg	IV PO	QID	
Sucralfate	0.1 - 0.2 mg/kg/day	PO	divided QID/BID	

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Anticonvulsives				
Drug	Dose	Route	Frequency	Notes
Diazepam	0.05 - 0.4 mg/kg	IV	5 mg boluses	
Phenobarbital	2-3 mg/kg	IV over 15-20 min	boluses over 15-20 min to effect	Caution: half life up to 200 hrs; decreases thermoregulatory control, respiratory drive, BP, causes upper airway obstruction
	0.5 mg/kg	PO	BID/TID?	
Phenytoin	5-10 mg/kg loading; 1-5 mg/kg	IV	Q2-4H for 1 st 12 hrs??	

Analgesics				
Drug	Dose	Route	Frequency	Notes
Butorphenol	0.01-0.04 mg/kg	IV		
	0.02-0.08 mg/kg	IM		
Flunixin meglumine	1.4 mg/kg (< 24 hr); 1.1 mg/kg (1 wk – 4 wk)	IM/IV	SID	Analgesic; long half life; foals < 24 hr: Crisman MV, Wilcke JR, Sams RA. Am J Vet Res. 1996 Dec; 57(12):1759-61.
	0.25 mg/kg	IM/IV	TID	“antiendotoxic dose”
Phenylbutazone	2.2 mg/kg	IV/PO	SID/BID	long half life
Xylazine	0.2-0.5 mg/kg	IV		can cause pulmonary edema

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Inotropes/pressors:				
Drug	Dose	Route	Frequency	Notes
Dopamine	3-20 µg/kg/min	IV drip	CRI	Rule of 6: 6 X wt (kgs) = # mg to add to 100 ml saline so that 1 ml/hr = 1 µg/kg/min.
Dobutamine	3-40 µg/kg/min	IV drip	CRI	
Epinephrine	0.2-2 µg/kg/min	IV drip	CRI	Rule of 0.6: 0.6 X wt (kgs) = # mg to add to 100 ml saline so that 1 ml/hr = 0.1 µg/kg/min.
Norepinephrine	0.2-3 µg/kg/min	IV drip	CRI	
Vasopressin	0.25-2 mU/kg/min	IV drip	CRI	

Other Drugs:				
Drug	Dose	Route	Frequency	Notes
Albuterol – for hyperkalemia	7 µg /kg IV 0.15-0.3 mg/kg neb	IV over 15 min nebulization	once	Caution – from human dose: IV dose decrease K ~ 1 meq/l max 30-60 min; nebulization dose decrease K ~ 0.6 – 1 meq/l max 30-60 min; lasts 2 hr; combined with insulin K drop 1.2 meq/l at 60 min; tachycardia may occur; 40% people show no drop so combine with insulin; ref – Weisberg, CCM 2008;36:3246-3251.
Aminocaproic acid	3.5 mg/kg/min 20 min loading; 0.25 mg/kg/min for 4-6 hrs	IV	4-6 hr infusion	Longer infusion increases risk of thrombotic disease (Ross Am J Vet Res. 2007 Sep;68(9):1016-21) maintain blood concentrations > 130 µg/mL

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Drug	Dose	Route	Frequency	Notes
Aminophylline	2-3 mg/kg??	IV	BID-QID	Monitor theophylline levels: therapeutic 6-12 µg /l ; toxic > 20 µg/l; Concurrent use of erythromycin will ↑ theophylline levels to toxic range
Caffeine	10 mg/kg (loading dose) 10 mg/kg (maintenance dose)	PO/PR	SID/BID	Steady state levels 5-20 µg/l; toxic levels >50-75 µg/l
Ca-PO4-Mg cocktail	Add to each liter crystalloid fluids	IV	CRI	Ca gluconate 30 ml (0.642 mg/ml) + K ₂ PO ₄ 1.2 ml (0.1 mg/ml PO ₄) + MgSO ₄ 50% 0.15 ml (0.075 mg/ml) Run at dry fluid rate for a 50 kg foal 29 mg Ca/kg/day (1.45 mEq Ca/kg/day) 5 mg P/kg/day (0.16 mEq P/kg/day) 3.4 mg Mg/kg/day (0.28 mEq Mg/kg/day)
Cortisol (Solu-cortef)	1 mg/kg	IV	QID	For severe sepsis/septic shock Cortisol replacement Rx
Deferoxamine	1 gm/foal	SQ	BID	has been shown to increase iron elimination and reduce liver iron in foals following high volume RBC transfusion (PC from Chris Sanchez)
DMSO	1 gm/kg	IV	Once	Dilute in 250-500 mls fluid (very hyperosmotic)
Domperidone	1.1 mg/kg	PO	SID	Fescue toxicity/ hypogalactia
Furosemide	0.25 - 1 mg/kg	IV Bolus		
Heparin	40-100 U/kg	SQ/IV	BID	
Insulin (protamine zinc)	0.15 u/kg	IM/SQ	BID	
Insulin (regular)	0.00125-0.2 u/kg/hr	IV drip	CRI	Pre-treat lines; special handling

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Drug	Dose	Route	Frequency	Notes
Insulin (regular) – for hyperkalemia	0.15u/kg bolus	IV bolus	bolus	Caution: Based on adult human dose 10u Need IV glucose to avoid hypoglycemia. Onset 15 min; max 30-60 min; low K by 0.6 meq/l; CRI not better; ref – Weisberg, CCM 2008;36:3246-3251.
Levamisole	2.2 mg/kg	PO	SID	for 3 days, skip 4 days – repeat
Mannitol - 20%	0.25-1 gm/kg	IV push	Q4-6H	rapid infusion over 10 - 15 min target 310-320 mOsm
MgSO ₄	Loading dose - 50 mg/kg/hr 1 st hr Maintenance dose - 25 mg/kg/hr		CRI	
Naloxone	0.1 mg/kg	IV	Once	
Nebulization formula	15 ml 5%Na HCO ₃ + 15 ml NaCl + bronchodilator use 10 ml/treatment bronchodilator: terbutaline (0.001-0.007 mg/kg Q4-6H) albuterol (0.001-0.01 mg/kg Q6-8H) epinephrine Also can add: Acetylcysteine (3-4 ml of 10% solution Q6-8H) Furosemide			
Nebulized furosemide	1 mg/kg	Nebulization	Q 4-6 H	J Pediatrics 1994;125:976-9; Pediatric Research 1995;37:346A
NO	2-10 ppm	Insufflation	constant	
Phenazopyridine (Pyridium)	4 mg/kg	PO	BID/TID	
Reserpine	2-4 mg/horse/day	PO	SID	For hypogalactia - response in 4-5 days
Sildenafil	0.5-2.5 mg/kg	PO/PR	as needed	

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Terbutaline – for hyperkalemia	7 µg /kg	SQ	once	Caution – from human dose: decrease K ~ 1.3 meq/l max at 60 min; parenteral alternative to albuterol; tachycardia may occur; ref – Weisberg, CCM 2008;36:3246-3251.
Yunnan Paiyao	8 mg/kg	PO	QID	Herbal mix – approximately 250 mg total herbs per capsule (246 mg/ cap)

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