ERYthromycin

Indication	• Treatment of infections due to susceptible gram-positive and gram-negative organisms[1] o Chlamydia trachomatis, mycoplasma, ureaplasma[2] o Azithromycin or clarithromycin preferred for pertussis treatment or prevention

ORAL

Presentation	• Powder for oral solution: 200 mg in 5 mL
Dosage[3,4]	

Dose	Day of life	Frequency
10 mg/kg	0–7 days	every 12 hours
	8–28 days	every 8 hours
	29 or more	every 6 hours

Preparation	• Add water for injection to dry powder according to label instructions • Shake vigorously
Administration	• Draw up prescribed dose into oral/enteral syringe • Oral/OGT/NGT

INTRAVENOUS

Presentation	• Vial: 1 g
Dosage[3,4]	

Dose	Day of life	Frequency
10 mg/kg	0–7 days	every 12 hours
	8–28 days	every 8 hours
	29 or more	every 6 hours

Preparation (Step 1: all babies)	• Add 3 mL of water for injection to 1 g vial • Withdraw entire contents and make up to 20 mL total volume with water for injection[5] o *Concentration now equal to 50 mg/mL* • Draw up DOUBLE the prescribed dose from the 50 mg/mL solution • Then prepare according to either **criteria A or criteria B**
Preparation (Criteria A)	• Baby: 2.5–5 kg **without** CVL o Further dilute to a maximum concentration[6] of 5 mg/mL with 0.9% sodium chloride o Prime the infusion line and reduce total syringe volume by half o *Prescribed dose in remaining half of syringe volume*
Preparation (Criteria B)	• Baby 2.5–5 kg **with** CVL **OR** baby less than 2.5 kg (with or without CVL) o Further dilute to a maximum concentration of 10 mg/mL with 0.9% sodium chloride o Prime the infusion line and reduce total syringe volume by half o *Prescribed dose in remaining half of syringe volume*
Administration	• IV infusion via syringe driver pump over 60 minutes o Via PVL[6]: maximum concentration of 5 mg/mL o Via CVL[6]: maximum concentration of 10 mg/mL • On completion, disconnect syringe and infusion line • Flush access port at same rate as infusion

Special considerations	• Higher dosage may be required for chlamydia infection (12.5 mg/kg every 6 hours)[2] o Seek expert advice (e.g. consultant/pharmacist) before prescribing • Caution o If co-administered with any drug metabolised by cytochrome P450 enzyme (CYP3A4)[1] o Cardiac toxicity reported in preterm neonates[7] o Serious ventricular arrhythmias reported in adults with IV doses[5] of 1 g o Avoid in acute porphyria[8] • UAC route: Consult with neonatologist/paediatrician and refer to Queensland Clinical Guideline: *Neonatal medicines*[9]

Monitoring	• Extravasation risk: may cause severe tissue damage[6] • High doses IV may cause pain along the vein[6]
Compatibility	• Fluids o 0.9% sodium chloride[6] • Y-Site o Aciclovir[6], amikacin[6], amiodarone[6], atracurium[6], azathioprine[6], calcium gluconate[6], cefotaxime[6], ceftriaxone[6], dexmedetomidine[6], esmolol[6], fluconazole[6], foscarnet[6], gentamicin[6], hydrocortisone sodium succinate[6], hydromorphone[6], midazolam[6], morphine sulfate[6], suxamethonium[6], tobramycin[6], verapamil[6], zidovudine[6]
Incompatibility	• PN and fat emulsion: co-infusion with ERYthromycin not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after • Fluids o Glucose solutions[4] • Y site o Cefalotin[6], cefazolin[6], dexamethasone[6], flucloxacillin[6], furosemide (frusemide)[6], heparin sodium[6], linezolid[6], phenobarbital (phenobarbitone)[6], phenytoin[6], rocuronium[6]
Interactions	• Increases concentration of digoxin, midazolam and carbamazepine[8]
Stability	• Vial o Store below 25 °C[5] • Oral solution o Store reconstituted solution in the fridge at 2–8 °C and use within 10 days
Side effects	• Circulatory: prolonged QT interval and ventricular arrhythmias associated with IV use, particularly related to rapid administration and high doses[7] • Digestive: vomiting[1], diarrhoea[1], infantile hypertrophic pyloric stenosis (associated with longer term use of ERYthromycin in neonates, especially those aged less than 2 weeks[1]) • Nervous: ototoxicity (after high doses in patients with impaired renal or hepatic function[2]) • Hypersensitivity: rashes, pruritus, urticaria or angioneurotic oedema. Anaphylaxis has been reported[1]
Actions	• Macrolide antibiotic that inhibits protein synthesis and thereby bacterial growth[1]
Abbreviations	IV: intravenous, CVL: central venous line, OGT: orogastric tube, PVL: peripheral venous line NGT: nasogastric tube
Keywords	Erythromycin, ERYthromycin, antibiotic, macrolide

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

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