

cefaZOLin

Indication		• Treatment of susceptible gram-positive and gram-negative infections ¹		
INTRAVENOUS	Presentation	<ul style="list-style-type: none"> • Vial: 500 mg 1 g • 25 mg/kg (frequency according to current gestational age and days of life) 		
	Dosage²	Current gestational age (weeks)	Days of life	Frequency
		29+6 or less	0–28	every 12 hours
			29 or more	every 8 hours
		30+0–36+6	0–14	every 12 hours
			15 or more	every 8 hours
37+0–44+6		0–7	every 12 hours	
	8 or more	every 8 hours		
45+0 or more	0 or more	every 6 hours		
Dosage (severe infection)	<ul style="list-style-type: none"> • If aged 8 days or more, AND weight more than 2 kg, then dose may be increased to 50 mg/kg every 8 hours³ 			
Preparation	<ul style="list-style-type: none"> • 500 mg vial⁴ <ul style="list-style-type: none"> ○ Add 4.8 mL of water for injection ○ <i>Concentration now equal to 100 mg/mL</i> • 1 g vial⁴ <ul style="list-style-type: none"> ○ Add 5 mL of water for injection to vial ○ Withdraw entire contents and make up to 10 mL total volume with water for injection ○ <i>Concentration now equal to 100 mg/mL</i> 			
	Administration	<ul style="list-style-type: none"> • Draw up prescribed dose • IV injection over 3–5 minutes^{2,4} 		



IM	Presentation	<ul style="list-style-type: none"> • Vial: 500 mg 1 g • 25 mg/kg (frequency according to gestational age and days of life) 		
	Dosage²	Current gest age (weeks)	Days of life	Frequency
		29+6 or less	0–28	every 12 hours
			29 or more	every 8 hours
		30+0–36+6	0–14	every 12 hours
			15 or more	every 8 hours
37+0–44+6		0–7	every 12 hours	
	8 or more	every 8 hours		
45+0 or more	0 or more	every 6 hours		
Preparation	<ul style="list-style-type: none"> • 500 mg vial⁴ <ul style="list-style-type: none"> ○ Add 2 mL of water for injection (or lidocaine (lignocaine) 1%) ○ Shake well and warm in hands to aid dissolution ○ <i>Concentration now equal to 225 mg/mL</i> • 1 g vial⁴ <ul style="list-style-type: none"> ○ Add 2.5 mL of water for injection (or lidocaine (lignocaine) 1%) ○ Shake well and warm in hands to aid dissolution ○ <i>Concentration now equal to 330 mg/mL</i> 			
	Administration	<ul style="list-style-type: none"> • Draw up prescribed dose • Intramuscular injection into thickest part of the vastus lateralis in the anterolateral thigh (maximum 0.5 mL per site) 		



Special considerations	<ul style="list-style-type: none"> • If renal impairment, low urinary output or prolonged use, may need dosage adjustment⁵ • If co-prescribed, give antibiotic with shortest duration of administration first (so antibiotic cover commences asap) <ul style="list-style-type: none"> ◦ Do not mix in the same injection or infusion solution; flush before and after • Route of administration <ul style="list-style-type: none"> ◦ Not for intraventricular use ◦ IM route only if IV route not available ◦ UAC route: consult with neonatologist/paediatrician prior to use and refer to Queensland Clinical Guideline: <i>Neonatal medicines</i>⁶ • Current gestational age is the same as <i>postmenstrual age</i> (PMA)
Monitoring	<ul style="list-style-type: none"> • Nil required
Compatibility	<ul style="list-style-type: none"> • Fluids <ul style="list-style-type: none"> ◦ 5% glucose⁴, 10% glucose⁴, 0.9% sodium chloride⁴ • Y-site <ul style="list-style-type: none"> ◦ Aciclovir⁴, atracurium⁴, aztreonam⁴, calcium gluconate⁴, ciclosporin⁴, clindamycin⁴, dexamethasone⁴, dexmedetomidine⁴, digoxin⁴, esmolol⁴, fentanyl⁴, filgrastim⁴, fluconazole⁴, foscarnet⁴, furosemide⁴, glyceryl trinitrate⁴, granisetron⁴, heparin sodium⁴, hydrocortisone sodium succinate⁴, indomethacin⁴, lidocaine⁴, linezolid⁴, methylprednisolone sodium succinate⁴, metoclopramide⁴, midazolam⁴, morphine sulfate⁴, nicardipine⁴, noradrenaline (norepinephrine)⁴, potassium chloride⁴, ranitidine⁴, sodium bicarbonate⁴, sodium nitroprusside⁴, suxamethonium⁴, vecuronium⁴
Incompatibility	<ul style="list-style-type: none"> • PN and fat emulsion: co-infusion with cefaZOLin not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after • Fluids <ul style="list-style-type: none"> ◦ No information⁴ • Drugs <ul style="list-style-type: none"> ◦ Aminoglycosides (amikacin, gentamicin, tobramycin)⁴, azathioprine⁴, calcium chloride⁴, caspofungin⁴, cefotaxime⁴, dobutamine⁴, dopamine⁴, erythromycin⁴, ganciclovir⁴, haloperidol lactate⁴, hydralazine⁴, isavuconazole⁴, mycophenolate mofetil⁴, protamine⁴, pyridoxine⁴, rocuronium⁴
Interactions	<ul style="list-style-type: none"> • IV aminoglycosides are inactivated by IV cephalosporins, penicillins and teicoplanin⁷ • Co-administration with aminoglycosides may produce additional nephrotoxic effects⁸ • False positive direct and indirect Coombs tests have occurred in neonates receiving cefazolin or whose mother received cefazolin prior to birth⁸
Stability	<ul style="list-style-type: none"> • Vial: store below 25 °C. Protect from light¹
Side effects	<ul style="list-style-type: none"> • Hypersensitivity reactions: rare in neonates. May present as erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques⁹⁻¹²) • Blood pathology: eosinophilia², leucopenia⁸ • Digestive: diarrhoea⁸, colitis⁸ • Muscular-skeletal: pain at the site of IM injection⁸, phlebitis⁸
Actions	<ul style="list-style-type: none"> • Bactericidal via inhibition of cell wall synthesis⁸
Abbreviations	IM: intramuscular, IV: intravenous; UAC: umbilical arterial catheter;
Keywords	Antibiotic, cephalosporin, infection, cephalazolin, cefazolin

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.

References

1. Therapeutic Goods Administration (TGA). Cefazolin: product information. [Internet]. Canberra: Australian Government; Jan 2020 [cited 2020 October 14]. Available from: <https://www.tga.gov.au>.
2. IBM Micromedex®Neofax®. Cefazolin In: IBM Micromedex® NeoFax®/Pediatrics (electronic version). IBM Watson Health, Greenwood Village, Colorado, USA. June 2020 [cited 2020 June 01]. Available from: <http://neofax.micromedexsolutions.com/neofax>.
3. De Cock R, Smits A, Allegoert K, de Hoon J, Saegeman V, Danhof KC. Population pharmacokinetic modelling of total and unbound cefazolin plasma concentrations as a guide for dosing in preterm and term neonates. *Journal of Antimicrobial Chemotherapy*, 2014;69:1330-8.
4. Australian Injectable Drugs Handbook. Nicolette Burridge, Keli Symons, editors. Cefazolin. 7th ed. [Internet]. New South Wales: Society of Hospital Pharmacists of Australia (SHPA); May 2020 [cited 2020 June 01]. Available from: <https://aidh.hcn.com.au>.
5. Australian Medicines Handbook Children's Dosing Companion. Cefazolin. [Internet]. Adelaide: Australian Medicines Handbook Pty Ltd; January 2019 [cited 2019 May 09]. Available from: <https://amhonline.amh.net.au>.
6. Queensland Clinical Guidelines. Neonatal medicines. Guideline No. MN19.54-V1-R24. [Internet]. Queensland Health. 2019. [cited 2021 January 15]. Available from: <https://www.health.qld.gov.au/gcg>
7. Royal Children's Hospital. Cefotaxime. In Paediatric Injectable Guidelines. [Internet]. January 2019 [cited 2019 May 16]. Available from: <https://pig.rch.org.au/monographs/calcium-gluconate/>.
8. MIMS Online. Cefazolin. [Internet]: MIMS Australia; June 2017 [cited 2019 March 8]. Available from: <https://www.mimsonline.com.au>.
9. Carder KR. Hypersensitivity reactions in neonates and infants. *Dermatol Ther* 2005;18(2):160-75.
10. Lohmeier K, Megahed M, Schulte KW, Stannigel H, Mayatepek E, Schroten H. Toxic epidermal necrolysis in a premature infant of 27 weeks' gestational age. *Br J Dermatol* 2005;152(1):150-1.
11. Martini S, Alessandrini R, Arcuri S, Faldella G. Vancomycin-induced red man syndrome presentation in a preterm infant. *Pediatr Dermatol* 2018;35(6):e408-e9.
12. Maulidi H, Godambe S, Chow P. Suspected drug reaction with piperacillin/tazobactam, in a premature infant. *Br J Clin Pharmacol* 2008;65(6):971-2.

Document history

ID number	Effective	Review	Summary of updates
NMedQ20.053-V1-R25	30/10/2020	30/10/2025	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)
NMedQ20.053-V1-R25	13/08/2021	30/10/2025	<ul style="list-style-type: none"> • Amended gestational age to current gestational age • Added severe infection dosing regimen • Amended instructions for co-prescription with aminoglycosides to clarify order of administration • Deleted UAC icon and amended instructions for use

QR code

