Alert	The Antimicrobial Stewardship Team recommends this drug is listed under the following category: Unrestricted.
Indication	Treatment of infections caused by susceptible organisms: Gram positive bacteria (Streptococci and Staphylococci including beta-lactamase producing Staphylococci) and gram negative bacteria (*Escherichia coli* and some *Klebsiella* species, provided these are reported susceptible to cefazolin).
Action	Bactericidal. Inhibits bacterial wall synthesis of actively dividing cells by binding to one or more penicillin binding proteins.
Drug Type	Antibiotic: First generation cephalosporin.
Trade Name	Cefazolin Sandoz, Cefazolin-AFT, Hospira Cefazolin, Kefzol, Cephazolin Alphapharm
Presentation	1 g vial.
Dosage / Interval	

Post natal age	Weight (g)	Dose	Interval
< 8 days	< 2000	25 mg/kg/dose	12 hourly
	≥ 2000	50 mg/kg/dose	12 hourly
≥ 8 days	< 2000	25 mg/kg/dose	8 hourly
	≥ 2000	50 mg/kg/dose	8 hourly

Route	IV infusion (preferable) IV injection IM
Preparation/Dilution	IV Infusion: Add 9.5 mL WFI to the 1 g powder for reconstitution to make a concentration of 100 mg/mL. Further draw up 5 mL (500 mg) and add 15 mL of sodium chloride 0.9% to make a final volume of 20 mL with a concentration of 25 mg/mL. IV injection: Add 9.5 mL WFI to the 1 g powder for reconstitution to make a concentration of 100 mg/mL. IM: Add 2.5 mL WFI to the 1 g powder for reconstitution to make a concentration of 330 mg/mL.
Administration	IV infusion: Infuse over 30 minutes (10-60 minutes). IV injection: Slow injection over 5 minutes. IM injection: Inject deep into large muscle mass.
Monitoring	Serum concentrations are not routinely monitored. Monitor renal function and complete blood count during prolonged (> 10 days) and/or high-dose treatment.
Contraindications	History of allergy to cephalosporins, anaphylaxis to penicillin or carbapenem.
Precautions	Sodium restriction — each gram of cefazolin contains 48.3 mg (2.1 mmol) sodium. May increase risk of bleeding due to its effect on clotting factors. Impaired renal function: consider reducing dose as seizures may occur if inappropriately high doses are administered.
Drug Interactions	Administration with other drugs, particularly aminoglycosides may increase risk of nephrotoxicity.
Adverse Reactions	Thrombophlebitis, pruritus, rash, diarrhoea, nausea, oral candidiasis, pseudomembranous colitis, vomiting, Stevens Johnson Syndrome, *Clostridium difficile* colitis, positive Coombs test, eosinophilia, leukopenia, neutropenia, thrombocytopenia, thrombocytosis, blood coagulation disorder, raised liver enzymes, candidiasis, raised urea, creatinine and renal failure.
Compatibility	Fluids: Glucose 5%, glucose 10%, glucose in sodium chloride solutions, Hartmann's, sodium chloride 0.9%, water for injections. Compatible via Y-site: Aciclovir, amifostine, anidulafungin, atracurium, aztreonam, bivalirudin, dexmedetomidine, esmolol, filgrastim, fluconazole, foscarnet, granisetron, heparin sodium, linezolid, magnesium sulfate, midazolam, morphine sulfate, palonosetron, pancuronium, pethidine, remifentanil, vecuronium.

Incompatibility	Fluids: No information Drugs: Aminoglycosides − amikacin, gentamicin, tobramycin; ascorbic acid, azathioprine, calcium chloride, caspofungin, chlorpromazine, dobutamine, dolasetron, dopamine, erythromycin, ganciclovir, haloperidol lactate, hydralazine, mycophenolate mofetil, pentamidine, promethazine, rocuronium.
Stability	Stable for 24 hours below 25°C. However store at 2 to 8°C and use as soon as possible. Crystals may form if the solution is refrigerated. Redissolve by shaking the vial and warming in the hands.
Storage	Store below 25°C. Protect from light.
Special comments	Poor penetration into cerebrospinal fluid therefore not suitable for infections of the CNS. Renally excreted as unchanged drug. Not metabolised. Half-life in neonates is 3 to 5 hours. Cefazolin is highly bound to serum albumin −only the unbound cefazolin is pharmacologically active. Water for injection is the preferred diluent. Crystals may form when cefazolin is reconstituted with sodium chloride 0.9% to a concentration of 330 mg/mL. The crystals formed are small and may be overlooked. Redissolve by warming the vial in hands until the solution is clear.
Evidence summary	The dosing regimen adopted by the consensus group is based on a neonatal pharmacokinetic model taking into account total and unbound cefazolin concentrations with saturable plasma protein binding.[6] A prospective validation of this dosing regimen is needed.
References	1. Hey E. (Ed) [2003]. Neonatal Formulary 4th Edition. BMJ Publishing Group, London 2. MIMSOnline Cited: 15/05/2015. 3. Micromedex® 2.0, (electronic version). Truven Health Analytics, Greenwood Village, Colorado, USA. Available at: http://www.micromedexsolutions.com.acs.hcn.com.au Cited 15/4/2015. 4. Australian Medicine Handbook 2015 (online). Adelaide: Australian Medicines Handbook Pty Ltd; 2015 January. 5. Antibiotic Expert Groups. Therapeutic guidelines: antibiotic. Version 15. Melbourne: Therapeutic Guidelines Limited; 2014. 6. De Cock R, Smits A, Allegoert K et al. Population pharmacokinetic modelling of total and unbound cefazolin plasma concentrations as a guide for dosing in preterm and term neonates. Journal of antimicrobial chemotherapy. Doi:10.1093/jac/dkt527 2013 7. Pacifici G. Pharmacaokinetics of cephalosporins in the neonate: a review. Clinics 2011;66(7):1267-1274

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