cefTAZidime
Newborn use only

2022

Alert	High risk medicine. The Antimicrobial Stewardship Team recommends this drug is listed under the following category: Restricted.
Indication	Treatment of meningitis and sepsis caused by susceptible gram-negative organisms (especially *Pseudomonas aeruginosa*) and susceptible gram-positive organisms.
Action	Bactericidal agent which inhibits cell wall synthesis in susceptible bacteria.
Drug type	Cephalosporin antibiotic.
Trade name	Ceftazidime Alphapharm, Ceftazidime Aspen, Ceftazidime Juno Ceftazidime Sandoz, Fortum, Hospira Ceftazidime.
Presentation	1 g and 2 g vial
Dose	**50 mg/kg/dose**

Corrected Gestational Age/Postmenstrual Age	Postnatal Age	Interval
< 30^{+0} weeks	0–28 days	12 hourly
< 30^{+0} weeks	29+ days	8 hourly
30^{+0}–36^{+6} weeks	0–14 days	12 hourly
30^{+0}–36^{+6} weeks	15+ days	8 hourly
37^{+0}–44^{+6} weeks	0–7 days	12 hourly
37^{+0}–44^{+6} weeks	8+ days	8 hourly
≥ 45 weeks	0+ days	8 hourly

Dose adjustment	Renal impairment: Consider increasing dosage interval in those with significant renal impairment.
Maximum dose	150mg/kg/day
Total cumulative dose	
Route	IV, IM
Preparation	**IV bolus** 1 g vial: Add 8.9 mL of water for injection to the 1 g vial to make a 100 mg/mL solution (refer to special comments) OR 2 g vial: Add 8.2 mL of water for injection to the 2 g vial to make a 200mg/mL solution. Draw up the entire contents of the vial and add water for injection to make a final volume of 20 mL with a final concentration of 100 mg/mL. **<u>IV Infusion</u>** Add 8.9 mL water for injection to the 1 g vial to make 100 mg/mL solution OR Add 8.2 mL of water for injection to the 2g vial to make 200 mg/mL. **FURTHER DILUTE** From the 1 g vial Draw up 3 mL (300 mg of ceftazidime) and add 12 mL of sodium chloride 0.9% to make a final volume of 15 mL with a final concentration of 20 mg/mL. From the 2 g vial draw up 1.5mL (300mg of Ceftazidime) and add 13.5mL of sodium chloride 0.9% to make a final volume of 15mL with a final concentration of 20 mg/mL. **IM injection** Add 3 mL water for injection to the 1 g powder for reconstitution to make a 260 mg/mL solution.
Administration	**IV injection**: give over at least 3 to 5 minutes. **IV infusion:** over 15–30 minutes **IM injection**: not recommended. If IM administration is necessary, reconstitute with lignocaine 1%.
Monitoring	Renal function, liver function.
Contraindications	Hypersensitivity to penicillins or cephalosporins.
Precautions	Sodium restriction (each gram contains 52 mg [2.3 mmol] of sodium)..
Drug interactions	Concurrent use of high doses with nephrotoxic drugs may adversely affect renal function.
Adverse reactions	Rash, Diarrhoea, Elevated hepatic transaminases Eosinophillia, thrombocytopenia, haemolytic anaemia Positive Coombs test Superinfection following prolonged use (esp. *Candida*)

Compatibility	Fluids: Sodium chloride 0.9%, glucose 5%, glucose 10%, Hartmann's. Y-site: Amino acid solutions, aciclovir, anidulafungin, aztreonam, ciprofloxacin, dexmedetomidine, esmolol, ibuprofen lysine, ketamine, labetalol, linezolid, morphine sulfate, sodium valproate, tacrolimus, tigecycline, tobramycin, zidovudine.
Incompatibility	Fluids: Sodium bicarbonate. Y-site: Acetylcysteine, aminoglycosides – amikacin, gentamicin, tobramycin; amiodarone, atracurium, azathioprine, azithromycin, calcium chloride, caspofungin, chloramphenicol, chlorpromazine, dobutamine, erythromycin, fluconazole, ganciclovir, hydralazine, midazolam, pentamidine, phenytoin, promethazine, protamine, sodium ascorbate, sodium nitroprusside, vancomycin, verapamil.
Stability	Reconstitution with water for injection: Solution stable for 12 hours below 25°C and 24 hours at 2 to 8°C. Reconstitution with lignocaine: Stable for 6 hours below 25°C and 24 hours at 2 to 8°C.
Storage	Store vial below 25°C. Protect from light.
Excipients	Sodium carbonate
Special comments	8.9 mL diluent volume for 1 g vial was estimated from the product information of ceftazidime brands recommending diluting with 10 mL to 1 g vial to give an approximate concentration of 90 mg/mL. This is equivalent to 1.1 mL displacement volume (ANMF consensus).
Evidence	To be updated.
Practice points	
References	1. Hey E. (Ed) [2003]. Neonatal Formulary 4th Edition. BMJ Publishing Group, London. 2. Neofax accessed on www.neofax.micromedex.solutions.com on 29th July 2015. 3. MIMS Online Accessed 7th July 2015. 4. Australian Injectable Drugs Handbook, 6th Edition, Society of Hospital Pharmacists of Australia 2015. 5. Micromedex® 2.0, (electronic version). Truven Health Analytics, Greenwood Village, Colorado, USA. Available at: http://www.micromedexsolutions.com.acs.hcn.com.au. Accessed 7th July 2015. 6. Cotten CM, McDonald S, Stoll B, Goldberg RN, Poole K, Benjamin DK Jr, National Institute for Child Health and Human Development Neonatal Research Network. The association of third-generation cephalosporin use and invasive candidiasis in extremely low birth-weight infants. Pediatrics 2006;118(2):717–22. 7. Calil R, Marba ST, von Nowakonski A, Tresoldi AT. Reduction in colonization and nosocomial infection by multiresistant bacteria in a neonatal unit after institution of educational measures and restriction in the use of cephalosporins. Am J Infect Control 2001;29(3):133–8. 8. Dellagrammaticas HD, Christodoulou C, Megaloyanni E, Papadimitriou M, Kapetanakis J, Kourakis G. Treatment of gram-negative bacterial meningitis in term neonates with third generation cephalosporins plus amikacin. Biol Neonate 2000;77(3):139–46. 9. Harvey D, Holt DE, Bedford H. Bacterial meningitis in the newborn: a prospective study of mortality and morbidity. Semin Perinatol 1999;23(3):218–25.

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Authors Contribution

Original author/s	Chris Wake, Srinivas Bolisetty
Evidence Review	
Expert review	Brendan McMullan, Tony Lai
Nursing Review	Eszter Jozsa, Kirsty Minter
Pharmacy Review	Mariella De Rosa, Michelle Jenkins
ANMF Group contributors	Nilkant Phad, Bhavesh Mehta, John Sinn, Jessica Mehegan, Thao Tran, Helen Huynh, Carmen Burman
Final editing and review of the original	Ian Whyte

Electronic version	Cindy Chen, Ian Callander
Facilitator	Srinivas Bolisetty