cefOTAXIME
Newborn Use Only

2017

Alert	The Antimicrobial Stewardship Team recommends this drug is listed under the following category: Restricted.
Indication	As part of therapy for suspected meningitis. Treatment of proven meningitis and sepsis caused by susceptible organisms (e.g., *E.coli, H. influenzae, Klebsiella* spp.).
Action	Bactericidal agent which inhibits cell wall synthesis in susceptible bacteria. Broad spectrum against gram positive and many gram negative organisms but not *Pseudomonas* species.
Drug Type	Cephalosporin antibiotic.
Trade Name	Cefotaxime Sandoz, DBL Cefotaxime Sodium
Presentation	Cefotaxime 500 mg vial Cefotaxime 1 g vial
Dosage / Interval	**50 mg/kg/dose. Dosing interval as per the table below**

Method		Interval (hours)
Corrected Gestational Age/Postmenstrual Age	**Postnatal Age**	
< 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
$\geq 37^{+0}$ weeks	0–7 days	8 hourly
$\geq 37^{+0}$ weeks	8+ days	6 hourly

Route	IV IM
Maximum Daily Dose	
Preparation/Dilution	**IV injection** Add 9.8 mL of water for injection to the 500 mg powder for reconstitution to make a 50 mg/mL solution OR Add 9.6 mL of water for injection to the 1 g powder for reconstitution to make a 100 mg/mL solution. **IM injection** Add 2 mL of water for injection to the 500 mg powder for reconstitution to make a 230 mg/mL solution OR Add 3 mL of water for injection to the 1 g powder for reconstitution to make a 300 mg/mL solution.
Administration	**IV injection**: Over 3–5 minutes. **IV infusion**: Infuse over 15–30 minutes via syringe driver. **IM injection**: Inject deep into the large muscle.
Monitoring	Not required. Cefotaxime has a high therapeutic index.
Contraindications	Hypersensitivity to cefotaxime or other cephalosporins or previous history of major allergic response to a penicillin.
Precautions	Liver and renal disease. Sodium restriction – cefotaxime contains 48.2 mg/g (2.1 mmol/g) sodium.
Drug Interactions	Cefotaxime, as do many cephalosporins, may potentiate the renal toxicity of nephrotoxic drugs. Cefotaxime should not be combined with bacteriostatic antibiotics (e.g., tetracycline, erythromycin or chloramphenicol) since an antagonistic effect is possible.

Adverse Reactions	Leucopenia, granulocytopenia, agranulocytosis. Moderate and transient rise in liver enzymes and or bilirubin. Hypersensitivity reactions. Arrhythmias have occurred in patients who received rapid IV administration through a central venous catheter. Fungal sepsis. Bacterial resistance.
Compatibility	Fluids: Glucose 5%, glucose 10%, Hartmann's, sodium chloride 0.9% Y site: Amino acid solutions, aciclovir, amifostine, aztreonam, bivalirudin, dexmedetomidine, granisetron, hydromorphone, magnesium sulfate, midazolam, morphine sulfate, pethidine, remifentanil, tigecycline.
Incompatibility	Fluids: Alkaline solutions e.g., containing sodium bicarbonate. Y site: Aminoglycosides – amikacin, gentamicin, tobramycin; azathioprine, azithromycin, caspofungin, chloramphenicol, chlorpromazine, dobutamine, dolasetron, filgrastim, fluconazole, ganciclovir, haloperidol lactate, hydralazine, labetalol, methylprednisolone sodium succinate, mycophenolate mofetil, pentamidine, phenobarbitone, phentolamine, promethazine, protamine, sodium bicarbonate, vecuronium.
Stability	Reconstituted solution: Stable for 24 hours at 2 to 8 °C when reconstituted with water for injection. Protect from light. Do not use if powder or solutions have darkened in colour.
Storage	Store below 25°C Protect from light.
Special Comments	The main metabolite of cefotaxime is desacetylcefotaxime. This metabolite is active and is thought to enhance activity against Gram negative organisms. It has a longer half-life than cefotaxime. The major route of clearance of both cefotaxime and desacetylcefotaxime is renal.
Evidence summary	To be updated.
References	1. Aujard Y, Brion F, Jacqz-Aigrain E, et al: Pharmacokinetics of cefotaxime and desacetylcefotaxime in the newborn. Diagn Microbial Infect Dis 1989;12:87–91. 2. Jacobs R, Kearns G: Cefotaxime and deacetylcefotaxime in neonates and children: a review of microbiologic, pharmacokinetic and clinical experience. Diagn Microbial Infect Dis 1989;12:93–99. 3. Kafetzis D, Brater D, Kapiki A, et al: Treatment of severe neonatal infections with cefotaxime. Efficacy and pharmacokinetics. The Journal of Pediatrics 1982;100:483–489. 4. Kearns G, Young R: Pharmacokinetics of cefotaxime and deacetylcefotaxime in the young. Diagn Microbial Infect Dis 1995;22:97–104. 5. Kearns G, Jacorbs R, Thomas B, et al: Cefotaxime and desacetylcefotaxime pharmacokinetics in very low birth weight neonates. The Journal of Pediatrics 1989;114:461–7. 6. Odio C: Cefotaxime for treatment of neonatal sepsis and meningitis. Diagn Microbial Infect Dis 1995;22:111–117. 7. Sivanandan S, Soraisham A, Swarnam K: Choice and duration of antimicrobial therapy for neonatal sepsis and meningitis. International Journal of Pediatrics, 2011:712150. doi: 10.1155/2011/71215. 8. Craig W: Interrelationship between pharmacokinetics and pharmacodynamics in determining dosage regimens for broad spectrum cephalosporins. Diagn Microbial Infect Dis 1995;22:89–96 9. Pacifici G: Pharmacokinetics of cephalosporins in the neonate: a review. Clinics 2011;66(7):1267–1274. 10. Young T, Mangum B Neofax 23rd edition, Thomson Reuters 2010. 11. Australian Injectable Drugs Handbook. 5th Edition. The Society of Hospital Pharmacists of Australia. 2011. 12. MIMS online via CIAP accessed 7th July 2015. 13. Cotten CM, McDonald S, Stoll B, Goldberg RN, Poole K, Benjamin DK Jr, National Institute for

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