

cefOTAXIME

Newborn use only

2020

Alert	High risk medicine. 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., <i>E.coli</i> , <i>H. influenzae</i> , <i>Klebsiella</i> spp.).																							
Action	Bactericidal agent which inhibits cell wall synthesis in susceptible bacteria. Broad spectrum against gram positive and many gram negative organisms but not <i>Pseudomonas</i> species.																							
Drug type	Cephalosporin antibiotic.																							
Trade name	Cefotaxime Sandoz, DBL Cefotaxime Sodium																							
Presentation	500 mg and 1 g vial																							
Dose	<p>50 mg/kg/dose.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Corrected Gestational Age/Postmenstrual Age</th> <th style="text-align: center;">Postnatal Age</th> <th style="text-align: center;">Interval</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">< 30⁺⁰ weeks</td> <td style="text-align: center;">0–28 days</td> <td style="text-align: center;">12 hourly</td> </tr> <tr> <td style="text-align: center;">< 30⁺⁰ weeks</td> <td style="text-align: center;">≥29 days</td> <td style="text-align: center;">8 hourly</td> </tr> <tr> <td style="text-align: center;">30⁺⁰–36⁺⁶ weeks</td> <td style="text-align: center;">0–14 days</td> <td style="text-align: center;">12 hourly</td> </tr> <tr> <td style="text-align: center;">30⁺⁰–36⁺⁶ weeks</td> <td style="text-align: center;">≥15 days</td> <td style="text-align: center;">8 hourly</td> </tr> <tr> <td style="text-align: center;">≥ 37⁺⁰ weeks</td> <td style="text-align: center;">0–7 days</td> <td style="text-align: center;">8 hourly</td> </tr> <tr> <td style="text-align: center;">≥ 37⁺⁰ weeks</td> <td style="text-align: center;">≥8 days</td> <td style="text-align: center;">6 hourly</td> </tr> </tbody> </table>			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 weeks	0–7 days	8 hourly	≥ 37 ⁺⁰ weeks	≥8 days	6 hourly
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Dose adjustment																								
Maximum dose																								
Total cumulative dose																								
Route	IV IM																							
Preparation	<p>IV Add 9.8 mL of water for injection to the 500 mg powder to make a 50 mg/mL solution OR Add 9.6 mL of water for injection to the 1 g powder to make a 100 mg/mL solution.</p> <p>IM injection Add 2 mL of water for injection to the 500 mg powder to make a 230 mg/mL solution OR Add 3 mL of water for injection to the 1 g powder to make a 300 mg/mL solution.</p>																							
Administration	<p>IV bolus: over 3–5 minutes. IV infusion: over 15–30 minutes IM injection: Inject deep into the large muscle.</p>																							
Monitoring	Cefotaxime has a high therapeutic index. Consider monitoring renal function, blood count and electrolytes if therapy is prolonged.																							
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	May potentiate the renal toxicity of nephrotoxic drugs. Should not be combined with bacteriostatic antibiotics (e.g., tetracycline, erythromycin or chloramphenicol) since there may be a potential antagonistic effect.																							
Adverse reactions	Leucopaenia, granulocytopaenia, 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, remifentanyl, 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 is stable for 24 hours at 2 to 8 °C. Protect from light. Do not use if powder or solutions have darkened in colour.
Storage	Store below 25°C Protect from light.
Excipients	
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	To be updated.
Practice points	
References	<ol style="list-style-type: none"> 1. Aujard Y, Brion F, Jacqz-Aigrain E, et al: Pharmacokinetics of cefotaxime and desacetylcefotaxime in the newborn. <i>Diagn Microbial Infect Dis</i> 1989;12:87–91. 2. Jacobs R, Kearns G: Cefotaxime and deacetylcefotaxime in neonates and children: a review of microbiologic, pharmacokinetic and clinical experience. <i>Diagn Microbial Infect Dis</i> 1989;12:93–99. 3. Kafetzis D, Brater D, Kapiki A, et al: Treatment of severe neonatal infections with cefotaxime. Efficacy and pharmacokinetics. <i>The Journal of Pediatrics</i> 1982;100:483–489. 4. Kearns G, Young R: Pharmacokinetics of cefotaxime and deacetylcefotaxime in the young. <i>Diagn Microbial Infect Dis</i> 1995;22:97–104. 5. Kearns G, Jacobbs R, Thomas B, et al: Cefotaxime and desacetylcefotaxime pharmacokinetics in very low birth weight neonates. <i>The Journal of Pediatrics</i> 1989;114:461–7. 6. Odio C: Cefotaxime for treatment of neonatal sepsis and meningitis. <i>Diagn Microbial Infect Dis</i> 1995;22:111–117. 7. Sivanandan S, Soraisham A, Swarnam K: Choice and duration of antimicrobial therapy for neonatal sepsis and meningitis. <i>International Journal of Pediatrics</i>, 2011;712150. doi: 10.1155/2011/71215. 8. Craig W: Interrelationship between pharmacokinetics and pharmacodynamics in determining dosage regimens for broad spectrum cephalosporins. <i>Diagn Microbial Infect Dis</i> 1995;22:89–96 9. Pacifici G: Pharmacokinetics of cephalosporins in the neonate: a review. <i>Clinics</i> 2011;66(7):1267–1274. 10. Young T, Mangum B <i>Neofax</i> 23rd edition, Thomson Reuters 2010. 11. <i>Australian Injectable Drugs Handbook</i>. 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 Child Health and Human Development Neonatal Research Network. The association of third-generation cephalosporin use and invasive candidiasis in extremely low birth-weight infants. <i>Pediatrics</i> 2006;118(2):717–22. 14. Calil R, Marba ST, von Nowakowski 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. <i>Am J Infect Control</i> 2001;29(3):133–8. 15. 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. <i>Biol Neonate</i> 2000;77(3):139–46. 16. Harvey D, Holt DE, Bedford H. Bacterial meningitis in the newborn: a prospective study of mortality and morbidity. <i>Semin Perinatol</i> 1999;23(3):218–25. 17. <i>Neofax</i> accessed on www.neofax.micromedex.solutions.com on 29th July 2015.

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