

<b>Alert</b>	<p>Imipenem + cilastatin is not the preferred carbapenem in neonates because of possible adverse effects and should be avoided in preterm neonates because of cilastatin accumulation.</p> <p>The Antimicrobial Stewardship Team recommends this drug is listed under the following category: Restricted.</p> <p>Widespread use of carbapenems has been linked with increasing prevalence of infections caused by methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), vancomycin-resistant enterococci (VRE), multi resistant Gram-negative organisms and <i>Clostridium difficile</i>.</p>															
<b>Indication</b>	<p>Non-CNS sepsis caused by susceptible organisms including enteric Gram-negative rods, extended-spectrum beta-lactamase [ESBL] organisms, <i>Pseudomonas aeruginosa</i>, anaerobic organisms (including <i>Bacteroides fragilis</i>) and many Gram-positive organisms.</p>															
<b>Action</b>	<p>Imipenem + cilastatin is a carbapenem. It inhibits cell wall synthesis. Imipenem is combined with cilastatin. Cilastatin prevents renal metabolism of imipenem.</p> <p>Meropenem is a better choice than imipenem + cilastatin for central nervous system infections. Meropenem attains a higher concentration in the cerebrospinal fluid and has a lower incidence of seizures than imipenem + cilastatin.</p>															
<b>Drug Type</b>	Carbapenem antibiotic.															
<b>Trade Name</b>	Primaxin															
<b>Presentation</b>	500 mg vial.															
<b>Dosage / Interval</b>	<table border="1"> <thead> <tr> <th>Condition</th> <th>Dose</th> <th>Dosing Interval</th> <th>Infusion Time</th> </tr> </thead> <tbody> <tr> <td>Non-<i>Pseudomonas aeruginosa</i></td> <td>25 mg/kg</td> <td>12 hourly</td> <td>30 minutes</td> </tr> <tr> <td><i>Pseudomonas aeruginosa</i></td> <td>25 mg/kg</td> <td>8 hourly</td> <td>90 minutes</td> </tr> </tbody> </table>				Condition	Dose	Dosing Interval	Infusion Time	Non- <i>Pseudomonas aeruginosa</i>	25 mg/kg	12 hourly	30 minutes	<i>Pseudomonas aeruginosa</i>	25 mg/kg	8 hourly	90 minutes
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Non- <i>Pseudomonas aeruginosa</i>	25 mg/kg	12 hourly	30 minutes													
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<b>Route</b>	IV Infusion.															
<b>Maximum Daily Dose</b>	75 mg/kg/day															
<b>Preparation/Dilution</b>	<p>Add 9.2 mL of sodium chloride 0.9% to the 500 mg powder for reconstitution to make a volume of 10 mL with a concentration of 50 mg/mL (Note: Suspension maybe cloudy).</p> <p>Draw up 1 mL (50 mg) and add 9 mL sodium chloride 0.9% to make a final volume of 10 mL with a concentration of 5 mg/mL.</p>															
<b>Administration</b>	<p>Non-<i>Pseudomonas aeruginosa</i> – IV infusion over 30 minutes.</p> <p><i>Pseudomonas aeruginosa</i> – IV infusion over 90 minutes.</p>															
<b>Monitoring</b>	<p>Monitor renal function. Dose may need to be reduced in impaired renal function.</p> <p>Monitor blood count and liver function.</p>															
<b>Contraindications</b>	<p>Hypersensitivity to penicillins, cephalosporins or carbapenems.</p> <p>CNS infections.</p>															
<b>Precautions</b>	Seizures can occur in infants with renal impairment or central nervous system infection.															
<b>Drug Interactions</b>	<p>Ganciclovir – risk of seizures. Do not give concomitantly unless the potential benefits outweigh the risks.</p> <p>Valproate – results in decreased concentrations of valproate.</p>															
<b>Adverse Reactions</b>	Seizures, impaired renal function, impaired liver function, tachycardia, local phlebitis. Urticaria, diarrhoea, pseudomembranous colitis ( <i>Clostridium difficile</i> ) and vomiting.															

<b>Compatibility</b>	Fluids: Glucose 5%, glucose 10%, sodium chloride 0.9%  Y-site: Aciclovir, amifostine, anidulafungin, aztreonam, caspofungin, cisatracurium besilate, foscarnet, granisetron, linezolid, remifentanyl, tigecycline, zidovudine.
<b>Incompatibility</b>	Fluids: Hartmann's.  Y-site: Amiodarone, amoxicillin, azathioprine, azithromycin, ceftriaxone, chlorpromazine, daptomycin, fluconazole, ganciclovir, haloperidol lactate, metaraminol, midazolam, milrinone, mycophenolate mofetil, palonosetron, pethidine, sodium bicarbonate, vecuronium.
<b>Stability</b>	Reconstituted or diluted solution: Stable for 4 hours below 25°C or for 24 hours at 2–8°C.
<b>Storage</b>	Vial: Store below 25°C.
<b>Special Comments</b>	Solutions of imipenem + cilastatin range from colourless to yellow. Variations of colour within this range do not affect the potency.
<b>Evidence summary</b>	As per NeoMed Consensus Group. Refer to reference manual or electronic version.
<b>References</b>	As per NeoMed Consensus Group. Refer to reference manual or electronic version.

<b>Original version Date: 05/12/2015</b>	<b>Author: Neonatal Medicines Formulary Consensus Group</b>
<b>Current Version number: 1</b>	<b>Version Date: 05/12/2015</b>
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