**Imipenem + cilastatin**

**Alert**

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.

The Antimicrobial Stewardship Team recommends this drug is listed under the following category: Restricted.

Widespread use of carbapenems has been linked with increasing prevalence of infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), multi resistant Gram-negative organisms and *Clostridium difficile*.

**Indication**


**Action**

Imipenem + cilastatin is a carbapenem. It inhibits cell wall synthesis. Imipenem is combined with cilastatin. Cilastatin prevents renal metabolism of imipenem.

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.

**Drug Type**

Carbapenem antibiotic.

**Trade Name**

Primaxin

**Presentation**

500 mg vial.

**Dosage / Interval**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Dose</th>
<th>Dosing Interval</th>
<th>Infusion Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-<em>Pseudomonas aeruginosa</em></td>
<td>25 mg/kg</td>
<td>12 hourly</td>
<td>30 minutes</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em></td>
<td>25 mg/kg</td>
<td>8 hourly</td>
<td>90 minutes</td>
</tr>
</tbody>
</table>

**Route**

IV Infusion.

**Maximum Daily Dose**

75 mg/kg/day

**Preparation/Dilution**

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).

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.

**Administration**

Non-*Pseudomonas aeruginosa* – IV infusion over 30 minutes.

*Pseudomonas aeruginosa* – IV infusion over 90 minutes.

**Monitoring**

Monitor renal function. Dose may need to be reduced in impaired renal function.

Monitor blood count and liver function.

**Contraindications**

Hypersensitivity to penicillins, cephalosporins or carbapenems.

CNS infections.

**Precautions**

Seizures can occur in infants with renal impairment or central nervous system infection.

**Drug Interactions**

Ganciclovir – risk of seizures. Do not give concomitantly unless the potential benefits outweigh the risks.

Valproate – results in decreased concentrations of valproate.

**Adverse Reactions**

Seizures, impaired renal function, impaired liver function, tachycardia, local phlebitis. Urticaria, diarrhoea, pseudomembranous colitis (*Clostridium difficile*) and vomiting.
### Compatibility
- Fluids: Glucose 5%, glucose 10%, sodium chloride 0.9%
- Y-site: Aciclovir, amifostine, anidulafungin, aztreonam, caspofungin, cisatracurium besilate, foscarnet, granisetron, linezolid, remifentanil, tigecycline, zidovudine.

### Incompatibility
- Fluids: Hartmann’s.
- Y-site: Amiodarone, amoxycillin, azathioprine, azithromycin, ceftriaxone, chlorpromazine, daptomycin, fluconazole, ganciclovir, haloperidol lactate, metaraminol, midazolam, milrinone, mycophenolate mofetil, palonosetron, pethidine, sodium bicarbonate, vecuronium.

### Stability
- Reconstituted or diluted solution: Stable for 4 hours below 25°C or for 24 hours at 2–8°C.

### Storage
- Vial: Store below 25°C.

### Special Comments
- Solutions of imipenem + cilastatin range from colourless to yellow. Variations of colour within this range do not affect the potency.

### Evidence summary
- As per NeoMed Consensus Group. Refer to reference manual or electronic version.

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