



# MEROPENEM

<b>Indication</b>	<ul style="list-style-type: none"> <li>• Treatment of susceptible aerobic and anaerobic gram-positive and gram-negative infections<sup>1</sup> resistant to or not responding to other antibiotics<sup>2</sup></li> <li>• Meningitis (good penetration into the CSF and most body tissues<sup>2,3</sup>)</li> </ul>					
<div style="writing-mode: vertical-rl; transform: rotate(180deg);">INTRAVENOUS</div>	<b>Presentation</b> <ul style="list-style-type: none"> <li>• Vial 500 mg   1 gram</li> </ul>	 				
	<b>Dosage</b> <table border="1" data-bbox="424 506 1107 640"> <thead> <tr> <th>Day of life (days)</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>0–6</td> <td>every 12 hours</td> </tr> <tr> <td>7 or more</td> <td>every 8 hours</td> </tr> </tbody> </table>		Day of life (days)	Frequency	0–6	every 12 hours
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0–6	every 12 hours					
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<div style="writing-mode: vertical-rl; transform: rotate(180deg);">INTRAVENOUS</div>	<b>Preparation</b> <ul style="list-style-type: none"> <li>• 500 mg vial                             <ul style="list-style-type: none"> <li>○ Add 7.5 mL of 0.9% sodium chloride and shake well</li> <li>○ Allow to stand until solution clear or pale yellow</li> <li>○ Draw up solution and make up to 10 mL total volume with 0.9% sodium chloride</li> <li>○ <i>Concentration now equal to 50 mg/mL</i></li> </ul> </li> </ul>					
	<ul style="list-style-type: none"> <li>• 1 g vial                             <ul style="list-style-type: none"> <li>○ Add 15 mL of 0.9% sodium chloride and shake well</li> <li>○ Allow to stand until solution clear or pale yellow</li> <li>○ Draw up solution and make up to 20 mL total volume with 0.9% sodium chloride</li> <li>○ <i>Concentration now equal to 50 mg/mL</i></li> </ul> </li> </ul>					
<div style="writing-mode: vertical-rl; transform: rotate(180deg);">INTRAVENOUS</div>	<b>Administration</b> <ul style="list-style-type: none"> <li>• IV injection                             <ul style="list-style-type: none"> <li>○ Draw up the prescribed dose</li> <li>○ IV injection over 5 minutes<sup>1,4</sup></li> </ul> </li> </ul>					
	<ul style="list-style-type: none"> <li>• IV infusion according to dose</li> <li>• For doses 35 mg or less                             <ul style="list-style-type: none"> <li>○ Draw up 1 mL of 50 mg/mL solution and make up to 4 mL total volume with 0.9% sodium chloride</li> <li>○ <i>Concentration now equal to 12.5 mg/mL</i></li> <li>○ Draw up double the volume required from the 12.5 mg/mL solution, prime infusion line and reduce total syringe volume to prescribed dose</li> </ul> </li> <li>• For doses more than 35 mg                             <ul style="list-style-type: none"> <li>○ Draw up double the volume required from the 50 mg/mL solution, prime infusion line and reduce total syringe volume to prescribed dose</li> </ul> </li> <li>• Infuse via syringe driver pump over 15–30 minutes<sup>4</sup> <ul style="list-style-type: none"> <li>○ On completion, disconnect syringe and infusion line</li> <li>○ Flush access port at same rate as infusion</li> </ul> </li> </ul>					
<b>Special considerations</b>	<ul style="list-style-type: none"> <li>• If renal impairment, may need dosage adjustment<sup>1,2</sup> <ul style="list-style-type: none"> <li>○ If anuria, consider cessation</li> </ul> </li> <li>• Each 1 g contains 3.92 mmol (90.2 mg) of sodium</li> <li>• UAC route: discuss with neonatologist/paediatrician prior to use</li> </ul>					
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• FBC<sup>1</sup>, LFT<sup>1</sup></li> <li>• Renal function<sup>2</sup></li> </ul>					
<b>Compatibility</b>	<ul style="list-style-type: none"> <li>• Fluids<sup>4</sup> <ul style="list-style-type: none"> <li>○ 0.9% sodium chloride, 5% glucose, 10% glucose</li> </ul> </li> <li>• Y-site<sup>3</sup> <ul style="list-style-type: none"> <li>○ Atropine, azithromycin, caspofungin, dexamethasone, digoxin, dobutamine, dopamine, fluconazole, furosemide (frusemide), gentamicin, heparin, insulin, morphine, noradrenaline (norepinephrine), phenobarbital (phenobarbitone), potassium chloride, ranitidine, vancomycin</li> </ul> </li> </ul>					

<b>Incompatibility</b>	<ul style="list-style-type: none"> <li>• PN and fat emulsion: co-infusion with meropenem not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after</li> <li>• Aciclovir<sup>3</sup>, amiodarone<sup>4</sup>, amphotericin B<sup>3</sup>, calcium gluconate<sup>3</sup>, sodium bicarbonate<sup>3</sup>, zidovudine<sup>3</sup></li> </ul>
<b>Interactions</b>	<ul style="list-style-type: none"> <li>• May result in clinically significant reduction in concentration of sodium valproate which may cause seizures<sup>5</sup></li> </ul>
<b>Stability</b>	<ul style="list-style-type: none"> <li>• Vial<sup>4</sup> <ul style="list-style-type: none"> <li>◦ Store below 25 °C</li> </ul> </li> <li>• Reconstituted solution<sup>4</sup> <ul style="list-style-type: none"> <li>◦ In sodium chloride solutions, stable for 8 hours below 25 °C and 24 hours at 2–8 °C</li> <li>◦ In glucose solutions, stable for 3 hours below 25 °C and 14 hours at 2–8 °C</li> </ul> </li> <li>• Stability information may vary between brands—check with pharmacist<sup>4</sup></li> </ul>
<b>Side effects</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity reactions: rare in neonates. May present as erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques<sup>6-9</sup>)</li> <li>• Blood pathology: raised liver enzymes<sup>1</sup>, thrombocytopaenia<sup>1</sup>, eosinophilia<sup>1</sup>, leukopenia<sup>1</sup>, may give positive Coombs test<sup>1</sup></li> <li>• Digestive: diarrhea<sup>3</sup>, vomiting<sup>3</sup></li> <li>• Integumentary: inflammation at injection site<sup>3</sup>, rash<sup>3</sup></li> <li>• Nervous system: seizures reported in patients with renal impairment<sup>3</sup></li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>• Broad-spectrum carbapenem antibiotic</li> </ul>
<b>Abbreviations</b>	FBC: full blood count, IV: intravenous; LFT: liver function test, UAC: umbilical arterial catheter
<b>Keywords</b>	meropenem, carbapenem, antibiotic, gram-positive, gram-negative, infection, neonatal sepsis

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

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## Document history

ID number	Effective	Review	Summary of updates
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