



MONOGRAPH

Meropenem Monograph - Paediatric

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	All Clinical Areas

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [DISCLAIMER](#)

QUICKLINKS

[Dosage/Dosage
Adjustments](#)

[Administration](#)

[Compability](#)

[Monitoring](#)

DRUG CLASS

Carbapenem antibiotic.⁽¹⁻³⁾

INDICATIONS AND RESTRICTIONS

Meropenem is a broad spectrum antibiotic active against many gram-positive and resistant enteric gram-negative bacteria including *Pseudomonas aeruginosa* and extended-spectrum beta-lactamase (ESBL) producing isolates. It is **NOT** active against *Stenotrophomonas maltophilia* and Methicillin Resistant *Staphylococcus aureus* (MRSA).⁽⁴⁾

IV: Monitored (orange) antibiotic

Meropenem is indicated for use as per the indications stipulated in [Formulary One](#). For any other use, phone approval must be obtained from ChAMP before prescribing as per the [Antimicrobial Stewardship Policy](#).

CONTRAINDICATIONS

- Hypersensitivity to meropenem, any component of the formulation or patients with a high-risk allergy to carbapenems. ^(1, 5-8)

PRECAUTIONS

- Meropenem may be prescribed in selected patients with a high-risk allergy to another beta-lactam sub-class (e.g. some penicillins, cephalosporins) in discussion with immunology. In patients with a previous [low-risk reaction](#) to meropenem or another carbapenem (delayed rash [>1 hr after initial exposure] without mucosal or systemic involvement) the risk of subsequent reaction is low. Re-challenge may be acceptable in discussion with immunology.^(1, 6, 9)
- Avoid use in combination with sodium valproate where possible due to a significant reduction in the concentration of sodium valproate.^(1, 6, 9)
- Meropenem has been known to lower the seizure threshold and may cause seizures, especially in patients with renal impairment and/or underlying neurological conditions.⁽⁹⁾
- Each gram vial contains 3.92 mmol (90.2 mg) of sodium.^(1, 3, 7, 9)

FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- 500 mg powder for injection

Imprest location: [Formulary One](#)

DOSAGE & DOSAGE ADJUSTMENTS

Neonates: [Refer to Neonatal Medication Protocols](#)

Children (>4 weeks to 18 years):

Usual dose (including febrile neutropenia): IV 20 mg/kg/dose (to a maximum of 1 gram) given 8 hourly.^(2, 8, 9)

Severe infections (including CNS infections) and Cystic Fibrosis: IV 40 mg/kg/dose (to a maximum of 2 grams) given 8 hourly.^(2, 8, 9)

Renal impairment:

[eGFR calculator](#)

eGFR	Dose recommendation ^(6, 8, 9)
≥ 50 mL/minute/1.73m ²	No dose adjustment necessary
≥ 26 to < 50 mL/minute/1.73m ²	100% of the normal dose 12 hourly
≥ 10 to < 26 mL/minute/1.73m ²	50% of the normal dose 12 hourly
< 10 mL/minute/1.73m ²	50% of the normal dose 24 hourly

Hepatic impairment:

No dosage reductions are required in hepatic impairment.^(8, 9)

[Dosing in Overweight and Obese Children:](#) Dose based on measured body weight.⁽¹⁰⁾

RECONSTITUTION & ADMINISTRATION**IV reconstitution⁽¹¹⁾**

Vial strength	Volume of water for injection required	Resulting concentration	Powder volume
500 mg	9.6 mL	50 mg/mL	0.4 mL
1 gram	19.1mL	50 mg/mL	0.9 mL

IV injection:

- Reconstitute to a concentration of 50 mg/mL and give via slow IV injection over 3 to 5 minutes.^(6, 8, 9)

IV infusion (preferred for doses of 40 mg/kg):

- After reconstitution, dilute to a suitable volume with compatible fluid and infuse over 15 to 30 minutes.^(8, 9)
- Meropenem is also suitable for extended infusion. In critically unwell patients the required intermittent dose can be given over 3 hours.⁽³⁾

COMPATIBILITY (LIST IS NOT EXHAUSTIVE)**Compatible fluids:**

- Sodium chloride 0.9%
- Glucose 5%
- Glucose/sodium chloride solutions^(3, 11)

Compatible at Y-site:

[Compatibilities of IV drugs](#) must be checked when two or more drugs are given concurrently.

MONITORING

- Renal, hepatic and haematological function should be monitored weekly with prolonged therapy (i.e. longer than 7 days).^(1, 6, 8)

ADVERSE EFFECTS

Common: thrombocytosis, abnormal liver function tests and lactate dehydrogenase, nausea, pain, vomiting, diarrhoea, abdominal pain, headache and injection site reactions, inflammation, skin reactions.^(1, 6)

Infrequent: *Clostridioides difficile*-associated disease, itch, rash, eosinophilia, paraesthesia, urticaria.⁽¹⁾

Rare: seizures, thrombocytopenia, thrombophlebitis, paraesthesia, leucopenia, neutropenia, agranulocytosis, severe cutaneous adverse reactions (SCARs), anaphylaxis, seizures, haemolytic anaemia, multi-organ hypersensitivity syndrome.^(1, 6)

STORAGE

- Store vials below 25°C.^(3, 5)
- Store syringes prepared by PCS between 2 – 8 °C⁽³⁾

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. [Clinical Pharmacology](#)), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

Please note: The information contained in this guideline is to assist with the preparation and administration of **meropenem**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)




[ChAMP Empiric Guidelines and Monographs](#)

[KEMH Neonatal Medication Protocols](#)

References

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Compassion

Excellence

Collaboration

Accountability

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Respect

Neonatology | Community Health | Mental Health | Perth Children's Hospital