South Australian Neonatal Medication Guidelines

CefEPIME

1gram injection

Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Dose and Indications

For patients less than 28 weeks consider meropenem in preference to cefepime due to more established dosing recommendations.

Consult Infectious Diseases prior to use

Infections due to susceptible organisms

Intravenous

50 mg/kg/dose

Postnatal age (days)	Frequency
<30 days	Every 12 hours
≥30 days	Every 8 hours

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Preparation and Administration

Intravenous Intermittent Infusion

There are **TWO STEPS** to this process

STEP ONE: Reconstitute 1gram vial with 8.7ml of compatible fluid. This makes a 100mg/mL cefepime solution.

STEP TWO: Withdraw all the solution from vial (~10ml) and make up to a final volume of 25mL with compatible fluid. This makes a final concentration of **40mg/mL** cefepime.

Dose	20mg	40mg	60mg	80mg	100mg	120mg
Volume	0.5mL	1mL	1.5mL	2mL	2.5mL	3mL

Infuse over 30 minutes

Compatible Fluids

Sodium Chloride 0.9%, Glucose 5%, Glucose 10%

Adverse Effects

Common

Pain and inflammation at injection site, rash, *Clostridium difficile*-associated disease, superinfection (incl *Candida* and *Enterococcus spp*., especially with prolonged treatment)

Rare

Neurotoxicity (e.g. seizures, encephalopathy) particularly with high doses and/or renal impairment, blood dyscrasias (e.g. neutropenia) (related to dose and duration), thrombocytopenia, bleeding, renal impairment, immunologic reactions (eosinophilia, drug fever, angioedema, anaphylaxis, urticaria, haemolytic anaemia, Stevens-Johnson syndrome, toxic epidermal necrolysis)

Monitoring

- Renal function and complete blood count during prolonged (>10 days) and/or high dose treatment

Practice Points

- The use of third generation cephalosporins should be limited to the management of proven or highly likely Gram-negative septicaemia and meningitis to minimise the emergence of resistant strains
- Dose adjustment may be needed in renal impairment

References

Dosing information obtained via expert opinion, group consensus and the following references:

- Bradley JS, Nelson JD. 2015. Nelson's pediatric antimicrobial therapy, 21st ed. American Academy of Pediatrics, Elk Grove Village, IL
- McDonald, Danielle & Shah, Pooja. (2019). Cefepime Dosing in Neonates: What is the Evidence? American Journal of Perinatology. 10.1055/s-0039-3400312
- Shoji K, Bradley JS, Reed MD, van den Anker JN, Domonoske C, Capparelli EV. Population Pharmacokinetic Assessment and Pharmacodynamic Implications of Pediatric Cefepime Dosing for Susceptible-Dose-Dependent Organisms. *Antimicrob Agents Chemother*. 2016;60(4):2150-2156. Published 2016 Mar 25. doi:10.1128/AAC.02592-15
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