

Neonatal Medication Guideline

Clinical Guideline

Piperacillin-tazobactam

Policy developed by: SA Maternal, Neonatal & Gynaecology Community of Practice

Approved SA Health Safety & Quality Strategic Governance Committee on:
11 August 2017

Next review due: 31 August 2020

Summary The purpose of this guideline is to guide nursing, midwifery, medical and pharmacy staff in the dosing and administration of piperacillin-tazobactam

Keywords Piperacillin-tazobactam, neonatal medication guideline, sepsis, infection, nec, necrotising enterocolitis, antibiotic, piperacillin, rash, lft, penicillin, aminoglycoside

Policy history Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y v1.0**
Does this policy replace an existing policy? **N**
If so, which policies?

Applies to All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

Staff impact All Clinical, Medical, Midwifery, Nursing, Students, Allied Health, Emergency, Mental Health, Pathology, Pharmacy

PDS reference CG053

Version control and change history

Version	Date from	Date to	Amendment
1.0	November 2012	Aug 2017	Original version
2.0	Aug 2017	Current	Complete review

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piperacillin-tazobactam

piperacillin 4g with tazobactam 0.5g injection

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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

1gram = 1000mg

Infection due to susceptible organisms.

Monotherapy in the empirical treatment of necrotising enterocolitis.

Intravenous

50 to 100mg/kg/dose.

Dose according to piperacillin content

Corrected Age (weeks) [Gestational Age PLUS Postnatal Age]	Postnatal age (days)	Frequency (hours)
< 30	≤ 28	every 12 hours
	>28	every 8 hours
30 to 36	≤ 14	every 12 hours
	>14	every 8 hours
37 to 44	≤ 7	every 12 hours
	>7	every 8 hours

Length of treatment should be guided by pathology and clinical picture; however in proven sepsis treatment should continue for a minimum of 7 days.

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South Australian Neonatal Medication Guidelines Workgroup at:
Health:NeoMed@sa.gov.au

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Preparation and Administration

Intravenous

There are **TWO STEPS** to this process.

STEP ONE: Add 17mL of Water for Injection to the vial (4000mg piperacillin content) and shake gently to dissolve (to a total volume of 20mL). The resulting solution contains 200mg/mL piperacillin.

STEP TWO: Further dilute 1mL of the 200mg/mL piperacillin solution with 9mL of compatible fluid (to a total volume of 10mL). The resulting solution contains 20mg/mL piperacillin.

Dose	50mg	75mg	100mg	125mg	150mg	200mg
Volume	2.5mL	3.75mL	5mL	6.25mL	7.5mL	10mL

Infuse over at least 30 minutes

Discard remaining solution

In severely fluid restricted infants, 200mg/mL solution (STEP ONE ONLY) may be used

Compatible Fluids

Glucose 5%, sodium chloride 0.9%

Adverse Effects

Common

Diarrhoea, rash

Infrequent

Bronchospasm, angioedema, injection-site reactions

Rare

Black tongue, electrolyte disturbances (hypernatraemia or hypokalaemia due to sodium content of high parenteral doses), neurotoxicity, transient increases in liver enzymes and bilirubin, cholestatic jaundice, bleeding abnormalities (prolonged bleeding times and altered platelet aggregation)

Anaphylactic shock is not commonly seen in neonates

Monitoring

- > Periodic liver function tests, with prolonged treatment of more than 10 days
- > Review intravenous site for signs of extravasation.

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Practice Points

- > IV penicillins and cephalosporins can inactivate IV aminoglycoside antibiotics (eg. gentamicin). Preferably separate doses by 1 hour. If it is not possible to separate doses, flush the line well with sodium chloride 0.9%, before and after giving each medication.
- > Piperacillin may enhance the nephrotoxic effect of vancomycin
- > Piperacillin with tazobactam is the preferred monotherapy for gastrointestinal surgical conditions
- > This is a broad spectrum antibiotic and is generally used on specialist advice.

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