Neonatal Medication Guideline

Clinical Guideline

Ibuprofen

Policy developed by: SA Maternal & Neonatal Clinical Community of Practice
Approved by
Safety & Quality Strategic Governance Committee on: 27 April 2017
Next review due: 30 April 2020

Summary The purpose of the Ibuprofen Neonatal Medication Guideline is to guide nursing, medical and pharmacy staff in the dosing and administration of ibuprofen.

Keywords Ibuprofen, neonatal medication guideline, NSAID, PDA, patent ductus arteriosus, hypertension, aminoglycosides, gentamicin, bilirubin, clinical guideline, Ibuprofen Neonatal Medication Guideline

Policy history Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y v2.0**
Does this policy replace an existing policy? **N**
If so, which policies?

Applies to All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN

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

PDS reference CG034

Version control and change history

Version	Date from	Date to	Amendment
1.0	Nov 2012	March 2014	Original version
2.0	March 2014	April 2017	Change in ibuprofen formulation Changes to dosing
3.0	28 April 2017	Current	Change to ibuprofen formulation, review of document

Government of South Australia
SA Health

Ibuprofen

5mg/mL injection (as sodium salt) (SAS), 20mg/mL oral mixture

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

Treatment of significant patent ductus arteriosus (PDA)

Intravenous, Oral

Three day course of therapy, doses to be given 24 hours apart

Day 1: 20 mg/kg

Day 2 and 3: 10 mg/kg

Oral mixture can be used if the neonate is tolerating enteral feeds

If the ductus arteriosus does not close 24 hours after the third dose or if it re-opens, further doses may be given.

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

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Preparation and Administration

Intravenous

The intravenous injection contains 5mg/mL ibuprofen.

Dose	2.5mg	5mg	7.5mg	10mg	12.5mg	15mg	20mg
Volume	0.5mL	1mL	1.5mL	2ml	2.5mL	3mL	4mL

Administer as an intravenous infusion over at least 15 minutes.

Oral

The oral mixture contains 20mg/mL ibuprofen.

Dose	3mg	6mg	9mg	12mg	15mg
Volume	0.15mL	0.3mL	0.45mL	0.6mL	0.75mL

Give with feeds to minimise gastrointestinal irritation.

Compatible Fluids

Sodium chloride 0.9%, glucose 5%

Adverse Effects

Common

Bleeding, salt and fluid retention, hypertension, bronchopulmonary dysplasia

Infrequent

Gastrointestinal perforation (particularly if used concurrently or in close proximity to corticosteroids), hyperkalaemia, renal impairment, rash

Rare

Blood dyscrasias, interstitial nephritis, acute renal failure, hepatitis

Monitoring

- Assess for ductal closure
- Renal function and urine output
- Assess for signs of bleeding

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Practice Points

- If anuria or oliguria occurs after any dose, further dosing should be reviewed.
- Congenital heart disease with a duct-dependent pulmonary or systemic circulation and pulmonary hypertension are absolute contraindications to Ibuprofen.
- Ibuprofen should be used with a high level of caution in babies with active bleeding, severe thrombocytopenia and bleeding disorders, known or suspected necrotising enterocolitis, or renal failure.
- Use with caution in known infection.
- Ibuprofen has been shown to displace bilirubin from its binding site to albumin; hence it may cause a significant increase in unbound bilirubin in those infants with a high unconjugated bilirubin.
- Ibuprofen may decrease clearance of aminoglycosides. Hence strict surveillance of aminoglycoside serum levels is recommended in those babies who have both ibuprofen and aminoglycosides prescribed.
- Ibuprofen is a better tolerated medication than indomethacin. There is less effect on renal and gastrointestinal function.
- Before administration of ibuprofen an echocardiographic examination should generally be performed in order to detect a haemodynamically significant patent ductus arteriosus and to exclude pulmonary hypertension and duct-dependent congenital heart disease.

References

1. Dani C, Vangi V, Bertini G, Pratesi S, Lori I, Favelli F et al. High-Dose Ibuprofen for Patent Ductus Arteriosus in Extremely Preterm Infants: A Randomized Controlled Study. Clinical Pharmacology & Therapeutics 2012; 91(4) 590-596
2. Erdeve O, Yurttutan S, Altug N, Uras N et al. Oral versus intravenous ibuprofen for patent ductus arteriosus closure: a randomised controlled trial in extremely low birth weight infants:.Arch Dis Child Fetal Neonatal Ed 2012;97; F279–F283

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