South Australian Neonatal Medication Guidelines

Propranolol
10mg tablet, 5mg/mL oral mixture*

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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

Tachyarrhythmias (e.g. supraventricular tachycardia), thyrotoxicosis, hypertension

Start only after consultation with a cardiologist

Oral

0.25 to 0.5mg/kg/dose every six to eight hours

Adjust dose daily according to response up to a maximum dose of 1mg/kg/dose every six hours.

Fallot’s tetralogy

Start only after consultation with a cardiologist

Oral

0.25 to 1mg/kg/dose every six to eight hours

Capillary haemangiomas situated in a critical site or complicated by haemorrhage or ulceration

Usually started only after consultation with a dermatologist

Oral

0.5mg/kg/dose every 12 hours, increasing to 1mg/kg/dose every 12 hours
Preparation and Administration

**Oral Mixture (5mg/mL)**

The oral mixture contains 5mg/mL propranolol.

<table>
<thead>
<tr>
<th>Dose</th>
<th>1mg</th>
<th>2mg</th>
<th>3mg</th>
<th>4mg</th>
<th>5mg</th>
<th>6mg</th>
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</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0.2mL</td>
<td>0.4mL</td>
<td>0.6mL</td>
<td>0.8mL</td>
<td>1mL</td>
<td>1.2mL</td>
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</table>

Give with feeds to minimise gastrointestinal irritation.

*The 5mg/mL oral mixture is not commercially available however is manufactured at Women’s & Children’s Health Network Pharmacy Production Unit.

Propranolol mixture should be stored in the refrigerator.

**Oral Tablets**

If a dose is needed outside of pharmacy hours:

Disperse one 10mg propranolol tablet in 10mL of sterile water. The resulting solution contains 1mg/mL propranolol.

<table>
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<td>6mL</td>
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</tbody>
</table>

Give with feeds to minimise gastrointestinal irritation.

Discard remaining solution after dose.

**Adverse Effects**

**Common**

Diarrhoea, bronchospasm, dyspnoea, cold extremities, bradycardia, hypotension, sleep disturbances, hypoglycaemia, alteration of lipid metabolism

**Infrequent**

Rash, acute urinary tract retention, nasal congestion, increased airway resistance

**Rare**

Hypersensitivity reactions, thrombocytopenic purpura, liver function abnormality, alopecia
Monitoring

- Baseline investigations – blood sugar level, blood pressure, electrocardiograph if clinically indicated
- Monitor heart rate, blood pressure and observe for bronchospasm hourly for 3 hours after the first dose.
- Monitor blood glucose levels 3 hours after the first dose.
- Consider the above monitoring with every mg/kg increase in dosage.
- In neonates aged 0-4 weeks corrected, small for gestational age, weight less than 2.5kg or with clinical concerns (ie at risk of hypoglycaemia) consider admission as inpatient/outpatient for observation at initiation of therapy.

Practice Points

- Contraindicated in congestive heart failure, heart block and in reactive airway disease.
- For treatment of haemangiomas the twice daily dosing is for practical purposes to improve compliance.
- For cardiac indications, atenolol is an alternative to propranolol. Atenolol can be administered once or twice daily, is a more selective beta 1 antagonist, and is commercially available in liquid form. However, the shorter half-life of propranolol may be advantageous when commencing therapy because steady state is more rapidly achieved, and side-effects are short lived when therapy is discontinued.
- A withdrawal syndrome (nervousness, tachycardia, sweating, hypertension) has been associated with sudden cessation of the drug.
- When used in the treatment of haemangiomas, doses of oral propranolol should be held in infants with viral infections if there is any suggestion of wheeze, cough or respiratory difficulties.

References

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Document Ownership & History

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- Does this policy amend or update an existing policy? Y
- If so, which version?
- Does this policy replace another policy with a different title? Y / N
- If so, which policy (title)?

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<td>V2</td>
<td>SA Health Safety and Quality Strategic Governance Committee</td>
<td>Formally reviewed in line with 5 year scheduled timeline for review.</td>
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<tr>
<td>9/03/2018</td>
<td>V1.1</td>
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