Clinical Guideline

Adrenaline (epinephrine) – diluted for resuscitation
0.1mg/mL injections (1 in 10 000)

Policy developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Approved SA Health Safety & Quality Strategic Governance Committee on: 07 March 2017
Next review due: 31 March 2020

Summary
Adrenaline (epinephrine) – diluted for resuscitation
0.1mg/mL injections (1 in 10 000) Clinical Practice Guideline for the administration of adrenaline to a neonate

Keywords
Endotracheal route, glucose, sodium chloride, tachycardia, tremor, sweating, hyperglycaemia, cardiac monitoring, endotracheal, clinical guideline, Adrenaline (epinephrine) – diluted for resuscitation 0.1mg/mL injections (1 in 10 000)

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? Y
If so, which policies? Adrenaline for resuscitation

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

Staff impact
All Staff

PDS reference
CG007

Version control and change history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date from</th>
<th>Date to</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>November 2012</td>
<td>March 2017</td>
<td>Original version</td>
</tr>
<tr>
<td>2.0</td>
<td>07 March 2017</td>
<td>Current</td>
<td>Review and update</td>
</tr>
</tbody>
</table>

© Department for Health and Ageing, Government of South Australia. All rights reserved.
Adrenaline (epinephrine) - diluted for resuscitation
0.1mg/mL injections (1 in 10 000)

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.
SA Health does not accept responsibility for the quality or accuracy of material on websites linked from this site and does not sponsor, approve or endorse materials on such links.
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

This is a High Risk Medication ⚠
An overdose can be rapidly fatal.
There are two strengths of adrenaline available. This guideline uses the dilute 0.1mg/1mL form.

For information on undiluted adrenaline, see adrenaline (undiluted) 1mg/mL

Synonyms
Epinephrine
Adrenaline (epinephrine) - diluted for resuscitation
0.1mg/mL injections (1 in 10 000)

Dose and Indications

Resuscitation

Intravenous

Intravenous is the preferred route recommended by ILCOR (International Liaison Committee on Resuscitation).

10 to 30 micrograms/kg (0.1 to 0.3 mL/kg of 1 in 10 000), but as weight is usually not available at birth below table can be used.

<table>
<thead>
<tr>
<th>Gestation</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30 weeks</td>
<td>0.25 mL per dose</td>
</tr>
<tr>
<td>30-35 weeks</td>
<td>0.5 mL per dose</td>
</tr>
<tr>
<td>&gt; 35 weeks</td>
<td>1 mL per dose</td>
</tr>
</tbody>
</table>

Give as a bolus dose.
Repeat after 2 to 3 minutes if necessary.

Endotracheal

Endotracheal route should only be used if no intravenous access available.

50 to 100 micrograms/kg (0.5 to 1 mL/kg of 1 in 10 000), but as weight is usually not available at birth below table can be used.

<table>
<thead>
<tr>
<th>Gestation</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30 weeks</td>
<td>1 mL per dose</td>
</tr>
<tr>
<td>30-35 weeks</td>
<td>2 mL per dose</td>
</tr>
<tr>
<td>&gt; 35 weeks</td>
<td>3 mL per dose</td>
</tr>
</tbody>
</table>

Give as a bolus dose.
Repeat after 2 to 3 minutes if necessary.

Preparation and Administration

Intravenous

Only administer dilute adrenaline 0.1 mg/mL (1 in 10,000) for resuscitation.

<table>
<thead>
<tr>
<th>Dose</th>
<th>0.025 mg</th>
<th>0.05 mg</th>
<th>0.075 mg</th>
<th>0.1 mg</th>
<th>0.125 mg</th>
<th>0.15 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0.25 mL</td>
<td>0.5 mL</td>
<td>0.75 mL</td>
<td>1 mL</td>
<td>1.25 mL</td>
<td>1.5 mL</td>
</tr>
</tbody>
</table>

Administered as a push.
Flush line with saline after administration.
Discard remaining solution.

ISBN number: 978-1-74243-376-9
Endorsed by: South Australian Maternal, Neonatal & Gynaecology Community of Practice
Last Revised: 06/03/2017
Contact: NeoMed@health.sa.gov.au
Adrenaline (epinephrine) - diluted for resuscitation
0.1mg/mL injections (1 in 10 000)

Endotracheal
Administer dilute adrenaline 0.1 mg/mL (1 in 10,000) via endotracheal tube followed by positive pressure ventilation (PPV).

<table>
<thead>
<tr>
<th>Dose</th>
<th>0.1 mg</th>
<th>0.2 mg</th>
<th>0.3 mg</th>
<th>0.4 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1 mL</td>
<td>2 mL</td>
<td>3 mL</td>
<td>4 mL</td>
</tr>
</tbody>
</table>

Discard remaining solution.

Compatible Fluids
Glucose 5%, glucose 10%, sodium chloride 0.9%, glucose / sodium chloroacetanilide

Adverse Effects

Common
Tachycardia, tremor, sweating and hyperglycaemia.

Infrequent
Peripheral ischaemia and necrosis at infusion site, excessive increase in blood pressure, ventricular arrhythmias, cerebral haemorrhage, renal vascular ischaemia and pulmonary oedema. These are mostly related to overdose or rapid IV administration.

Rare
Allergic reaction (sodium metabisulfite in preparations).

Monitoring
> Cardiac monitoring and continuous medical supervision.

Practice Points
> Caution - there are two strengths of adrenaline available
> There is insufficient evidence for the use of endotracheal adrenaline, but it is likely that a higher dose will be required to achieve similar blood levels and effect
> Adrenaline is sensitive to light and air. Protection from light is recommended

Reference
SA Health Neonatal Resuscitation Group, Dec 2015, Newborn Life Support
Adrenaline (epinephrine) - diluted for resuscitation
0.1mg/mL injections (1 in 10 000)