NEONATAL MEDICATION GUIDELINE	
Adrenaline (Epinephrine) – Resuscitation	
Scope (Staff):	Nursing, Medical and Pharmacy Staff
Scope (Area):	KEMH NICU, PCH NICU, NETS WA,
This document should be read in conjunction with the Disclaimer.	

Quick Links

Dose	Preparation & Administration	Side Effects & Interactions	Monitoring

Restrictions

Formulary: Restricted

Requires Neonatologist or relevant specialist review within 24 hours of initiation.

HIGH RISK Medication ⚠

There are 2 presentations of adrenaline ampoules. Incorrect administration can cause dosing errors

- adrenaline (epinephrine) **1 in 1000** (1mg/1mL) **1 mL**
- adrenaline (epinephrine) **1 in 10,000** (1mg/10mL) **10mL**

Description

Nonselective adrenergic agonist. Positive inotrope and chronotrope; vasodilator at low dose; vasoconstrictor at high dose. Bronchial smooth muscle relaxant.

Presentation

Ampoule: 1 in 10,000 (1mg/10mL) **10 mL**

Storage

Store at room temperature, below 25°C

Dose

Resuscitation

IV Bolus Injection:

10-30 microg/kg (0.1 to 0.3mL/kg of adrenaline 1:10,000)

Where weight is not known, use approximate dosing table:

Gestation	Dose
23 – 26 weeks	0.1mL
27 – 37 weeks	0.25mL
38 – 43 weeks	0.5mL

Can be repeated every 2-3 minutes if heart rate remains < 60 beats per minute despite effective ventilation and cardiac compression.

Endotracheal:

50-100 microg/kg (0.5 to 1mL/kg of adrenaline 1:10,000)

Where weight is not known, use approximate dosing table:

Gestation	Dose
23 – 30 weeks	1 mL
31 – 35 weeks	2 mL
36 – 43 weeks	3 mL

Can be repeated every 3 to 5 minutes if heart rate remains < 60 beats per minute.

Where dose is not effective an intravenous dose should be administered as soon as venous access is established.

Preparation

IV Bolus:

Use undiluted adrenaline 1:10,000

Endotracheal:

Use undiluted adrenaline 1:10,000

Administration

- The IV route is preferred for resuscitation
- Can be given via the Endotracheal route if IV access cannot be obtained as some infants may have an endotracheal tube inserted prior to intravenous access being established.

IV Bolus:

Administer as push, flush with Sodium Chloride 0.9% 0.5mL.

Endotracheal:

Should be followed with positive pressure ventilation (PPV). There is no requirement to flush after administration via the tube.

Intraosseous:

Intraosseous lines are not commonly used in newborns because of the more readily accessible umbilical vein, the fragility of small bones and the small intraosseous space, particularly in a preterm infant. However, ANZCOR suggests this route can be used as an alternative

Side Effects

Common: tachycardia, tremor, hyperglycaemia

Serious: peripheral ischaemia, overdose or rapid administration can lead to excessive increase in blood pressure, cerebral haemorrhage, renal vascular ischemia, pulmonary oedema.

Interactions

DO NOT withhold adrenaline because of concerns about drug interactions.

Adrenaline is an agonist at alpha and beta adrenoreceptors. It can cause tachycardia, other arrhythmias, hypertension and vasoconstriction; risk is increased by administration with other medications that also have these effects.

Monitoring

- Heart Rate (prompt increase is more sensitive indicator for efficacy)
- Breathing
- Tone
- Oxygenation

Comments

Adrenaline is sensitive to light and air, protection from light is recommended.

Related Policies, Procedures & Guidelines

Clinical Practice Guidelines:

CAHS Neonatal Resuscitation Guideline

References

Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index : a universal resource for clinicians treating pediatric and neonatal patients. 27th ed. Hudson (Ohio): Lexicomp; 2021. p878

Truven Health Analytics. Epinephrine. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2022 [cited 2022 Jun 13]. Available from: https://neofax.micromedexsolutions.com/

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