**Alert**

**Indication**
Management of post-extubation stridor [evidence for effectiveness is not clear]. [1-4]
Initial treatment of outpatients with moderate to severe bronchiolitis. [5]
Initial treatment of croup. [6]

**Action**
Catecholamine drug with combined alpha and beta-agonist actions resulting in peripheral vasoconstriction reversing hypotension and mucosal oedema; increased rate and force of cardiac contractions, reversing hypotension; and reversal of bronchoconstriction and reduction in the release of inflammatory mediators. [7]

**Drug Type**
Inotropic vasopressor.

**Trade Name**
Aspen Adrenaline 1:1,000 injection

**Presentation**
1:1,000 ampoule [1mg/1 mL]

**Dosage / Interval**
0.5 mg/kg [0.5 mL/kg of adrenaline 1:1000 ampoule].
Dose may be repeated every 60 minutes if required following medical assessment of previous dose effect.

**Maximum dose**
N/A

**Route**
Nebulised

**Preparation/Dilution**
Draw up 0.5 mL/kg (0.5 mg/kg) of adrenaline 1:1,000 [1 mg/1 mL] ampoule and add sodium chloride 0.9% to make a final volume of 4 mL.

**Administration**
Deliver final volume of 4 mL via nebuliser [kept upright] over 15 minutes.
Driving gas as prescribed by medical staff. Set flow rate at 6 L/minute.
There will always be dead space that is not available for nebulisation – it is not possible to nebulise to dryness.

**Monitoring**
Administer under close supervision of medical staff.
Ensure cardiorespiratory monitoring including respiratory rate, oxygen saturation, heart rate and blood pressure.

**Contraindications**
Nil

**Precautions**
Infants with arrhythmias, hypertension or hyperthyroidism.
Infants with dilated or ischaemic cardiac disease.

**Drug Interactions**
No information.

**Adverse Reactions**
Tachycardia and arrhythmia.
Systemic hypertension.

**Compatibility**
Fluids: Sodium chloride 0.9%
Drugs: No information.

**Incompatibility**
Fluids and drugs: No information.

**Stability**
Discard remainder after use.

**Storage**
Store below 25°C. Protect from light.

**Special comments**
Cross-check correct adrenaline strength ampoule used.

**Evidence summary**
**Efficacy:**
Nebulised racemic adrenaline for extubation of newborn infants: There are no trials proving the efficacy of nebulised adrenaline compared to placebo or intravenous dexamethasone for post extubation stridor. [1-4]
### Treatment and prevention of bronchiolitis in newborns and infants

Nebulised adrenaline decreases hospitalisations in patients presenting to ED. There is no evidence to support the use of adrenaline for inpatients. [5, 8] (LOE I, GOR A)

### Treatment of children with croup

Nebulised adrenaline is associated with clinically and statistically significant transient reduction of symptoms of croup 30 minutes post-treatment. [6] 30 (LOE I, GOR A) Evidence does not favour racemic adrenaline or L-adrenaline, or IPPB over simple nebulisation. (LOE II, GOR B)

### Safety

Nebulised adrenaline is associated with increased heart rate and blood pressure. [2, 8]

### Pharmacokinetics

Not reported for nebuliser use in newborns or children. No difference in plasma adrenaline concentrations in asymptomatic children with history of anaphylaxis given adrenaline inhaler (10–20 activations) versus children given a placebo.[9]

### References


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