

SALBUTAMOL

ACTION and USES

Salbutamol is a β_2 adrenergic agonist which causes bronchodilation and enhanced mucociliary clearance. It is used intravenously in the treatment of severe bronchospasm unresponsive to continuous nebulised salbutamol.

DOSAGE

Bronchodilation IV:	100nanogram - 1 microgram/kg/minute
Nebulised:	2.5mg diluted to 4ml with sodium chloride 0.9% 4-6 hours
Inhalation:	200-400 micrograms every 4-6 hours
Hyperkalaemia IV	start at 200 nanograms/kg/minute

ADMINISTRATION

By continuous infusion.

RECONSTITUTION

Salbutamol injection is available as a solution containing 1mg/ml in 5ml ampoules. Reconstitution is not necessary but is it diluted for administration. Check the strength as other strengths are available.

Salbutamol 60 micrograms/kg/ml

Add 1.5mg/kg (ie 1.5ml/kg of Salbutamol 1mg/ml) to a 50ml syringe and make up to a final volume of 25ml with glucose 5%.

At this concentration the rate of infusion is calculated by the following formula

Rate (ml/hr) = dose micrograms/kg/minute

see explanation of formula and examples

Other Compatible Diluent

Sodium chloride 0.9%.

INCOMPATIBILITIES

No information available.

STORAGE

Discard opened ampoules immediately after use. Change continuous intravenous infusion every 24 hours. Salbutamol injection is not stocked on the neonatal unit. Order from pharmacy.

MONITORING

The respiratory parameters will be intensively monitor. Check blood glucose as hypoglycaemia can occur and potassium for hypokalaemia. Monitor blood pressure and heart rate. Hypersensitivity reactions have very rarely occurred.

Explanation of formula

Standard strength dilution is based on the premise that a dose of 100 nanograms/kg/min will be given if infusion rate is 0.1ml/hr irrespective of body weight if salbutamol 1mg/ml is diluted to 1.5mg/kg/25ml (60 microgram/kg/ml).

Therefore: 100 nanograms/kg/min

= 6 micrograms/kg/hr (multiplied by 60 minutes)

= 6 micrograms/kg in 0.1ml (chosen rate 0.1ml/hr) = 60 micrograms/kg in 1ml

= 1500 micrograms/kg in 25ml (multiplied by 25)

= 1.5mg/kg in 25ml which is the same concentration as 60 micrograms/kg/ml

Examples

Example 1 Standard strength (1.5mg/kg/25ml) 100 nanograms/kg/min is provided at 0.1ml/hr.

Infant weighs 2.9kg

1.5mg/kg 1.5ml/kg salbutamol (1mg/ml)

For 2.9kg Infant 2.9 x 1.5 (rounded up to 4.4ml)

Therefore add 4.4ml Salbutamol Injection plus 20.6ml of glucose 5% (ie 25ml)

To administer 100 nanograms/kg/min. Rate of Infusion is 0.1ml/hr

To administer 500 nanograms/kg/min. Rate of Infusion is 0.5ml/hr

Example 2 Standard strength (1.5mg/kg/25ml) 100 nanograms/kg/min is provided at 0.1ml/hr

Infant weighs 1.6kg

1.5mg/kg 1.5ml/kg salbutamol 1mg/ml

For a 1.6kg infant 1.6 x 1.5 = 2.4ml

Therefore add 2.4ml Salbutamol Injection plus 22.6ml of glucose 5% (i.e. 25ml)

To administer 100 nanograms/kg/min. Rate of infusion is 0.1ml/hr

To administer 1 microgram/kg/min. Rate if infusion is 1.0ml/hr