

USE OF INTRAVENOUS SALBUTAMOL FOR BRONCHOSPASM

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Lead Clinician : Dr Adrian Marsh, Consultant Emergency Medicine
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INDICATIONS

Severe bronchospasm

PREPARATIONS

Salbutamol injection 500 micrograms in 1 mL ampoule, dilute for **slow IV bolus injection**
Salbutamol solution **for IV infusion** 5 mg in 5 mL ampoule (1 mg/mL) dilute before use

DOSAGE

Loading Dose

This is a slow bolus for immediate treatment – see [Acute severe asthma in adults guideline](#) – patients with life-threatening features. Do not use injection in absence of life-threatening features

250 microgram over 10 min

Use 500 **microgram in 1 mL preparation**, take 0.5 mL and make up to 20 mL with diluent in a 50 mL syringe (see **Diluents**) – this gives concentration of 12.5 micrograms/mL

Administer via a syringe driver at a rate of 120 mL/hr (= 2 mL/min)

Maintenance Dose

Only use this regime for patients with life-threatening features. Note that the concentration is different from the injection guideline above

Initial rate = 5 microgram/min, adjusted according to response and heart rate, usual range 3–20 micrograms/min or more if necessary (Table 1)

Use preparation for IV infusion (5 mg in 5 mL). Add 5 mL (5 mg) of salbutamol to the bag (5 mg in 500 mL = 10 micrograms/mL)

NOTES

Salbutamol increases heart rate, which can lead to palpitations, and this may preclude further dosage increases. Cardiac monitoring is advised in patients with ischaemic heart disease

Salbutamol also causes rapid cellular uptake of potassium, which can lead to serious **hypokalaemia**.

DILUENTS

Sodium chloride 0.9% or glucose 5%

Patient Monitoring

The patient must be attached to a cardiac monitor and have continuous heart rate, minimum of 3 lead monitoring, oxygen saturations. Blood pressure should be measured every 15 minutes for the first hour, every 30 minutes for the second hour and then hourly.

Check plasma potassium 1–2 hr after starting IV salbutamol and after each dosage increase

Any patient who fails to respond to IV salbutamol in a timely manner mandates an early anaesthetic review for consideration of intubation and ventilation.

Table 1: IV infusion (Salbutamol 5 mg in 500 mL)

Dose (microgram/min)	3	4	5	6	7	8	9	10	11
Infusion rate (mL/min)	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1
Pump rate (mL/hr)	18	24	30	36	42	48	54	60	66

Dose (microgram/min)	12	13	14	15	16	17	18	19	20
Infusion rate (mL/min)	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2
Pump rate (mL/hr)	72	78	84	90	96	102	108	114	120