Drug Therapy Protocols: Salbutamol

Policy code	DTP_SAL_0520
Date	May, 2020
Purpose	To ensure a consistent procedural approach to salbutamol administration.
Scope	Applies to all Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless specifically mentioned.
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Salbutamol

May, 2020

Drug class

Beta-adrenergic agonist

Pharmacology

Salbutamol is a direct acting sympathomimetic agent which mainly affects ß2 – adrenoceptors. It primarily acts as a bronchodilator but also has inotropic and chronotropic actions. Additionally it lowers serum potassium levels through its direct stimulation of the sodium/potassium ATPase pump, drawing potassium into cells.[1–3]

Metabolism

Hepatic with renal excretion.[1]

Indications

- **Bronchospasm**
- **Suspected hyperkalaemia** (with QRS widening AND/OR AV dissociation)

Contraindications

- Allergy and/or Adverse Drug Reaction
- Patients less than 1 year

Precautions

- Acute pulmonary oedema
- Ischaemic heart disease

Side effects

- Anxiety
- Tachyarrhythmias
- Tremors
- Hypokalaemia and metabolic acidosis

Presentation

- Metered Dose Inhaler, 100 microg/puff *salbutamol*
- Nebule, 2.5 mg/2.5 mL *salbutamol*
- Nebule, 5 mg/2.5 mL *salbutamol*

Onset	Duration	Half-life
2–5 minutes	16–60 minutes	1.6 hours

Salbutamol

Schedule

- Metered dose inhaler, S3 (Therapeutic Poison).
- NEB, S4 (Restricted drugs).

Routes of administration

Metered Dose Inhaler (MDI)	FR, E PTO, AT, P, ACP1, ACP2, CCP
Nebuliser (NEB)	FR, E PTO, AT, P, ACP1, ACP2, CCP
Intravenous infusion (IV INF)	E CCP

Special notes[1–6]

- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the *QAS Clinical Consult and Advice Line*.
- When clinically appropriate, salbutamol should be administered using a Metered Dose Inhaler in preference to a nebuliser, to minimise aerosol generation.
- Different preparations of salbutamol are used for nebulised and IV routes. The inappropriate IV administration of nebulizer salbutamol solution will cause serious adverse effects.
- For patients with COPD, nebulised salbutamol is to be delivered via nebuliser mask at a rate of 6 L/minute. For all other patients 8 L/minute is appropriate.
- Nebulised salbutamol will reduce serum potassium by 0.5–1 mmol/L within 30 minutes.
- The manufacturer recommends that nebules must be stored within the foil packet and are to be discarded three months after opening. The date that the foil packet is opened should then be clearly marked on the packet.
- All salbutamol infusions are to be initiated using hospital supplies. The intravenous presentation of salbutamol will not be carried by QAS.

Salbutamol

Adult dosages

Bronchospasm

FR	MDI	12 (1.2 mg) MDI inhalations **Single dose only.**
EPTO AT P ACP1 ACP2 CCP	MDI	12 (1.2 mg) MDI inhalations Repeat at **10 minutes.** **No maximum dose.**
FR	NEB	5 mg **Single dose only.**
EPTO AT P ACP1 ACP2 CCP	NEB	5 mg Repeated PRN. **No maximum dose.**
E CCP	IV INF	RSQ Clinical Coordinator consultation and approval required in all situations. Commence infusion at 5 microg/minute (5 mL/hour) and increase by 2.5 microg/minute (2.5 mL/hour) every 3–5 minutes as determined by patients respiratory status.

Suspected hyperkalaemia
(with QRS widening AND/OR AV dissociation)

CCP	NEB	20 mg **Single dose only.**

Paediatric dosages

Bronchospasm

FR	MDI	1–5 years – **6 (600 microg) MDI inhalations** **Single dose only.** ≥ 6 years – **12 (1.2 mg) MDI inhalations** **Single dose only.**
EPTO AT P ACP1 ACP2 CCP	MDI	1–5 years – **6 (600 microg) MDI inhalations** Repeated at 10 minutes. **No maximum dose.** ≥ 6 years – **12 (1.2 mg) MDI inhalations** Repeated at 10 minutes. **No maximum dose.**
FR	NEB	1–5 years – **2.5 mg** **Single dose only.** ≥ 6 years – **5 mg** **Single dose only.**
EPTO AT P ACP1 ACP2 CCP	NEB	1–5 years – **2.5 mg** Repeated PRN. **No maximum dose.** ≥ 6 years – **5 mg** Repeated PRN. **No maximum dose.**

Suspected hyperkalaemia
(with QRS widening AND/OR AV dissociation)

CCP	NEB	5 mg **Single dose only.**