Drug Therapy Protocols: Isoprenaline

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<table>
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<tr>
<th>Date</th>
<th>April, 2018</th>
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<tr>
<td>Purpose</td>
<td>To ensure a consistent procedural approach to Isoprenaline administration.</td>
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<tr>
<td>Scope</td>
<td>Applies to all QAS clinical staff.</td>
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<td>Review date</td>
<td>April, 2021</td>
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<td>Information security</td>
<td>This document has been security classified using the Queensland Government Information Security Classification Framework (QGISCF) as UNCLASSIFIED and will be managed according to the requirements of the QGISF.</td>
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Isoprenaline

Drug class
Chronotrope

Pharmacology
Isoprenaline is a synthetic sympathomimetic amine that is structurally related to adrenaline (epinephrine) but acts almost exclusively on Beta1 (β1) adrenergic receptors with a prominent chronotropic, inotropic and dromotropic effect.[1-3]

Metabolism
Isoprenaline is metabolised primarily in the liver, with metabolites excreted in the urine.[4]

Indications
• Bradycardia with poor perfusion (unresponsive to TCP)

Contraindications
• Allergy and/or Adverse Drug Reaction
• Heart rate > 120 beats per minute
• Tachycardia or AV Block caused by Digoxin (digitalis) toxicity
• Active cardiogenic chest pain

Presentation
• Ampoule, 1 mg/5 mL isoprenaline

Precautions
• Acute or recent myocardial infarction
• Ischaemic heart disease
• Hypotension secondary to intravascular volume depleted
• Hypertension

Side effects
• Palpitations
• Cardiogenic chest pain
• Dysrhythmias
• Headache

Onset (IV INF) | Duration (IV INF) | Half-life
---|---|---
Immediate | Not applicable | < 2 hours
Isoprenaline

**Schedule**

- S4 (Restricted drugs).

**Routes of administration**

| Intravenous infusion (IV INF) |

**Special notes**

- All isoprenaline infusions are to be initiated using hospital supplies; isoprenaline will not be carried by the QAS flight team. Hospital presentations may vary – final concentration must equal 3 mg/50 mL.
- Careful dose adjustment is required for patients with coronary insufficiency, diabetes or hyperthyroidism.
- All cannulae and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.

**Adult dosages**

**Bradycardia with poor perfusion** (unresponsive to TCP)

- Commence infusion at **2 microg/minute** (2 mL/hour) and increase by **1–2 microg/minute** (1–2 mL/hour) every **3–5 minutes** as determined by ventricular response and MAP.
- Syringe preparation: Mix 3 mg (15 mL) of isoprenaline with 35 mL of glucose 5% in a 50 mL syringe to achieve a final concentration of 60 microg/mL. Ensure all syringes are appropriately labelled. Administer via syringe driver.

**Paediatric dosages**

- Note: QAS officers are **NOT** authorised to administer isoprenaline to paediatric patients.