Drug Therapy Protocols: Amiodarone

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Date	September, 2024
Purpose	To ensure a consistent procedural approach to amiodarone administration.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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Amiodarone

Drug class [1,2]

Anti-arrhythmic

Pharmacology

Amiodarone prolongs the duration of the action potential and therefore the refractory period of atrial, nodal and ventricular tissues. It also reduces conduction across all cardiac tissue – including myocardial and conducting system cells. Amiodarone demonstrates electrophysiological properties across all Vaughan-Williams Class groups, which enables a broad spectrum of activity.[1–3]

Metabolism [1,2]

The majority of amiodarone is excreted via the liver and GI tract by biliary excretion; there may be some hepatic recirculation.

Indications [1–6]

- **Cardiac arrest** (in a shockable rhythm) that is refractory to three DCCS[4]
- **Sustained conscious VT** (haemodynamically stable)

Contraindications

- **For patients who are in cardiac arrest:**
  - Tricyclic antidepressant overdose
- **For patients with sustained conscious VT** (haemodynamically stable):
  - Allergy AND/OR Adverse Drug Reaction
  - severe conduction disorders (unless pacemaker or AICD in situ)
  - tricyclic antidepressant overdose
  - current amiodarone therapy
  - concurrent anti-arrhythmic therapy that prolongs the QT interval
  - pregnancy AND/OR lactation

Precautions [1,2]

- **For patients who are in cardiac arrest:**
  - Nil
- **For patients with sustained conscious VT** (haemodynamically stable):
  - hypotension

Amiodarone

Side effects [1,2]

- Hypotension
- Bradycardia
- Nausea AND/OR vomiting
- Peripheral paraesthesia

Presentation

- Ampoule, 150 mg/3 mL *amiodarone*

Onset (IV)	Duration (IV)	Half-life
5 minutes	30 minutes	14–110 days (with chronic dosing)

Schedule

- S4 (Restricted drugs).

Routes of administration

Intravenous injection (IV)	ACP2, CCP
Intraosseous injection (IO)	CCP
Intravenous infusion (IV INF)	CCP, CCP E

Special notes

- Clinicians must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval through the *QAS Clinical Consultation and Advice Line*.
- If the patient is on oral amiodarone, the following cardiac arrest administration protocols continue to be authorised.
- If lidocaine (lignocaine) has been administered to a patient with conscious VT that progresses into cardiac arrest, the following administration protocols continue to be authorised.
- If the patient is in Torsade de Pointes due to suspected prolonged QT interval from excess amiodarone administration, magnesium sulphate administration must be considered. ACP2's must contact the *Clinical Consultation and Advice Line* for advice.
- After completion of a risk/benefit analysis, the QAS authorises the administration of sodium chloride 0.9% (flush or running IV line) following amiodarone administration in cardiac arrest, despite manufacturer's recommendations.

Adult dosages [1–6]

Cardiac arrest (in a shockable rhythm) that is refractory to three DCCS

ACP2, CCP	IV	**300 mg** Slow push over 1–2 minutes. Repeated once at **150 mg** if refractory to five DCCS. **Total maximum dose – 450 mg.**
CCP	IO	**300 mg** Slow push over 1–2 minutes. Repeated once at **150 mg** if refractory to five DCCS. **Total maximum dose – 450 mg.**

Adult dosages *(cont.)*

Sustained conscious VT (haemodynamically stable)

CCP	IV/IO INF	**Loading dose – 300 mg over 30 minutes.** ***Infusion preparation:*** *Mix 300 mg amiodarone (6 mL) with 44 mL of glucose 5% in a 50 mL syringe to achieve a final concentration of 300 mg/50 mL. Ensure syringe is appropriately labelled. Administer infusion via the Perfusor® Space Medication Library (Amiodarone load-Adult).*
E CCP	IV INF	CCP ESoP aeromedical – RSQ Clinical Coordinator consultation and approval required in all situations. Continue amiodarone infusions already commenced at hospital, using the same concentration and administration rate already established. This may involve withdrawing previously mixed and labelled solutions prepared from the referring hospital. Should the RSQ Clinical Coordinator request an amiodarone infusion be commenced, the following procedure must be undertaken. **Loading dose – 300 mg over 30 minutes** ***Infusion preparation:*** *Mix 300 mg amiodarone (6 mL) with 44 mL of glucose 5% in a 50 mL syringe to achieve a final concentration of 300 mg/50 mL. Ensure syringe is appropriately labelled.* **Maintenance dose – 900 mg over 24 hours** ***Syringe preparation:*** *Mix 450 mg amiodarone (9 mL) with 41 mL of glucose 5% in a 50 mL syringe to achieve a final concentration of 450 mg/50 mL. Ensure syringe is appropriately labelled.*

Paediatric dosages [1–6]

Cardiac arrest (in a shockable rhythm) that is refractory to three DCCS

CCP	IV/IO	**5 mg/kg** Slow push over 1–2 minutes. **Single dose only.** ***Syringe preparation for doses 150 mg or less:*** *Mix 150 mg (3 mL) of amiodarone with 12 mL of glucose 5% (totalling 15 mL) in a 20 mL syringe to achieve a final concentration of 10 mg/mL. Administer the weight-based dose required.* ***Syringe preparation for doses greater than 150 mg:*** *Mix 300 mg (6 mL) of amiodarone with 24 mL of glucose 5% (totalling 30 mL) in a 50 mL syringe to achieve a final concentration of 10 mg/mL. Administer the weight-based dose required.*