Drug Therapy Protocols: Metaraminol

Policy code	DTP_META_0924
Date	September, 2024
Purpose	To ensure a consistent procedural approach to metaraminol 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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Metaraminol

Drug class

Sympathomimetic amine[1]

Pharmacology

Metaraminol causes release of accumulated noradrenaline from nerve endings which then acts to increase systolic and diastolic blood pressure by directly and indirectly stimulating the alpha receptors in the sympathetic nervous system. This alpha stimulation causes vasoconstriction of the blood vessels. It also has a positive inotropic effect on the heart.[1,2]

Metabolism

Hepatic.[1]

Indications [1,2]

- **Hypotension** (without hypovolaemia)
- **Prevention and treatment of the acute hypotensive state occurring with anaesthesia**

Contraindications

- Allergy AND/OR Adverse Drug Reaction
- Current MAOI therapy
- Pregnancy
- Hypovolaemia secondary to ongoing haemorrhage

Precautions

- Ischaemic heart disease
- Thyroid disease
- Hypertension
- Diabetes

Side effects [1,2]

- Tissue necrosis if extravasation occurs
- Reduced blood flow to 'non vital' (skin and gut) organs

Presentation

- Ampoule, 3 mg/6 mL *metaraminol*

Onset (IV)	Duration (IV)	Half-life
1–2 minutes	up to 20 minutes	Minutes

Schedule

- S4 (Restricted drugs).

Routes of administration

Intravenous injection (IV)	E CCFP E HARU
Intravenous infusion (IV INF)	E CCFP E HARU
Intraosseous injection (IO)	E CCFP E HARU
Intraosseous infusion (IO INF)	E CCFP E HARU

Special notes

- 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 Consultation and Advice Line*.
- Metaraminol infusions must be administered through a dedicated line.
- All cannula with metaraminol infusions should be as proximal as possible, be free flowing and watched for extravasation.

Special notes *(cont.)*

- All cannulae/EZ-IO® and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.
- Suitably qualified officers should, whenever possible, use invasive pressure monitoring for patients being administered metaraminol infusions.
- Patients on metaraminol infusions without continuous IBP monitoring must have their NIBP measured regularly (every 5 minutes at a minimum).
- Rapid excessive hypertension may precipitate APO, cardiac arrhythmias, cerebral haemorrhage or cardiac arrest.
- NIBP cuffs must not be placed on limbs with infusions to ensure flow is unobstructed.

Adult dosages[1,2]

- **Hypotension** (without hypovolaemia)
- **Prevention and treatment of the acute hypotensive state occurring with anaesthesia**

E CCFP E HARU	**IV/IO**	**0.5 mg** Repeated at **1 minute** intervals. **No maximum dose.**
E CCFP E HARU	**IV/IO INF**	Commence infusion at 1–2 mg/hr and titrate by 0.5 mg–1 mg/hr every 10 minutes according to the MAP.[3] **Maximum infusion rate of 20 mg/hr.** ***Syringe preparation:*** *Withdraw 3 mg of metaraminol (6 mL) into a 10 mL syringe to achieve a final concentration of 3 mg/6 mL. Ensure the syringe is appropriately labelled. Administer via the Perfusor® Space syringe pump.*

Paediatric dosages

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