Drug Guideline Title: Metaraminol

Summary: Metaraminol is a sympathomimetic agent that is used for short term control of hypotension.

Approved by: ICU Medical Director

Publication (Issue) Date: September 2013

Next Review Date: September 2016

Replaces Existing Drug Guideline: Metaraminol

Previous Review Dates: 2002, 2004

1. Introduction contains:
The risk addressed by this policy:

| Patient Safety |

The Aims / Expected Outcome of this policy:

| Metaraminol will be administered safely and without adverse side effects |

Related Standards or Legislation

- NSQHS Standard 1 Governance

Related Policies
- LH_PD2013_C03.01 Drug Administration
- LH_PD2010_C03.00 Drug Prescribing
- LH_PD2008_C03.12 Administration of IV Medication

2. Policy Statement:
- All care provided within Liverpool Hospital will be in accordance with infection control, manual handling and minimisation and management of aggression guidelines.
- Medications are to be prescribed and signed by a medical officer/authorised nurse practitioner (NP) unless required during an emergency.
- All drugs administered during an emergency (under the direction of a medical officer/authorised nurse practitioner) are to be documented during the event, then prescribed and signed following the event.
- Medications are to be given at the time prescribed (as close to the time as is possible when multiple drugs require ‘same time’ administration and, when the nurse is caring for more than one patient, recognition is given to a possible short delay to administration – antibiotics and other lifesaving drugs are to be prioritised) and are to be signed by the administering nurse.
- Parenteral medication prescriptions and the drug are to be checked with a second registered or endorsed enrolled nurse prior to administration. The “rights of drug
administration" must be followed: right: patient, drug, dose, route, administration, time, reason for the drug, documentation, education and evaluation/outcome.

- Adverse drug reactions are to be documented and reported to a medical officer.
- Medication errors are to be reported using the hospital electronic reporting system: IIMS.
- Guidelines are for adult patients unless otherwise stated.

- Metaraminol infusions may be titrated or weaned by Accredited RNs.
- Medical Officers must ensure that titration and/or weaning parameters are specified on the management plan, and have been discussed with the nurse assigned to that patient.
- Metaraminol infusions must be administered via a dedicated lumen of a central line, and never “piggybacked” with other drugs or fluids.
- Blood pressure should be continuously monitored.

For the purposes of this Policy, an accredited RN is: a Registered Nurse (RN) who has completed the required self directed learning packages and has been accredited by the Clinical Nurse Educator/Clinical Nurse Consultant, to administer/titrate inotropic drugs when caring for an Intensive Care Unit (ICU) Patient. The Educator/Clinical Nurse Consultant may deem the nurse competent if the nurse has previous documented experience/qualifications.

3. Principles / Guidelines

Actions¹,²
Metaraminol is a sympathomimetic, adrenoceptor stimulant.

- It directly and indirectly stimulates the alpha (α) receptors in the sympathetic nervous system.
- Alpha stimulation causes vasoconstriction with an increase in both systolic and diastolic blood pressure and an increase in systemic vascular resistance.
- It has a positive inotropic effect on the heart and a peripheral vasoconstrictor action.

Its effects commence 1 to 2 minutes after IV injection and last 20 minutes to 1 hour

Indications¹,²
- Acute or severe hypotension.

Contraindications¹
- Hypovolaemia.
- Hypersensitivity.
- Patients taking monoamineoxidase inhibitors (MAOIs), or within 14 days of such treatment.

Precautions¹,²
- Use cautiously in patients with asthma (risk of allergy to sulfides)
- Administer the dose cautiously as rapid hypertension may give rise to pulmonary oedema, cardiac arrhythmias and arrest.
- Use cautiously in patients with heart or thyroid disease, hypertension, or diabetes, because of its vasopressor effect.

Significant Interactions¹,²
- Use with caution in digitalized patients, as the combination can cause ectopic arrhythmic activity.
- Monoamine oxidase inhibitors and tricyclic antidepressants may potentiate the action of sympathomimetic amines.
**Adverse Effects**\(^1,2\)
- Sinus or ventricular tachycardia.
- Tissue necrosis if extravasation occurs.

**Presentation**\(^1\)
Metaraminol 10mg in 1mL ampoule.

**Administration Guidelines**\(^1,2,3\)

**Bolus: severe hypotension**
- Dilute 10mg metaraminol with 20 mL sterile 0.9% sodium chloride, to give a concentration of 0.5mg/mL.
- Administer 1mL (0.5mg) slow IV bolus and assess blood pressure, if nil response after 2 – 3 minutes, administer a further 1ml and again re-assess the BP, additional doses may be given.

**Infusion**
- Dilute 10mg metaraminol with 50mL sterile 0.9% normal saline, to give a final concentration of 200 micrograms/mL.
- Commence the infusion at 1 mL/hr (200 micrograms/hr), and titrate to achieve the set blood pressure parameters.

**Clinical Considerations**\(^1,2\)
- Ensure accuracy of blood pressure monitoring.
- Assess blood pressure frequently during administration of metaraminol.
- Avoid extravasation as local tissue damage may occur.
- **Syringe Change** – When changing from a near completed infusion to a new syringe:
  - Commence new infusion, prior to the completion of the old infusion.
  - Observe MAP, when this begins to rise, you may safely cease the old infusion.
  - Closely monitor BP.
  - If BP falls, increase infusion rate.

**Performance Measures**
All incidents are documented using the hospital electronic reporting system: IIMS and managed appropriately by the NUM and staff as directed.

**References / Links**

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**Reviewers:** ICU Director, ICU – NM, NUM, ICU – CNE, ICU – CNS, Pharmacist.
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