**Introduction:**
Metaraminol is a potent vasoconstrictor. It is a sympathomimetic amine which works by releasing accumulated noradrenaline from nerve endings leading to increase in systolic and diastolic blood pressure. It also has a weak positive inotropic effect on the heart. The onset of action is 1-2 minutes after IV injection and it is short acting with effect lasting 20-30 minutes. It is metabolised in the liver and can be administered by intraosseous (IO) route as well.

**Indications:**
Metaraminol should only be used by experienced medical professionals with a PICU or anaesthetic background. It is used to prevent or treat acute severe hypotension related to anaesthesia/procedural sedation where prompt restoration of blood pressure and coronary perfusion is a priority. Metaraminol is especially useful as an adjunct in maintaining blood pressure because of vaso-paresis in single ventricle patients during the acute postop period. It may also be used in hypotension or during procedures i.e. chest closure/intubation whilst other measures like fluids, inotropes etc. are being instituted.

**Precautions:**
Ischaemic heart disease, hypertension, thyroid disease
Rapid excessive hypertension can precipitate arrhythmias, cerebral bleed and cardiac arrest

**Contraindications:**
Known hyper-sensitivity to metaraminol, MAO inhibitors, digoxin, hypotension due to on-going bleeding before correcting hypovolemia

**Side effects:**
Tissue necrosis, Reduced blood flow to skin and gut, sinus and ventricular tachycardia, may provoke relapse in patients with history of malaria

**Dose:**
10microgram/Kg/dose, up to a maximum dose of 500microgram for the treatment of acute hypotension, due to loss of vasoconstrictor tone.

**Route of administration:**
Administer as an intravenous injection over 1 to 2 minutes via a central line, but an IO line or a good peripheral canula can be used in an emergency. If given peripherally, the canula should be inspected and flushed before use to check patency and rule out extravasation or phlebitis. Also this should be a dedicated line and should not be mixed with other medications or infusions. Assess response before repeating the dose as the effect of metaraminol can be variable and extra caution should be taken to avoid acute hypotensive state.

**Products available:**
10mg/mL solution for injection.

**To prepare a dose:**
Draw up 1mL of 10mg/mL solution and make up to 20mL with sodium chloride 0.9% in a 20mL syringe, to give a concentration of 500microgram/mL. Then draw up the appropriate dose.

**Preferred diluent:** sodium chloride 0.9%
Other diluents: glucose 5%, glucose 10%
**How to prescribe:**
Prescribe in the once only section of the LTH prescription chart.

**Compatibilities:**
Amiodarone (in glucose), dobutamine, potassium chloride.

**Incompatibilities:**
Amphotericin, dexamethasone, erythromycin, hydrocortisone, phenytoin, ranitidine, thiopental.

**Notes:**
After the dose has been given, slowly flush the line with sodium chloride 0.9% over 5 to 10 minutes.

Metaraminol injection has high osmolarity and a low pH so if extravasation occurs is it likely to cause tissue damage.

Metaraminol contains sodium metabisulphite. The preservatives in metaraminol have been reported to cause hypersensitivity. Sodium metabisulphite in particular is associated with circulatory collapse, depression of the CNS in certain susceptible individuals, particularly in those with associated asthma.

**Handling precautions:** Accidental spillage of metaraminol on the skin can cause dermatitis reactions linked to the presence of the agent’s preservatives.

Metaraminol is unlicensed for children under 12 years old.

**References:**
SPC, Medusa, BNFc 2015-2016, Guys and St Thomas 9th edition, Micromedex