

**Methylene Blue is mainly used to treat acquired methaemoglobinaemia (MetHb) and may have role in resistant vasoplegia**

## Indications

- MetHb fraction > 20%
- MetHb fraction > 10% AND symptomatic or coexisting anaemia/chronic lung disease/cardiac failure
- May have role in treatment-resistant drug-induced vasoplegic shock (discuss with toxicologist)

## Relative contraindications:

- Known G6PD deficiency (discuss with toxicologist)
- Treatment of methaemoglobinaemia induced by nitrites administered to treat cyanide toxicity

## Adverse effects:

- Common: headache, dizziness, nausea, vomiting, chest discomfort, shortness of breath
- Blue staining of mucous membranes
- Pain at site of IV administration
- Doses > 7mg / kg given over less than 1-2 hours may induce methaemoglobinaemia
- Serotonin toxicity may be induced in the presence of serotonergic drugs or MAOI, but is not a reason to with-hold methylene blue if clinically indicated

## Presentation

- 10 mL vial of 1% solution (10 mg per mL)

## Dose and administration for acquired methaemoglobinaemia

- 1-2 mg / kg (0.1-0.2 mL / kg of 1% solution) IV over 5 minutes, followed by a 20 mL normal saline flush
- May be administered via intraosseous route if no IV access available
- Onset of effect is rapid, with maximal effect at 30 minutes
- Measure MetHb fraction % every 30 minutes post methylene blue administration to assess response
- Repeat doses are seldom required, but a second dose may be given 30 minutes post initial dose if the MetHb fraction remains > 20% or if clinical signs of hypoxaemia still exist
- **Dapsone** toxicity may produce prolonged methaemoglobinaemia + require an infusion of methylene blue (commence at 0.25 mg/kg/hour and discuss with toxicologist)

***\*MetHb can be induced if large doses (> 7 mg/kg) of methylene blue are given over less than 1-2 hours***

## Therapeutic endpoint:

- Decrease in MetHb fraction % and resolution of hypoxaemia-related symptoms

## Pregnancy:

- Methylene blue may cause adverse effects in all stages of pregnancy and should only be administered to patients with a raised MetHb fraction % and significant symptoms of hypoxaemia. Discuss all cases with a clinical toxicologist.