# Methylene Blue

Methylene Blue is used to treat acquired methaemoglobinaemia (MetHb)

## Indications
- Methaemoglobinaemia with clinical evidence of end organ dysfunction:
  - Shortness of breath, chest pain, confusion
- Consider if methaemoglobin concentration > 25%
  
  Methaemoglobinaemia reduces carriage of O₂, leading to a state of relative hypoxaemia
- May have role in treatment-resistant drug-induced vasoplegic shock (discuss with toxicologist)

## 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 flush
- May be administered via interosseous route if no IV access available

## Contraindications:
- Doses may be repeated up to a maximum of 7 mg/kg in a 24 hours period
- Dapsone toxicity may produce prolonged methaemoglobinaemia and require an infusion of methylene blue (commence at 1 mg/kg/hour and discuss with toxicologist)
- Rarely, massive methaemoglobinaemia not responding to methylene blue may require hyperbaric oxygen therapy or exchange transfusion

## Adverse effects:
- Common adverse effects include:
  - Headache, dizziness, nausea, vomiting, chest discomfort, shortness of breath
- Blue staining of mucus membranes
- Pain at site of IV administration
- May induce methaemoglobinaemia when given in large doses (> 7 mg / kg in a 24 hours period)

## Therapeutic endpoint:
- Decrease in MetHb concentration 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 concentration and significant symptoms of hypoxaemia

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