Methylene blue intravenous for adults (methylthioninium chloride)

Who can administer

Doctor only administration

Important information

- **The National Poisons Information Centre (NPIC) must be contacted before using this drug**
- **Drug interaction potential including fatalities** (see below)
- Unlicensed preparation
- **Flush line** before and after with **Glucose 5%**
- **This monograph only refers to the INTRAVENOUS use of this product. For other uses (demarcation of surgical tissues and operative specimens, and as a seal test for urinary and colorectal sutures)-** see manufacturers information - attached document [ref 1]

The MHRA have issued the following advice on the use of methylthioninium chloride [ref 2]

- Methylthioninium chloride by the intravenous route **is approved only for drug-induced methaemoglobinaemia** at a dose of 1 to 2mg/kg for adult patients
- **Off-label use** of methylthioninium (including use in parathyroid localisation or its use at doses exceeding the licensed dose) should be carefully evaluated in view of the potential for CNS toxicity
- Intravenous methylthioninium chloride **should be avoided in patients who have been treated recently with serotonergic antidepressants**, including SSRIs, SNRIs, MAOIss, clomipramine, and venlafaxine (fatalities reported)
- If use of intravenous methylthioninium chloride cannot be avoided, the **lowest possible dose** should be used and the **patient observed** closely for CNS effects for up to four hours after administration
- If features of **CNS toxicity** develop after use of methylthioninium, the patient should be **monitored closely and given supportive care**

Available preparations

Proveblue Methylthioninium chloride (methylene blue) injection 5mg per mL

Available as **10mg in 2mL** and **50mg in 10mL** ampoules (50mg in 10mL usually in stock)

Reconstitution

Already in solution

Draw up using a 5 micron filter needle

Infusion fluids

Glucose 5% ONLY

Methods of intravenous administration

Slow intravenous injection

- Dilute in 50 to 100mL Glucose 5%
- Administer **very slowly over 5 minutes** to prevent high local concentrations of the compound from producing additional methaemoglobin
- Ideally use a central line (due to extreme pH) [ref 4]

Dose in adults

Methaemoglobinaemia [ref 3]

- NPIC advice essential
- Initially, give 1 to 2mg/kg
- Seek advice from NPIC regarding repeat doses (which are normally given after 30 to 60 minutes)
- Dosing can be complicated and total doses in excess of 4mg/kg should not be given without prior discussion with the NPIC

Other indications

- See MHRA guidance above
- Doses are not given here as a result of the above MHRA guidance. However, should it be required for other indications, information is available via http://www.medicinescomplete.com/

Renal impairment

- Should be used with caution in patients with moderate to severe renal disease since there is limited data available and it is predominantly renally eliminated. Lower doses (less than 1mg/kg) may be needed

Monitoring

- May cause nausea, chest and abdominal pain, dizziness, headache, sweating, confusion, hypertension
- Monitor for **serotonin syndrome** if administered to patients who are on serotonergic drugs
- Methaemoglobin concentration should be measured every 60 minutes after therapy to assess effectiveness, or sooner if cyanosis recurs
- Note that methaemoglobinaemia may recur and further treatment may be required

Storage

- Store below 25^{0}C
- Do not freeze or refrigerate

References

Proveblue SPC 02/2020

1. Product information Blue Marker Aquettant (attached document for use as a dye)

2: MHRA guidance April 1st 2009

3: Toxbase printed 29th September 2021

4: Injectable medicines guide- downloaded from Medusa 29th September 2021

Therapeutic classification

Antidotes and chelators