

MORPHINE SULPHATE

ACTION and USES

Morphine is a narcotic analgesic, which is used for sedation and pain relief. It is also used in babies receiving muscle relaxants to assist ventilation, during therapeutic cooling and in the management of neonatal abstinence syndrome (NAS)-refer to guidelines and palliative care

DOSAGE

IV Bolus: 100micrograms/kg (not to be repeated within 6 hours)

Additional IV bolus doses: 20-50micrograms/kg boluses may be given in addition to an infusion but only under consultant's instruction

IV Continuous infusion: Loading dose: 100micrograms/kg/dose

Maintenance dose: 10-20 micrograms/kg/hour (Initially 20micrograms/kg/hour for 12 hours during therapeutic cooling if ventilated then reduce to 10micrograms/kg/hour

Maintenance dose should be prescribed to start immediately after the loading dose. Check loading dose has been given before administration of maintenance dose.

ORAL When converting from IV to oral calculate the daily dose and convert on basis 1microgram IV = 2micrograms orally and then prescribe in divided doses 6 to 8 hourly.

The IV preparation can be given orally if no oral preparation available.

For palliative care (if not had IV previously) the starting oral dose is 100micrograms/kg 3-4 hourly. Increase dose by 50% as required.

WEANING

Duration of infusion

<2 days stop infusion;
2-6 days

≥7 days

Weaning

weaning not necessary

Wean rapidly: ↓ infusion to 50% of original dose for 8-12 hours, then to 25%.

Aim to discontinue infusion within 24-48 hours of starting weaning process.

Wean slowly: ↓ infusion by 25% of original dose every 12-24 hours, then stop.

If signs of withdrawal develop, consider increasing to the previous dose and wean more slowly

Where a baby requires an infusion only for weaning morphine, consider switching to oral morphine before re-siting a cannula. The oral dose for weaning should be given every 6-8 hours.

ADMINISTRATION

IV Bolus/Loading dose: over 5 minutes but may be given over 1 minute prior to intubation.

Maintenance dose: by continuous infusion.

RECONSTITUTION

For Bolus/Loading dose

Morphine sulphate injection 1mg/mL as a ready to use solution in a 10mL ampoule,

Example: Bolus/Loading dose (mL) = 0.1 x Body weight (Kg)

Must be diluted to 100 micrograms/mL for doses of less than 100micrograms (0.1mL)

Morphine sulphate 100micrograms/mL

Dilute 1mL of morphine sulphate injection 1mg/mL with 9mL of sodium chloride 0.9% and mix well.

Example: Loading dose (mL) = Body weight (Kg)

For Continuous infusion

Morphine sulphate 40micrograms/mL

Add 2mL of morphine sulphate injection 1mg/mL to 48mL sodium chloride 0.9% and mix well.

Example: a maintenance dose of 10micrograms/kg/hr: rate (mL/hr) = 0.25 x Body weight(Kg)

Morphine sulphate 20micrograms/mL (Half Strength)

Must write "Half Strength" and concentration on IV Administration record.

Add 1mL of morphine sulphate injection 1mg/mL to 49mL sodium chloride 0.9% and mix well.

Example: a maintenance dose of 10micrograms/kg/hr: rate (mL/hr) = 0.5 x Body weight(Kg)

Other Compatible diluents

Glucose 5% - 20% and sodium chloride 0.9% or 0.45%. Recommend infusion via central line if diluted in 20% glucose.

COMPATIBILITIES (at Y-site)

Heparin, dopamine, dobutamine, sodium bicarbonate, parenteral nutrition

INCOMPATIBILITIES

Phenobarbital, phenytoin, aciclovir, furosemide and tetracycline.

STORAGE

Solutions prepared on the ward should be made up immediately before use and used within 24 hours.

Morphine Injection 1mg/mL, 10ml ampoules - Store in the controlled drug cupboard. Discard unused portion of the ampoule immediately after opening.

Morphine oral Solution 100micrograms/mL is stocked on ward. Discard 3months after opening

MONITORING

Hypotension, bradycardia, constipation, respiratory depression and urinary retention are expected side effects. Seizures have been reported at maintenance infusion rate greater than 15 microgram/kg/hr.

Naloxone is a specific antidote to morphine.