

MORPHINE SULPHATE

DESCRIPTION AND INDICATION FOR USE

Morphine sulphate is an opioid receptor agonist, binding to receptors in the brain, spinal cord and other tissues. Morphine may be used as a sedative and analgesic, as a respiratory depressant to enhance assisted ventilation, and orally (as morphine hydrochloride) in the treatment of Neonatal Abstinence Syndrome (NAS).

DOSE

IV stat: 0.1 mg/kg/dose

IV infusion: 5 to 20 microgram / kg / hour
Titrate dose according to patient's condition and response. Higher doses of up to 40 microgram/kg/hour may be used in ventilated patients.

RECONSTITUTION/DILUTION

Ampoule = 10 mg/mL

NOTE: 1000 micrograms = 1 mg

(STORED IN DD SAFE)

IV stat: Withdraw 0.1 mL of 10 mg/mL strength morphine and add to 0.9 mL of water for injection. Concentration = **1 mg/mL**. Discard excess volume to obtain dose required.

IV infusion: Dilute if required, as above.
Withdraw required amount of morphine and make up to ordered volume with infusion fluid.

Usual order will be as follows:

SINGLE (1) STRENGTH:

DRUG	HOW TO MAKE UP	DOSE EQUIVALENT	DOSE RANGE
Morphine	0.5 mg/kg in 50 mL	1 mL/hr = 10 microgram/kg/hr	5 – 40 microgram/kg/hr

DOUBLE (2) STRENGTH:

DRUG	HOW TO MAKE UP	DOSE EQUIVALENT	DOSE RANGE
Morphine	1 mg/kg in 50 mL	1 mL/hr = 20 microgram/kg/hr	5 – 40 microgram/kg/hr

NEVER USE INFUSION SOLUTION TO ADMINISTER A STAT DOSE OF MORPHINE – rather prepare dose of morphine as described above under IV stat dose

ROUTE AND METHOD OF ADMINISTRATION

IV stat: Give as a slow push over at least 5 minutes

IV infusion: Given as a continuous infusion via syringe pump

IM, SC: **NOT recommended in neonates**

COMPATIBILITY INFORMATION

Please contact your ward pharmacist for information on drugs or fluids not appearing in the table below. Medications that are not routinely used in the Special Care Nursery have not been included in this table and may be incompatible.

	Compatible	Incompatible
Fluids	Dextrose 5%, Dextrose 10%, 0.9% Sodium chloride	
Drugs	Adrenaline, Dobutamine, Midazolam	Aciclovir, Aminophylline, Flucloxacillin, Frusemide, Phenobarbitone, Phenytoin, Sodium bicarbonate

SIDE EFFECTS

- Respiratory depression, apnoea, respiratory arrest
- Sedation
- Hypotension, brady/tachy-cardia, flushing, sweating
- Urinary retention, constipation, abdominal cramps, vomiting
- Muscle rigidity, tremor
- Miosis

SPECIAL PRECAUTIONS

- Use with caution in patients with cardiac arrhythmias, severe renal and/or hepatic dysfunction, urinary retention and patients with substantially decreased respiratory reserve, or pre-existing respiratory depression

CONTRAINDICATIONS

- Shock, hypotension
- Increased intracranial pressure, convulsive states such as status epilepticus

DRUG INTERACTIONS

Central Nervous System Depressants (eg: midazolam):

Observe for additive effect on sedation and respiratory depression

Ranitidine (and other alkalisising agents):

May potentiate the effects of morphine by reducing morphine clearance

Orally administered medications:

Morphine delays gastric emptying therefore may delay absorption of medications administered orally

NURSING RESPONSIBILITIES

- Observations/Monitoring
 - Monitor heart rate and blood pressure
 - Monitor respiratory rate and observe chest movement – be alert for early signs of under ventilation or apnoea
 - Transcutaneous O₂/CO₂ or oximetry if indicated and requested by Paediatrician/Paediatric Registrar
- Intubation and ventilation equipment must be prepared at the bedside prior to administering morphine
- Medical staff should be on hand when giving STAT dose as ventilation may need to be initiated/increased.
- Change IV syringe every 24 hours. When changing syringe, ensure line is clamped to prevent administering a bolus
- Check the rate ordered corresponds with the dose required (microgram / kg / hour)
- **Naloxone** is an opioid antagonist and may be used to rapidly reverse morphine toxicity
Dose: **100 microgram/kg IV stat**