

Morphine

FORM Ampoules containing 10mg/1ml solution for injection
NB. Caution as higher strength is available

INDICATION Treatment of pain and/or sedation.
Seizures due to opiate withdrawal

DOSE RANGE

MORPHINE FOR SEDATION / ANALGESIA - Continuous I.V. Infusion.

AGE	DOSE	FREQUENCY	ROUTE
Neonate – 6 months	5 to 40 microgram/kg/HOUR *	Continuous infusion	I.V.

*Start at lower dose increasing gradually if necessary.

Doses above 20 microgram/kg/hr must be authorised by consultant

MORPHINE FOR SEIZURES FOLLOWING OPIATE WITHDRAWAL - Continuous I.V. Infusion.

AGE	DOSE	FREQUENCY	ROUTE
Neonate – 6 months	10 to 20 microgram/kg/HOUR *	Continuous infusion	I.V.

*Start at lower dose increasing gradually if necessary.

If seizures are ongoing, or if the baby has not already been on opiate therapy, consider a loading dose of morphine 50 – 100 micrograms/kg as a short infusion. Note that if the higher dose is used there is a risk of apnoea which may necessitate respiratory support

FOR TREATMENT OF PAIN.

AGE	DOSE	FREQUENCY	ROUTE
Neonate	50microgram/kg/dose	Repeat every 6 hours if necessary	IV.
	100microgram/kg/dose	Repeat every 6 hours if necessary	S/C / IM*
1month to 6months	100microgram/kg/dose	Repeat every 6 hours if necessary	IV
	100 to 200microgram/kg/dose	Repeat every 6 hours if necessary	SC /IM*

***Intravenous route preferred, IM only to be used when no IV access available. Doses should be reviewed regularly and adjusted according to the baby's response. For chronic pain/palliative care, see separate policies.**

MORPHINE FOR SEDATION - I.V. Bolus dose for intubation.

AGE	DOSE	FREQUENCY	ROUTE
Neonate	100microgram/kg/dose	One dose only. Repeated once if necessary.	IV.
1month to 6months	100microgram/kg/dose	One dose only.	IV

West of Scotland NEONATAL Parenteral Drug Monographs

CONTINUOUS INFUSION INFORMATION

PRESCRIPTION OF CONTINUOUS INFUSION

STRENGTH	CONCENTRATION	RATE = DOSE
Single Strength	1mg/kg in 50ml	1ml/hr = 20microgram/kg/hr
Double Strength	2mg/kg in 50ml	0.5ml/hr = 20microgram/kg/hr
Quadruple Strength	4mg/kg in 50ml	0.25ml/hr = 20microgram/kg/hr

RECONSTITUTION

Already in solution. **MUST** be diluted prior to use

DILUTION

A 2 step dilution is required for all doses of Morphine by continuous IV infusion as follows;

INITIAL DILUTION

Morphine 10mg/ml injection	1ml
Sodium Chloride 0.9% inj	Up to 10ml total

Gives a 1mg in 1ml solution, use required volume as per the following instructions;

SECOND DILUTION

SINGLE STRENGTH

Using 1mg/1ml solution

1 x wt (kg) is the number of ml of 1mg/1ml to be diluted up to 50ml total with infusion fluid (equivalent to **1mg/kg in 50ml**)

DOUBLE STRENGTH

Using 1mg/1ml solution

2 x wt (kg) is the number of ml of 1mg/1ml to be diluted up to 50ml total with infusion fluid (equivalent to **2mg/kg in 50ml**)

QUADRUPLE STRENGTH

Using 1mg/1ml solution

4 x wt (kg) is the number of ml of 1mg/1ml to be diluted up to 50ml total with infusion fluid (equivalent to **4mg/kg in 50ml**)

METHOD OF ADMINISTRATION

By continuous intravenous infusion, flow rate adjusted according to the baby's response (see prescription section above for details).

WARNING:- DO NOT FLUSH THROUGH A LINE CONTAINING MORPHINE AS IT IS A POTENT DRUG AND MAY CAUSE SERIOUS PROBLEMS

West of Scotland NEONATAL Parenteral Drug Monographs

GIVING A BOLUS FROM THE CONTINUOUS INFUSION SYRINGE

STRENGTH	BOLUS DOSE	VOLUME TO BE ADMINISTERED FROM SYRINGE
Single Strength	50microgram/kg	2.5ml
	100microgram/kg	5ml
Double Strength	50microgram/kg	1.25ml
	100microgram/kg	2.5ml
Quadruple Strength	50microgram/kg	0.63ml
	100microgram/kg	1.25ml

Administer as per local protocol

HANDS FREE BOLUS PROTOCOL

Morphine S/S Hands free bolus	50 microgram/kg (2.5ml) and hands free bolus at a rate of 40 ml/hr over 3min 45 sec. 100 microgram/kg (5ml) and hands free bolus by increasing from default rate to 80 ml/hr over 3min 45 sec.
Morphine D/S Hands free bolus	50 microgram/kg (1.25ml) and hands free bolus at a rate of 20 ml/hr over 3min 45 sec. 100 microgram/kg (2.5ml) and hands free bolus by increasing from default rate to 40 ml/hr over 3min 45 sec.
Morphine Q/S Hands free bolus	50 microgram/kg (0.63ml) and hands free bolus at a rate of 10ml/hr over 3min 45 sec. 100 microgram/kg (1.25ml) and hands free bolus by increasing from default rate to 20 ml/hr over 3min 45 sec.

Rate of infusion won't go below 10ml/hr on hands free bolus for Q/S.

West of Scotland NEONATAL Parenteral Drug Monographs

SHORT IV BOLUS INJECTION

(For information on giving an IV bolus from the continuous infusion syringe see page 3).

RECONSTITUTION: For all doses of morphine by the IV route, dilution of the Morphine **10mg/ml** injection will be required to produce a suitable solution of morphine for IV administration.

DILUTION:

Morphine 10mg/ml injection	0.4ml
Sodium Chloride 0.9% inj	Up to 20ml total

This gives a 200 microgram in 1ml solution. Use required dose (see below)

Dosage guide:

- 100microgram/kg = 0.5ml/kg of this solution
- 50microgram/kg = 0.25ml/kg of this solution

ADMINISTRATION Administer as a short bolus as per local practice (see tables on page 3)

WARNING:- DO NOT FLUSH THROUGH A LINE CONTAINING MORPHINE AS IT IS A POTENT DRUG AND MAY CAUSE SERIOUS PROBLEMS

COMPATIBILITY

Solution compatibility	sodium chloride 0.45%, sodium chloride 0.9%, Glucose 5%, Glucose 10%,
Solution incompatibility	No information
IV Line compatibility	Aminophylline, Atracurium, Caffeine Citrate, Clonidine, Dinoprostone, Dobutamine, Dopamine, Fluconazole, Gentamicin, Heparin, Insulin, Lipid, Naloxone, Vecuronium, PN, SMOFvits In 5% Dextrose only; Adrenaline, Fentanyl, Midazolam, Milrinone, Noradrenaline, Sodium Nitroprusside, Vancomycin.
IV Line incompatibility	Aciclovir, Flucloxacillin, Furosemide, Indometacin, Omeprazole, Phenytoin, Sodium Bicarbonate

THIS LIST IS NOT EXHAUSTIVE PLEASE CONTACT PHARMACY FOR FURTHER INFORMATION ON COMPATIBILITY WITH ANY MEDICINES NOT INCLUDED

CAUTIONS, CONTRA-INDICATIONS AND SIDE EFFECTS

See Summary of Product Characteristics and most recent edition of BNF for Children (links below)

FURTHER INFORMATION

- Tolerance occurs in 4-5 days, which may require an increase in dose. If used for more than 5 days, consider reducing dose gradually.

PH 2.5 – 4.5

LICENSED STATUS Not licensed for use in children under 12 years.

LINKS [BNF for Children](#) / [Electronic Medicines Compendium](#):

APPLICABLE POLICIES [West of Scotland Neonatal Guidelines](#): Consult local policy if applicable

Document Number:	004	Supersedes:	003
Prepared by:	WoS Neo pharm group	Checked by	
Date prepared	May 2016	Date updated	October 2022
Updated by	Maria Tracey	Review Date	October 2024

Administer reconstituted solutions immediately.

All vials, ampoules and infusion bags are for single use only unless otherwise stated.

Dose may vary depending on indication, age, renal function, hepatic function, and concomitant medications.

This monograph should be used in conjunction with the package insert, BNF for Children, and Summary of Product Characteristics.

For further advice contact your clinical pharmacist or pharmacy department.