Guidelines for the Use of Morphine Sulfate

Recommended Neonatal Dose, Route, and Interval

A. Analgesia:
   - **Bolus IV over 5 minutes:** 0.05-0.2 mg/kg/dose. Repeat as required, usually Q 4 hours. May also be given IM or SC.
   - **Continuous IV infusion:** 10 to 20 mcg/kg/hour

B. Treatment of iatrogenic withdrawal:
   - From morphine infusion: equivalent DAILY dose divided Q4h.
     
     Example: 1.5kg baby receiving 0.05 mg/kg/hr morphine.

     DAILY morphine dose = 1.8 mg [0.05 mg/kg/hr X 1.5 kg X 24 hrs]

     Morphine dose = 1.8 mg divided every 4 hours... 0.3mg IV Q4h

   - From fentanyl infusion: 50 times HOURLY fentanyl dose given Q4h

     Example: 1.5kg baby receiving 3 mcg/kg/hr fentanyl.

     HOURLY fentanyl dose = 4.5 mcg [3 mcg/kg/hr X 1.5 kg]

     Morphine dose = 50 X 4.5 mcg = 225 mcg = 0.225mg... 0.23mg IV Q4h

     Reduce dose by 10-20% of original dose every 24-72 hours. Adjust weaning schedule based on signs and symptoms of withdrawal.

   - Give IV push over 5 minutes.

   - Oral dose is approximately 3 to 5 times IV dose. (ex: 0.2mg IV = 0.6–1mg PO)

C. Neonatal Abstinence Syndrome

   - Start when infant has a Finnegan score of > 8 three times or >10 twice, seizures, or significant weight loss.
   - Initial PO dose: (based on Finnegan Neonatal Abstinence Scoring)

     Scores 8-10:  0.24 mg/kg/day divided Q3-4 hours

     Scores 11-13: 0.28 mg/kg/day divided Q3-4 hours

     Scores 14-16: 0.32 mg/kg/day divided Q3-4 hours

     Scores ≥ 17: 0.36 mg/kg/day divided Q3-4 hours
- Increase the dose by 0.04 mg/kg/dose Q3-4 hours until the score is ≤ 4.
- Weaning may be started after the infant has maintained a score of ≤ 4 for at least 3-5 days. If the score remains ≤ 4, the dose should be decreased by 10% of the original dose every 24 hours. Discontinue oral morphine when the dose reaches ≤ 0.15 mg/kg/day.

Chief Indications

- Pain management
- Treatment of opiate withdrawal
- Neonatal Abstinence syndrome

Possible Adverse Reactions:

1. Respiratory depression, dependence
2. Increased intracranial pressure, drowsiness
3. Nausea, vomiting, constipation
4. Hypotension, bradycardia, peripheral vasodilation, histamine release
5. Antidote: Naloxone (Narcan) 0.1 mg/kg/dose rapid IV push or 0.2 mg/kg/dose ET

Contraindications & Precautions

- Hypersensitivity to morphine
- Severe respiratory depression, reactive airway disease, severe liver or renal dysfunction, GI obstruction/ileus Use with caution in patients with hypersensitivity to other opioids.

Nursing Implications

- Monitor respiratory status, blood pressure, and heart rate.

References:

1. Neofax 2010

Reviewed/Revised: 11/2010 by

Samir Alabsi, MD
Kelli DeVore, Pharm. D, BCPS
Rebecca Willson, ARNP, NNP