Background information

Single dose intrathecal morphine (in doses of 100 to 200mcg) can provide safe and effective postoperative analgesia for up to 24 hours. The risk of serious side effects, most importantly respiratory (opioid-induced) ventilatory impairment is extremely low, but as with systemic morphine the risk increases with increasing doses.

Morphine is injected into the subarachnoid (intrathecal or spinal) space by an anaesthetist prior to surgery. The onset of analgesia is 45-60 minutes and the duration analgesic effect 4-24 hours, typically at least 12 hours.

Key Points

1. Intrathecal morphine must **only** be injected by the anaesthetist.
2. Following intrathecal morphine increased frequency of observations is required including respiratory rate, conscious state and bladder function.
3. All medical and nursing staff caring for women who have intrathecal morphine should be aware of risk and management of side-effects. These include:
   - Respiratory depression and airway obstruction
   - Sedation
   - Nausea and vomiting
   - Pruritus
   - Inadequate pain relief
   - Hypothermia
Management

ORDERING / DOCUMENTATION OF INTRatheCAL MORPHINE

- The dosage and administration of the intrathecal morphine is written on the MR280 Epidural / Spinal Analgesia Chart.
- Apply a yellow ‘Morphine Given’ sticker on the MR810 Medication Chart plus on the MR280 Epidural / Spinal Analgesia Chart.

Breakthrough Pain

Patients will usually have regular paracetamol + nonsteroidal anti-inflammatory drugs (NSAIDs), tramadol, and an opioid (oxycodone or buprenorphine) prescribed for breakthrough pain written up on the MR810 Medication Chart. Patient controlled epidural or intravenous analgesia may also be in use.

Observations

Following administration of intrathecal morphine, follow observations as per MR 280:

- Respiratory rate at 5, 15, 20 and 30 minutes, then hourly for 12 hours
- Conscious state at 5, 10, 15, and 30 minutes, then hourly for 12 hours.

After 12 hours patients should have observations performed at the frequency dictated by their primary surgery or as other analgesic methods utilised.

Bladder Care

The indwelling catheter (IDC) is to remain in situ for 24 hours after the last dose of intrathecal morphine. If an IDC is not present, bladder function is to be assessed 2 hourly.

If unable to void within 4-6 hours bladder function should be assessed. Indwelling catheterisation may be required. See KEMH Clinical Guideline Bladder Management during Labour and the Postnatal Period for guidance on bladder management.

Management of Side Effects

Respiratory Function

All opioids can cause central respiratory depression, sedation, and airway obstruction. This is more common if higher doses are used and in elderly patients, although the response may be unpredictable. Care must be taken with those with sleep apnoea and the elderly. Intrathecal morphine has a particular time-line for respiratory depression related to its kinetics in
cerebrospinal fluid, the highest risk period being 3 to 12 hours after administration. The clinically detectable incidence of respiratory depression after caesarean section is 1 in several thousand, but is higher in the non-obstetric population.

Respiratory depression will be reversed temporarily by intravenous naloxone 0.4mg (repeated as required). A continuous infusion of naloxone may be required.

**If Respiratory rate is < 8**
- Give oxygen 6l/min via Hudson mask.
- Call the anaesthetist.
- Administer naloxone 0.4mg IV, repeating every 2 minutes to a maximum 8 doses.
- Intermittent ventilation with a bag and mask may be necessary for severe respiratory depression.

**Sedation**
If sedation occurs, then respiratory depression must be suspected. Intravenous Naloxone should be administered as per below if there is clinical concern.

**If conscious state < 3**
- Give oxygen at 6l/min via Hudson mask
- Call anaesthetist
- Give naloxone 0.4mg IV (as above for respiratory depression

**Pruritis**
Itching is common across chest, abdomen and face.

*Mild itch* - a serotonergic antagonist such as ondansetron 4mg be beneficial.

*Moderate to severe itch* - intravenous or subcuticular naloxone (50-100mcg) is more effective, but may partly reverse the analgesic effects. An antihistamine (eg promethazine 12.5-25 mg PO/IM) may also be beneficial but may increase sedation.
**Nausea and Vomiting**
All opioids can cause nausea and vomiting and will usually respond to antiemetics as per the hospital postoperative and vomiting (PONV) algorithm (MR 810.02).

**Inadequate Pain Relief**
Intrathecal morphine can sometimes fail to be effective. An alternate strong analgesic should be prescribed for breakthrough pain (preferably tramadol initially, then buprenorphine or oxycodone if required).

**Urinary Retention**
Patients are usually catheterised following a spinal anaesthetic because they lose bladder sensation. However if they are not catheterised the patient should be observed (see above for Bladder Function).

**Hypothermia**
Rarely, intrathecal morphine is associated with vasodilation and sweating, leading to sweating. Notify the anaesthetist if this occurs.

### References and resources


### Related policies

### Related WNHS policies, procedures and guidelines

Keywords: Intrathecal Morphine, Intrathecal, Morphine, post-operative pain, Spinal Analgesia,
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