Intrathecal Morphine

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Advantages of ITM
- The quality of analgesia produced with ITM has been shown to be superior to PCA Morphine whilst simultaneously reducing PCA Morphine consumption.
- ITM produces better patient satisfaction than PCA Morphine.
- PONV rates (~32-40%) with ITM are no greater than with SAB using local anaesthetic followed by PCA.
- ITM produces less sedation and more ability to mobilise than equivalent systemic Morphine.
- The incidence of serious respiratory depression is not known with 0.1-0.2mg Morphine but is probably no more than common with PCA Morphine. (1mg/5min, no background).
- Anaesthetists and anaesthetists within the department comment that ITM is particularly useful for ‘high risk’ patients.

Efficacy
As with systemic Morphine larger doses are required for more traumatic, painful procedures.

The length of analgesia also relates to dose and type of surgery. From the literature some effect is measurable up to 24 hours with 0.1mg, although more typically 0.1-0.2mg can be expected to give about 12-18 hours analgesia after moderate surgery.

Adverse Effects
Respiratory Depression
Respiratory depression (defined as an increase in paCO2 and depression of the ventilatory response to CO2 and hypoxia) is a constant, dose dependent effect of ITM – as with systemic Morphine. These changes are maximum 3.5-7.5 hours after injection and can last up to 20 hours with doses of 0.2mg ITM.

The rate of serious respiratory depression (RD) requiring treatment increases with increasing dose of ITM, this is no different to systemic Morphine. Associated general anaesthesia, old age and high ASA score increase the risk of serious RD.

The incidence of serious RD (there are many definitions) is not known with 0.1-0.2mg Morphine but is probably no more common than with PCA Morphine (1mg/5min, no background).

Adverse Effects (cont.)
“Delayed” Respiratory Depression
The literature around this area is confusing.

ITM produces more sustained respiratory changes than systemic Morphine and the most probable time for the clinical manifestation of RD said to be within 7 hours of injection.

Respiratory Depression with ITM & Parenteral Opioids
Reports of serious RD with ITM following parenteral opioids can be found in the 1980s and seem to be associated with large – eg >3mg – doses of ITM. Clinically and from a literature search, parenteral opioids and low dose ITM do not produce undue risk of serious RD.
Adverse Effects (cont.)

Sedation
ITM produces less sedation and more ability to mobilise than equi-algesic systemic Morphine. At a dose of 0.1mg no significant sedation is observed.

Nausea & Vomiting
The rates of these will obviously depend on the type of surgery and patient factors.

Pruritis
Pruritis is reported to be more common in parturients, rates of approximately 60-80% with 0.1mg are described.

Adverse Effects (cont.)

Urinary Retention
This will be influenced by patient mix, but is still common in young patients, and operation type, an incidence of 60% have been reported. In many cases, catheterisation occurs as part of routine care so the true incidence cannot be measured. If ITM is used urinary retention should be expected.

PDPH
The incidence of PDPH is age related and with 26G pencil point needles is currently 1/250 in the obstetric population in Women’s Hospital; PDPH is much less common in the elderly.

Adverse Effects (cont.)

Herpes Simplex Labialis Reactivation
This complication has been described with the use of ITM. Some suggest previous history of HS labialis is a contraindication for ITM use.

Additional Standing Orders if Given Intrathecal Morphine (ITM)

1. All ITM patients should be limited to 5mg/hr of Morphine or 100mcg of Fentanyl.
2. All ITM patients should have additional O2 (minimum 2L/min/Nasal Cann) for first 18 hours.
3. If patient unrousable (sedation score = 3) and/or respirations less than 8 per minute, give Naloxone 0.1mg IV stat and repeat every 3 minutes until patient is rousable and breathing. Document Naloxone dose(s) on front page prescription/recording section. Administer O2, call APMS, Duty Anaesthetist stat.

In Hours:
Nurse, pager 8114, Duty Anaesthetist pager 8120
After Hours: On- call Anaesthetic Registrar pager 8212 or ICU Registrar pager 8155.

4. Hourly respirations, sedation score and SaO2 for 18 hours after ITM.
5. After 18 hours, if sedation score is 0,1 or 4 AND respirations are greater than 12/min, then 4-hourly observations should be recorded.

Summary

ITM, 0.1-0.2mg, produces useful and safe analgesia that has advantages over epidural analgesia or traditional PCA in some clinical situations. It can also be used in conjunction with PCA to produce better quality analgesia for the first 12-24 postoperative hours.