14.2.4 INTRATHECAL ADMINISTRATION OF MEDICATIONS

BACKGROUND

Intrathecal analgesia is used for pain relief when other methods are either insufficient, or produce excessive adverse effects. The technique involves the insertion of a catheter that is used to give pain relieving drugs into the intrathecal space. The intrathecal space contains the cerebrospinal fluid and the spinal cord. When pain relieving drugs are given in this way they produce pain relief by spreading into the spinal cord or the nearby nerves to block the transmission of pain impulses.

KEY POINTS

1. If good analgesia can be achieved with minimal side effects and risks using alternative route, there is little evidence for improved outcomes with the intrathecal route.
2. The long term intrathecal administration of drugs is an established method of pain management in a small carefully selected subgroup of patients.
3. Medications may be administered directly into the intrathecal space, as single or repeated injections or by continuous infusion.
4. This form of therapy is generally reserved for patients in whom pain or spasticity is not adequately controlled by less invasive methods and who meet certain criteria.
5. Intrathecal drug administration can result in significant undesirable side effects, and has the possibility of morbidity and mortality.
6. Effective management of intrathecal therapy requires appropriate patient selection. Education of the patients increases their understanding of the potential benefits, risks and their responsibilities.
7. Prior to the consideration of a trial of intrathecal drug therapy, the response to appropriate trials of oral and parenteral therapies should be assessed.
8. Treatment requires regular assessment and documentation of efficacy, tailoring therapy to the individual.
10. Opioids and local anaesthetics are the most frequently utilised agents for long term intrathecal therapy.
11. Failure to respond to an intrathecal trial or need for a rapidly increasing dose may indicate pain that is poorly responsive to opioids.
12. Inadequate analgesia may result in dose escalation of opioid over time. It is important to consider the many factors which may result in inadequate analgesia including:

- Development of tolerance
- Progression of the underlying disease
- Emergence of a new source of pain
- Development of opioid induced hyperalgesia
- Distress
- Social reinforcers
- Pain which is not opioid responsive.

13. Both physician and the patient should be aware of current data relating to safety and potential neurotoxicity of the proposed intrathecal medications. Toxicological studies to date suggest no long term adverse effects of baclofen, morphine, bupivacaine or clonidine.

14. The procedure is performed with strict septic technique whatever the setting.

15.

16. Consult the managing pain or Palliative Care Specialist for advice about changing the:

- Drug combination.
- Rate of delivery
- Bolus doses
- Lockout time

17. The intrathecal infusion must be prescribed with clear instructions and boundary rates

18. The infusion rate must remain within the prescribed limit.

19. The intrathecal infusion and rate must only be altered by a registered nurse / midwife that has undergone suitable training in the management of epidural / intrathecal infusions.

20. The intrathecal line and syringe will be labelled as per clinical guideline A 4.14 Labelling of Injectable Medicines and Fluids

INDICATIONS

- Severe uncontrolled pain despite appropriate prior attempts to control the pain using conventional palliative care analgesics.
- Unacceptable side effects from systemic opioids.
- Urgent pain control near the end of life when time is not available to titrate analgesics in a standard fashion.

CONTRAINDICATIONS

ABSOLUTE

- Patient refusal.

RELATIVE

- Confused patient unable to give informed consent.
Infection near the site of line placement or untreated septicaemia
Anticoagulated patients with bleeding dyscrasia
Raised intracranial pressure
Infection risk.

PRACTICAL DIFFICULTIES
- Previous spinal surgery / deformity
- Severe obesity

ADJUSTING THE EXISTING DRUG REGIME PRIOR TO THE PROCEDURE
- Long acting opioids should be converted to four hourly preparations 12-24 hours prior to the procedure.
- Fentanyl patches should be removed 24-48 hours prior to the procedure, changing to an immediate release opioid.
- On the morning of insertion, reduce the opioid by 30-50%, but ensure an immediate release opioid is available for breakthrough pain
- Prophylactic antibiotics should be prescribed to be given on the day of the procedure.

PROCEDURE FOR INSERTION AND COMMENCEMENT OF AN INFUSION.
1. Resuscitation equipment must be available during insertion.
2. Ensure intravenous access is present prior to the procedure.
3. Perform baseline observations prior to insertion.
4. Prophylactic antibiotics are given prior to the procedure.
5. Following insertion and administration of the initial dose the following observations shall be recorded – pulse, respiratory rate, oxygen saturation rate, BP, sensory level – cold discrimination with ice, motor power in the upper and lower limbs and pain
   - Every 15 minutes for the first hour
   - Every 30 minutes hourly for the next 2 hours
   - Respiratory rate, sedation and pain scores must be recorded hourly until at least 24 hours post insertion or longer if the patient's observations are unstable.
6. Observations after any rate or content change
   - Every 30 minutes for an hour.
   - 4 hourly for 24 hours.
7. Daily
   i. Temperature, blood pressure, respiratory rate, oxygen saturation rate, level of the block for the first 7 days (sensory level to cold and upper and lower limb power)
   ii. Daily check for urine retention
   iii. Pain score when necessary: daily until stable, then when changes occur
   iv. Observe site for signs of infection / leakage
   v. The puncture sites from the tunnelling should be cleaned and redressed until they are healed for the first week.
   vi. Observe for signs suggestive of CSF infection
   vii. Ensure the dressing is intact, including the security of the line between the exit and extension.
   viii. The infusion pump should be checked four hourly.
8. After 7 days, the dressing over the exit site should be changed weekly using an aseptic technique.

9. The distal filter should be changed at 60 days.

10. If there is a leak of CSF or infusion fluid at either side of the compression hub or at the proximal filter, then serious consideration should be given to removing the line. The anaesthetist and palliative care team should be involved in the decision.

POSSIBLE PROBLEMS

When assessing all problems, the most appropriate course of action for the individual always needs to be considered in the context of:

- Their disease status.
- Potential prognosis.
- Risk / benefits of continuing spinal line analgesia.

LEAKING CATHETER SITE / MOVEMENT OF THE LINE

- Can occur post procedure at the primary insertion site for a few days. Apply compression bandaging to the area. Leakage may also signify a migration of the catheter, therefore review placement including any recent change in pain control. Concerns about migration should be reported to the anaesthetist urgently.

- Leakage at the exit site – check the integrity of the compression hub / spinal catheter junction. It may need to be tightened. If it has become disconnected, removal of the spinal line must be considered. Although it may be appropriate to leave in situ of the clinical situation dictates this.

CRACKED FILTERS

- Replace if damaged using a full aseptic technique. If both filters are disconnected the situation needs urgent discussion with medical staff and the anaesthetist. Serious consideration should be given to whether the line should be removed but a risk benefit analysis needs to be considered depending on the clinical situation. If the line is removed the tip should be sent off to microbiology for assessment of infection.

INFECTION

- Infection can occur locally around the exit site or within the CSF, causing meningitis. Signs and symptoms of infection are as follows:
  - Raised temperature
  - Redness, swelling, heat, discharge at the exit site and possible palpable subcutaneous spinal line track.
  - Photophobia
  - Neck stiffness
  - Headache
  - Drowsiness
  - Increased pain or possible increased analgesia due to increased absorption with meningeal inflammation.
  - General non specific deterioration.

- If infection is suspected arrange urgent medical review.

BACK PAIN

- Any complaint of persistent or increasing back pain particularly if it is referred to the legs must be taken seriously. Possible causes include spinal cord compression, haematoma or abscess formation.
• Arrange for urgent medical review. Discontinue the infusion until the review is completed.

THE LINE FALLS OUT
• Ensure adequate systemic analgesia is available while the situation is being reviewed.

HEADACHE
• Severe frontal headaches may indicate a leak in the cerebrospinal fluid, but usually occurs in the early post insertion period.
• Request medical review
• It may be relieved by simple analgesia, bed rest and lying flat.
• If it persists, other potential causes such as meningitis must be excluded.

INADEQUATE ANALGESIA
• Review that the infusion is working correctly.
• Ensure that adequate breakthrough analgesia is provided.
• Request medical review

URINARY RETENTION
• This can be due to increased tone of the sphincter at the exit of the bladder caused by either opiate and / or local anaesthetic.
• Request medical review.
• A short or long term urinary catheter may be required.
• A sudden change in bladder control not associated with spinal drug increases may indicate a spinal cord compression

REFERENCES (STANDARDS)
1. Royal Cornwall Hospitals. Nursing Guidelines for the Care of a Patients with an Intrathecal Infusion. 2012

National Standards – 1 Clinical Care
Legislation - Nil

Related Policies – Section 14 Palliative Care
Other related documents – A 4.14 Labelling Of Injectable Medicines and Fluids
P Administration of Schedule 8 Controlled Medications

RESPONSIBILITY
Policy Sponsor Palliative Care Consultants
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