EPIDURAL INFUSIONS OF ANALGESICS COMBINED WITH LOCAL ANAESTHETICS

Refer also to related standards:

- Epidural Analgesia/Anaesthesia: Catheter Removal
- Epidural Analgesia/Anaesthesia: General Considerations and Patient Education
- Epidural Analgesia: Intermittent and/or Continuous

1.0 STANDARD

1.1 Only Registered Nurses (RN) who are certified in the care of patients receiving epidural analgesia/anaesthesia may care for patients with analgesia/anaesthesia infusions.

1.2 All patients who have received spinal analgesia and have or are receiving epidural analgesia are cared for in the following areas:

- Operating Room (OR)
- Intensive Care Unit (ICU)
- Step Down Unit (SDU)
- Perianaesthesia Care Unit (PACU)
- Labour and Delivery Room (LDR)
- Post Partum Unit (3M)
- Surgical Units (4N/6N)

1.3 Patients will be discharged from the above units:

- 24 hours after the discontinuation of spinal/epidural Morphine;
- 8 hours after the discontinuation of Fentanyl with or without Bupivicaine;
- 2 hours after the administration of Naloxone (Narcan).

Exception: Patients may be discharged from the PACU to the ICU, SDU, surgical units, or LDR when they have met the PACU discharge criteria.

1.4 The RN will monitor the patient's condition and the level of analgesia/anaesthesia and will keep the Anaesthetist advised.

Exception: On the surgical units (4N/6N), Licensed Practical Nurses (LPN) may monitor the patient's pulse, blood pressure, and temperature starting 8 hours after the beginning of a continuous infusion of analgesic combined with a local anaesthetic.

1.5 The Anaesthetist must administer any drugs via the epidural catheter. The Anaesthetist provides ongoing medical management related to the epidural analgesia/anaesthesia.

Exception: RN's may attach premixed infusion bags of narcotics to an established continuous epidural line.

1.6 The patient receiving epidural analgesia/anaesthesia will *not* receive any other analgesia or sedation unless specifically ordered by the Anaesthetist.

1.7 Only single infusion pumps labeled "For Epidural Use Only" are used for epidural analgesia/anaesthesia infusions. The pumps will remain locked throughout the infusion and after rate and bag changes.

Note: Do not use the pump for hanging peripheral intravenous bags.

1.8 The Anaesthetist's orders for analgesia and sedation will remain in effect for 8 hours after the last bolus dose or the termination of the continuous infusion. When Morphine is used instead of Fentanyl, this period is 24 hours.

1.9 The RN may alter the flow rate of an established continuous epidural infusion as directed by the Anaesthetist's orders.

1.10 A second RN must witness a change in the pump setting, the hanging of a new infusion bag, and the resetting of the pump volume.

1.11 The Hospital Pharmacy or the Anaesthetist must prepare any infusions required for the provision of epidural analgesia/anaesthesia. Premixed infusion bags are stored in the refrigerator.

1.12 Patent intravenous (IV) access must be maintained for 8 hours after the last bolus dose or the termination of the continuous epidural infusion when Fentanyl is used, and 24 hours when Morphine is used.

1.13 Patients are to receive oxygen via nasal prongs at 4 litres/minute for 24 hours post-operative and prn.

1.14 Naloxone (Narcan) and 1 or 3 mL syringes will be readily available and accessible on all medication carts in the designated area.

1.15 Patient education for epidural analgesia/anaesthesia is a joint responsibility of the Anaesthetists and RN's caring for the patient.

2.0 PROTOCOL

2.1 Assess and perform patient education according to the standard Epidural Analgesia/Anaesthesia: General Considerations and Patient Education.

2.2 Patient Assessment While Infusion in Progress

- Assess respiration (RR) and sedation scale (SS):
  - Every hour for the first 24 hours
  - Then every 4 hours and prn

    Repeat the above sequence after an epidural injection of analgesic.
- Assess blood pressure (BP), and pulse (P):
  - Every 15 minutes for 1 hour,
  - Then every 30 minutes for 1 hour,
  - Then every hour for 24 hours
  - Then every 4 hours.

    Repeat the above sequence after an epidural injection of analgesic.
- Assess temperature according to unit standard.
- Assess the epidural site and intactness and security of the epidural catheter and tape every 12 hours.
- Assess the motor and sensory level of the patient's legs every 2 hours for 8 hours, then every 4 hours.
  - **Sensory Level**

    Start at the legs and move upward, noting at which anatomic landmark (dermatome level) an alcohol swab or ice chip feels cold

    Dermatome Levels:

    T4 = nipple line
    T6 = xiphisternum
    T8 = subcostal margin
    T10 = umbilicus
    T12 = suprapubic level
    L2 = anterior thigh

    Note: Contact the Anaesthetist immediately if the sensory

level is at or above the nipple line, or sensory block increases > 3 dermatomes since last check.

– **Motor Level**

Ask the patient to flex his/her hips, knees, ankles, and toes. Ask the patient to bed both legs, either together or separately.

Degree of Motor Block:

0 = normal; has full flexion of knees and feet
1 = **partial**; just able to move knees
2 = **almost complete**; able to move feet only
3 = **complete**; unable to move feet or knees

Note: Contact the Anaesthetist immediately if the motor block is 2 or 3.

- Assess the patient's pain level using the pain rating scale of 0 to 10 every hour until the pain is well controlled, and then every 4 hours.
- Assess for progressive back pain every four hours.
  - Report the presence of progressive back pain to the Anaesthetist on call immediately.
- Assess for bladder distension every 4 hours in the first 24 hours, then every 8 hours.
- Assess the epidural site, dressing, and the security of the epidural catheter every 12 hours.
- Assess for adverse effects of nausea, vomiting, and pruritus prn.
- Assess for signs of systemic toxicity – lightheadedness, ringing in the ears, visual disturbances, metallic taste and/or facial tingling, restlessness, excitability, muscle jerking, and seizures prn.

2.3 Nursing Interventions for Adverse Effects

- Follow the pre-printed orders: Continuous Epidural Local Anaesthetic/Narcotic Infusion Orders.
- Call the Anaesthetist with any concerns.
- Follow the table below.

Problem	Interventions
Pain outside comfort level	• titrate infusion to maintain analgesia in comfort zone according to Pre-Printed Orders • administer prn analgesic according to Pre-Printed Orders • reassess and re-administer prn analgesic every hour until stable • if unable to control pain, call the Anaesthetist
RR ≤ 10/min. or sedation level = 3	• stop epidural infusion • administer naloxone in small increments according to pre-printed orders • apply oxygen at 4 L/min. • reassess every 5 min. x 2, then every 15 minutes x 3 • notify Anaesthetist after naloxone given
BP drop of > 20% or as per pre-printed orders (sympathetic block)	• stop epidural infusion • apply oxygen at 4 L/min. • put head of bed flat, *not* Trendelenburg • position to maintain airway • notify Anaesthetist: patient may need rapid infusion of N/S or R/L • do passive range of motion to lower limbs • change patient position slowly
High or intense motor block – numbness at or above the nipple level (T4) and/or motor block of 2 or 3	• stop epidural infusion • raise head of bed 45 degrees • maintain airway • notify Anaesthetist
Systemic toxicity – may be indicated by hypotension, 20% drop or more in pulse, numbness or tingling of the face, metallic taste, visual disturbances, lightheadedness, restlessness, excitability, muscle jerking, or seizures	• stop epidural infusion • apply oxygen at 4 L/min. • notify Anaesthetist
Headache (postural)	• have patient lie flat • notify Anaesthetist
Progressive back pain	• notify Anaesthetist
Nausea and vomiting	• give anti-nausea medications according to Pre-Printed Orders • if uncontrolled, call the Anaesthetist
Pruritus	• give anti-pruritic medications according to Pre-Printed Orders • give cool cloths for comfort prn • if uncontrolled, call the Anaesthetist
Urinary retention	• intermittent catheterization or retention catheter as per Surgeon or Anaesthetist orders

2.4 Ambulation

- Prior to first ambulation, assess the patient's blood pressure, pulse, and motor function.
- Assist the patient with the first attempt to ambulate.
  - Raise the head of the bed for 5 minutes.
  - If the patient is able to continue, have him/her sit on the side of the bed and stand up slowly.
  - If the patient experiences dizziness, return him/her to bed.

2.5 PRN IV Narcotic

- Assess RR and SS every 15 minutes for 30 minutes after administration of prn IV narcotics.

2.6 Changing the Infusion Rate

- Check the Anaesthetist's order.
- Unlock the infusion pump.
- Have a second RN witness the change in pump setting and ensure the pump lock mechanism is activated.
- After an epidural infusion rate has been increased, continue to monitor the patient as described in 2.2, above. Increase the frequency of assessments prn.
- Document the rate change on the Epidural Flowsheet, Pre-Printed Doctor's Orders, Nurses' Notes, and on the Medication Administration Record (MAR).

2.7 Replacing the Infusion Bag

- Store infusion bags in the fridge.
- Change infusion bags at least every 24 hours or when empty.
- When hanging a new bag, have a second RN witness the hanging of the bag, the resetting of the volume on the pump, and the reactivation of the pump lock mechanism.
- Record the fluid volume infused on the intake/output record.

2.8 Infusion Tubing Change

- Change the infusion tubing every 72 hours. Coincide this with a bag change.
- Use port-free tubing. **Do not use alcohol in any part of this procedure.**
- Prepare and prime the tubing with the narcotic solution using a no-touch technique. **Do not clamp off the epidural catheter.**
- Remove the old infusion tubing and attach a new set to the epidural catheter. Ensure that the luer lock connection is secure.
- Replace tubing in the infusion pump and open the clamp on the tubing. Reactivate the pump and ensure the pump lock mechanism is activated.
- Attach a label to the tubing, indicating when the tubing is due to be changed next.
- Document the tubing change in the Nurses' Notes.

2.9 Documentation

- Document vital signs, pain rating, sedation scale, motor and sensory function, epidural catheter and dressing status, and presence of adverse effects on the Epidural Flowsheet.
- Document oxygen therapy, assessment of bladder function and treatment for bladder distension in the Nurses' Notes.
- Document the rate of the infusion in the Epidural Flowsheet at the beginning and end of each shift. When there is a change in rate, record the new rate on the MAR and the Epidural Flowsheet.
- Document medication administered to treat side effects on the Medication Administration Record (MAR) and on the Epidural Flowsheet.
- Document non-medication-related interventions done to address adverse effects in the Nurses' Notes.

3.0 REFERENCES

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4.0 APPROVALS

Approved by:	Pharmacy and Therpeutics Committee	June 23, 1998
	Department of Anaesthesia	July 14, 1998
	Surgical Program Team	September 11, 1998
	Nursing Professional Practice Committee	October 19, 1998
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