

EPIDURAL

Description

- Epidural is used to reduce or “block” pain and other sensation over a region of the body with few systemic side effects. It provides continuous analgesia, attenuates the stress response, and provides a sympathetic blockade of the blocked region. Epidural analgesia is also established as a safe and effective method for postoperative pain in children.

Indications

- Post-operative or post-trauma pain treatment
- Patient with intractable cancer or non-cancer pain
- Sympathetic blockade requirement (eg. microvascular surgery in which vasodilation is required for graft survival).

Contraindications

- Septicemia, local infection, bacteremia
- Bleeding diathesis: thrombocytopenia, coagulopathy or expected change in coagulation profile
- Major spine malformation
- Anomaly of the epidural space
- Progressive degenerative disease of the nervous system
- Allergy to one of the medications
- Refusal of parental authority
- Precaution with anticancer chemotherapy such as CISPLASTINE. Those patients may have been preexisting neuropathy.

Key Points

- Patient with an epidural should **ALWAYS** have an intravenous access available
- For troubleshooting or complications, call APS
- Solution bag change occurs at a maximum of 96 hours of connection when prepared by pharmacy and 24h when prepared outside pharmacy settings (eg. prepared by anesthesia) and the change is performed by an APS team member
- Urinary retention, vomiting, and pruritus may occur, if that is the case, call the treating team to perform usual management

Monitoring and Documentation

- Every shift and PRN
 - Confirm epidural rate, expiration date and solution against prescription
 - Document on special sheet in nursing binder (MCH – Peripheral analgesia flow sheet)
 - Catheter site and dressing
 - *Observe for signs of redness, inflammation or induration*
 - *Observe for signs of leakage*
 - *Monitor the catheter placement by observing the deepness of the catheter (with the markings on the catheter)*
 - Opioid induced side effects
 - *Vomiting*
 - *Pruritus*
 - Local anesthetic toxicity signs (“LAST”)
 - *Muscle twitching, sedation, agitation/restlessness, respiratory depression, seizures, coma, cardiac arrhythmia, cardiorespiratory arrest. ***CALL APS if any of these symptoms are present****

○ Every 4h and PRN

- Heart rate (HR), blood pressure (BP), and pain score
- Motor block
 - *Observe spontaneous movements of the lower body*
 - *Use the Bromage Motor Scale*

ÉCHELLE DE BROMAGE SCALE (évaluation du bloc moteur / motor block evaluation)		
0	Aucun; flexion complète des genoux et pieds	None; complete flexion of knees and feet
1	Partiel; peut bouger les genoux seulement	Partial; just able to move knees
2	Presque complet; peut bouger les pieds seulement	Almost complete; able to move feet only
3	Complet; ne peut pas bouger les genoux ou les pieds	Complete; unable to move feet or knees

* Pour les péridurales thoraciques, vérifier la flexion et l'extension des doigts / For thoracic epidurals, check flexion and extension of fingers

○ Every 2h and PRN

- Skin integrity and mobilization
 - *Neonates can be put in parents' arms*

○ Every hour and PRN

- Sedation score
 - *Use the modified POSS scale*
- SpO2 and Respiratory rate (RR)
- Epidural solution, dose given, volume infused (in mL)

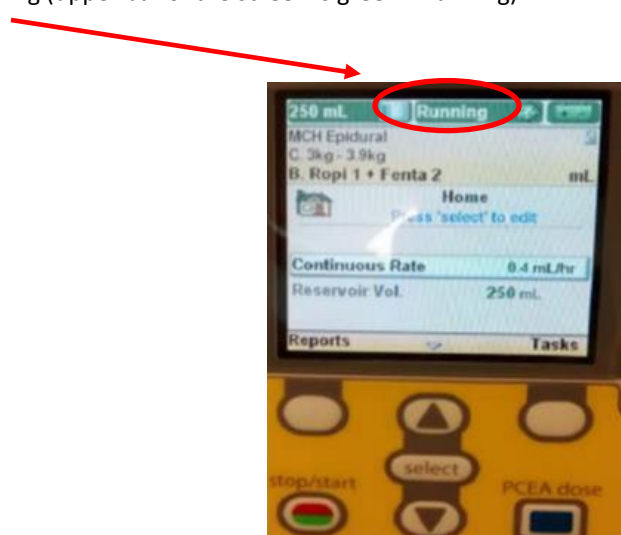
Equipment and Solutions

○ Standard solutions used at MCH

- Ropivacaine plain 0.05%, 0.1%, 0.2% - Commonly used in the NICU
- Can be mixed with opioids such as Fentanyl or Morphine (rarely used in the NICU). If so, please monitor closely for respiratory depression symptoms

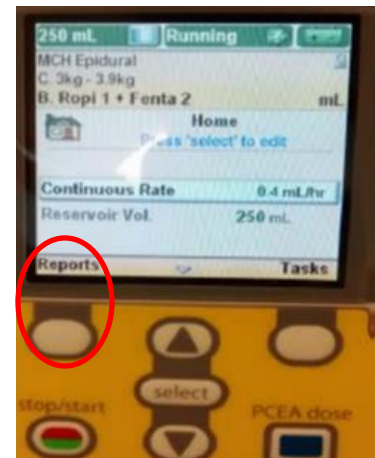
○ Set-up verification

- Yellow stripe administration tubing
- Catheter well connected and secure
- Yellow screen on CADD Solis/yellow lockbox
- Reservoir volume
- Battery charge
- Pump running (upper bar of the screen is green if running)



How to read the pump?

- Reservoir volume
 - On the main screen *Reservoir Vol.* _____ mL
- Rate
 - In mL/hr
 - On the main screen read the rate next to *Continuous Rate*
- Dose given and Volume infused
 - Press the left white button = Reports
 - Total given shows the amount of drug (mL) that has been given in continuous rate including clinician boluses



When to call APS?

- Pain is not well controlled
- Patient sedation score of 2 = the patient is frequently drowsy even if easy to wake up. Patient is falling asleep quickly after stimulation
- Patient respiratory rate falls below normal limits (while sleeping and/or awake)
- Patient has an increase requirement in O₂ (while sleeping and/or awake)
- Patient's respiratory status changes (eg. pulmonary complications)
- Apnea is noticed
- Snoring is noticed
- "LAST" symptoms observed
- Epidural catheter disconnection or partial disconnection
- Leakage of clear liquid is often normal especially with babies
 - Remember to reinforce dressing with semi-permeable transparent dressing
 - Call APS if pain is not well controlled
- Patient has new onset of fever and/or septicemia is suspected
- Acute pain at the epidural site
- Bradycardia
- Hypotension
- Redness and/or induration at the epidural site
- Epidural solution almost empty
- End of epidural treatment/stop test