

KAPC Practice Guideline

Title: Use of Epidural Infusions for Postoperative Analgesia

Date Approved: 11/18/13

Policy Overview: The use of epidural infusions for postoperative analgesia has been shown to provide clear benefits in some situations. However, epidural infusions may also involve risks and rare complications. The following Guideline will address practical issues regarding the use of epidurals for postoperative analgesia. Some of these recommendations are based on published studies or guidelines, while others represent a consensus of KAPC physicians based on practical considerations. As always, specific circumstances may require deviation from these guidelines.

Policy Steps

1. *Case selection*¹

1. *Advantages outweigh disadvantages: thoracotomy, open colon resection, open major abdominal surgery, abdominal or pelvic surgery done under epidural anesthesia*
2. *Disadvantages outweigh advantages: laparoscopic abdominal surgery including colon resection*
3. *Individual consideration: thoracoscopy*²
2. *Vertebral level for epidural placement: unless vertebral level is appropriate for type of surgery, there is no advantage to epidural analgesia over parenteral analgesia; also, for colon surgery, thoracic placement reduces leg weakness and improves analgesia compared to lumbar placement*³
 1. *Thoracotomy: at level of incision*
 2. *Upper abdominal surgery (gastrectomy, esophagectomy, hepatic resection, pancreatectomy): mid-thoracic*
 3. *Lower abdominal surgery (colectomy, bowel resection): T8-9*
 4. *Abdominopelvic surgery (prostatectomy, hysterectomy): lumbar*
3. *Epidural solution: weaker LA solutions will reduce hypotension; weaker narcotic solutions will reduce pruritis, respiratory depression, time to return of bowel function; there are no proven advantages to hydrophilic (hydromorphone) vs. lipophilic (fentanyl) narcotics; there are no proven advantages to epidural narcotics vs. systemic narcotics*⁴
 1. *0.1% bupivacaine with 2 (or 3) mcg / cc fentanyl for initiation of infusion*
 2. *0.05% bupivacaine with 2 (or 3) mcg / cc fentanyl to reduce leg weakness or hypotension*
 3. *KAPC will not continue order epidural solutions containing only narcotics*
 4. *Except in unusual circumstances, loading dose should be dilute local anesthetic or infusion solution, rather than LA concentrations used for surgical anesthetic*

¹ Procedure Specific Postoperative Pain Management. www.postoppain.org

² Manion, et. al. Thoracic Epidural Analgesia and Acute Pain Management. *Anesthesiology* 2011; 115: 181-8.

³ Konigsrainer, et. al. *J Assoc Anaesth Great Britain and Ireland*, 2009; 64: 27-31.

⁴ Manion, et. al. Thoracic Epidural Analgesia and Acute Pain Management. *Anesthesiology* 2011; 115: 181-8.

5. *Alternative local anesthetics, narcotics, or concentrations may be ordered for specific indications.*
4. *Timing of epidural loading dose and initiation of epidural infusion*
 1. *Unless the epidural is part of the surgical anesthetic, loading dose should be either at the end of the surgery or withheld until PACU. There is no documented benefit, and there may be an hemodynamic risk, to administering a loading dose prior to the end of surgery.*
 2. *Infusion should not be initiated until patient has demonstrated at least less than a complete motor block of lower extremities.*
5. *Bolus vs. continuous infusions: evidence supports advantages of PCEA over continuous infusions for both labor and post-surgical analgesia, but studies do not address disadvantages of PCEA at night or for patients unlikely to use PCEA effectively; advantages included decreased motor block, improved analgesia, and decreased total dose requirements⁵⁶*
 1. *Except in unusual circumstances, PCEA should always be included as part of the epidural prescription*
6. *Duration of epidural infusions: concern for catheter-related infection increases with increasing duration of catheter placement; however, this relationship between duration and infection risk is not supported in the literature⁷*
 1. *No specific policy will exist regarding duration for indwelling epidural catheters*
 2. *Patients with epidural catheters will be evaluated each day for signs of systemic or local infection*
 3. *Epidural catheters should be removed when they are no longer necessary, or when specific concerns arise for local or systemic infection*
7. *Ambulation and epidural infusions*
 1. *Ambulation being an important component of surgical recovery, epidurals should be managed so as to minimize lower extremity motor block, consistent with adequate analgesia*
 2. *For patients with LA-containing epidural infusions, ambulation should always involve the assistance of two qualified people*
 3. *Ambulation should not be arbitrarily postponed until a specific postoperative day, as long as the patient demonstrates adequate LE strength and adequate assistance is available*

⁵ Standl, et. al. Patient-controlled epidural analgesia reduces analgesic requirements compared to continuous epidural infusion after major abdominal surgery. *Can J Anesth* 2003; 50: 258-64.

⁶ van der Vyver, et. al. Patient-controlled epidural analgesia versus continuous infusion for labour analgesia: a meta-analysis. *Br J Anaesth* 2002; 89: 459-65.

⁷ Practice Advisory for the Prevention, Diagnosis, and Management of Infection Complications Associated with Neuraxial Techniques. *Anesthesiology* 2010; 112: 530-45.