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A Procedure-Specific Approach to Improve Postoperative Pain Management

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With the increase in surgical workloads,¹ particularly increases in ambulatory surgical procedures, there is an increased need for effective and prolonged postoperative pain relief. In addition effective, dynamic pain relief is a prerequisite for improving outcome.^{2,3} It is increasingly evident that a preventative, mechanism-specific, multimodal approach is required to achieve optimal analgesia and avoid undesirable consequences of pain, including development of chronic pain after surgery.^{4,5} In addition it is realized that organized acute pain services and quality improvement initiatives are critical components of optimal pain management.⁶ Despite emphasis on provision of adequate analgesia and publication of guidelines,⁷ however, treatment of postoperative pain continues to be a major challenge.⁸

Although evidence-based guidelines improve clinical practice by providing health care workers with updated information, conventional pain management guidelines are limited as they are derived from a variety of surgical procedures and may not be applicable for all surgical procedures.⁹ Different surgical procedures have different pain characteristics (e.g., different pain location, intensity, type and duration) as well as different consequences of postoperative pain (e.g., consequences of pain after dental surgery are different from those after thoracic surgery). Furthermore, although certain analgesics (e.g., opioids and nonsteroidal anti-inflammatory drugs [NSAIDs]) could be utilized for most surgical procedures, other analgesic techniques (e.g., intra-articular or intraperitoneal techniques) are applicable to specific surgical procedures. In addition the risks and benefits of different analgesic techniques differ between surgical procedures (e.g., neuraxial analgesia may be risk-beneficial for upper-abdominal procedures but not for laparoscopic cholecystectomy).

More recently, numbers needed to treat (NNT) values (i.e., number of patients who achieve at least 50-percent pain relief as compared to placebo) have been used to assess the efficacy of analgesics.¹⁰ Although the NNT values provide a simplified approach to choice of an analgesic, they are derived from a variety of surgical procedures. Efficacy of an analgesic, however, may vary depending upon the type of surgical procedure. For example acetaminophen was less effective in relieving pain after orthopedic procedures than after dental procedures (i.e., NNT 1.87 vs. 3.77, respectively).¹¹ In addition efficacy of combinations of analgesics varies significantly between surgical procedures. It is observed that although the combination of acetaminophen and NSAIDs provided improved analgesic efficacy after mild to moderate surgical procedures, the benefits of the combination were smaller for more extensive surgical procedures.¹² Furthermore the clinical relevance of a 50-percent decrease in pain (i.e., definition of NNT) may be different with an initial pain score of 80 on a 100-point VAS scale as compared to a score of 30. Therefore it is clear that NNT may not necessarily be valid in all types of surgery as well as all intensities of pain.

Taken together it is increasingly apparent that recommendations for postoperative pain management should be specific for surgical procedures.⁹ To date, there are two initiatives that provide procedure-specific postoperative pain guidelines, one from the United States Veterans Health Administration, the Department of Defense and the University of Iowa <www.oqp.med.va.gov/cpg/cpg.htm>¹³ and the other from the "prospect Working Group" <www.postoppain.org>.¹⁴ The VA procedure-specific guidelines have been constructed based upon a systematic review of the medical literature in a variety of procedures and interpreted by a consensus group to provide the guidelines for overall recommendations for specific analgesic interventions. This group plans to update the guidelines every three years.

The prospect Working Group (Procedure-Specific Postoperative Pain Management Group) is a collaboration of international anesthesiologists and surgeons that provides evidence-based recommendations on a procedure-specific basis. These recommendations are derived from systematic reviews of the literature (using the Cochrane Collaboration of randomized controlled trials of analgesic, anesthetic and surgical interventions affecting postoperative pain) in the type of surgery.^{15,16} The procedure-specific systematic reviews are supplemented with evidence from other similar surgical procedures (i.e., transferable evidence) and clinical practice information (i.e., practical guidelines from the prospect Working Group). The recommendations available online <www.postoppain.org> are arranged into preoperative, intraoperative and postoperative sections, which are presented as folders in the "tree" structure. Within the folders, evidence and clinical

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The views expressed herein are those of

practice are presented as arguments for and against an analgesic, anesthetic or operative technique, together with links to abstracts. The availability of detailed information allows readers to make their own decisions based on their practice, and they do not necessarily have to follow the prospect Working Group's recommendations.

In summary, the choice of analgesic techniques needs to be individualized for each patient as well as for a specific procedure. The procedure-specific guidelines may be incorporated into clinical pathways for specific surgical procedures,² which along with an organized acute pain service should improve postoperative pain management and surgical outcome.^{2,3} Finally, it also is mandatory to integrate multimodal analgesic therapy into surgical care as a continuum from the preoperative period through the convalescence period, which will require close cooperation between anesthesiologists and surgeons.^{2,3}

References:

1. Liu JH, Etzioni DA, O'Connell JB, Maggard MA, Ko CY. The increasing workload of surgery. *Arch Surg*. 2004; 139:423-428.
2. Kehlet H, Dahl JB. Anaesthesia, surgery and challenges in postoperative recovery. *Lancet*. 2003; 362(9399):1921-1928.
3. Joshi GP. Multimodal analgesia techniques and postoperative rehabilitation. *Anesthesiol Clin N Am*. 2005; 23:185-202.
4. Joshi GP, Ogunnaike B. Consequences of inadequate postoperative pain relief and chronic persistent postoperative pain. *Anesthesiol Clin N Am*. 2005; 23:21-36
5. Kehlet H, Jensen TS, Woolf C. Persistent postsurgical pain: Risk factors and prevention. *Lancet*. 2006; 367:1618-1625.
6. Rawal N. Organization, function, and implementation of acute pain service. *Anesthesiol Clin N Am*. 2005; 23(1):211-225.
7. Ashburn MA, Caplan RA, Carr DB, et al. ASA Practice guidelines for acute pain management in the perioperative setting. *Anesthesiology*. 2004; 100:1573-1581.
8. Apfelbaum JL, Chen C, Shilpa S, Gan TJ. Postoperative pain experience: Results from a national survey suggest postoperative pain continues to be undermanaged. *Anesth Analg*. 2003; 97:534-540.
9. Rowlingson JC, Rawal N. Postoperative pain guidelines-targeted to the site of surgery. *Reg Anesth Pain Med*. 2003; 284:265-267.
10. Moore A, Edvards J, Barden J, McQuay H. Bandoliers Little Book of Pain. Oxford: Oxford University Press; 2003.
11. Gray A, Kehlet H, Bonnet F, Rawal N. Predicting postoperative analgesia outcomes: NNT league tables or procedure-specific evidence? *Br J Anaesth*. 2005; 94:710-714.
12. Hyllested M, Jones S, Pedersen JL, Kehlet H. Comparative effect of acetaminophen, NSAIDs or their combination in postoperative pain management: A qualitative review. *Br J Anaesth*. 2002; 88:199-214.
13. Rosenquist RW, Rosenberg J. Postoperative pain guidelines. *Reg Anesth Pain Med*. 2003; 28:279-288.
14. Kehlet H. Procedure specific postoperative pain management. *Anesthesiol Clin N Am*. 2005; 23:209-210.
15. Kehlet H, Gray AW, Bonnet F, et al. A procedure-specific systematic review and consensus recommendations for postoperative analgesia following laparoscopic cholecystectomy. *Surg Endosc*. 2005; 19:1396-1415.
16. Fischer HBJ, Simanski CJP. A procedure-specific review and consensus recommendations for analgesia after total hip replacement. *Anaesthesia*. 2005; 60:1189-1202.

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