
ANESTHESIOLOGY 2012

TRANSFORMING PATIENT SAFETY THROUGH EDUCATION AND ADVOCACY

Multimodal Analgesia for Perioperative Pain Management: Lecture to Hospital Protocols

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Multimodal analgesia is achieved by combining analgesics that act by different mechanisms, which result in additive or synergistic analgesia with reduced adverse effects secondary to the administration of individual analgesics¹. Opioids have long been the mainstay of postoperative analgesia, but the addition of adjuvant medications permits the use of lower doses of opioids while addressing pain by alternative mechanisms. Synergistically or additively these adjuvants enhance analgesia provided by opioids and reduce potential adverse effects. Additionally, acute opioid tolerance has been described and a correlation between high dose intraoperative opioid administration necessitates increasing postoperative opioid requirements but this may be avoided by the use of a multimodal perioperative anesthesia and analgesia model².

Ambulatory surgery encompasses the majority of surgical procedures currently performed in the United States. The number of procedures performed on an ambulatory basis has increased due to improvements in surgical technology, anesthetic techniques, and pharmacology- specifically analgesic agents. There is an increasing trend of performing more painful procedures on an outpatient basis³. Inadequate management of pain or side effects from medications (such as opioids) can lead to decreased patient satisfaction and delays in discharge. Multimodal analgesia captures the effectiveness of individual agents in optimal dosages that maximize efficacy and minimize side effects. The principals are based on constructing a multimodal analgesia strategy that, in addition to regional or local anesthesia, includes scheduled administration of non-opioid analgesics (e.g. acetaminophen, non steroidal anti-inflammatory [NSAID], or cyclooxygenase [COX]-2 inhibitors) and using oral opioids only for breakthrough pain. These regimens must be tailored to individual patients, keeping in mind the procedure being performed, side effects of individual medications, and patients' pre-existing medical conditions. Anesthesiologist are challenged to provide anesthesia and analgesia using the foundations of multimodal analgesia in order for patients to attain rapid recovery and discharge from the hospitals^{4,5}.

Though there are various classes of drugs for multimodal therapy-the ability to combine them in an effective manner to provide the optimal outcome for the surgical patients is critical. By implementing procedure-specific regimens composed of NSAIDs, acetaminophen, and short-acting opioids many patients will have improved analgesia following mild to moderately painful procedures. The use of steroids, anticonvulsants, and NMDA receptor antagonists should be considered based on the amount of postoperative pain that is anticipated and patients co-existing medical conditions. Infusions, such as $\alpha 2$ agonists, β -blockers, and local anesthetics, may also prove useful in more painful procedures. To facilitate quicker onset of analgesics, utilizing new routes of administration (e.g. intranasal ketorolac) should become increasingly popular. Their use should also be emphasized, as many have already demonstrated fewer side effects. As advancements in pharmacology and equipment improve, so should the anesthesiologist's ability to provide a safe, balanced, multi-modal analgesic regimen for a variety of surgical procedures.

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DISCLOSURE

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