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## Multimodal Analgesia, Current Concepts, and Acute Pain Considerations.

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#### Abstract

**PURPOSE OF REVIEW:** Management of acute pain following surgery using a multimodal approach is recommended by the American Society of Anesthesiologists whenever possible. In addition to opioids, drugs with differing mechanisms of actions target pain pathways resulting in additive and/or synergistic effects. Some of these agents include alpha 2 agonists, NMDA receptor antagonists, gabapentinoids, dexamethasone, NSAIDs, acetaminophen, and duloxetine.

**RECENT FINDINGS:** Alpha 2 agonists have been shown to have opioid-sparing effects, but can cause hypotension and bradycardia and must be taken into consideration when administered. Acetaminophen is commonly used in a multimodal approach, with recent evidence lacking for the use of IV over oral formulations in patients able to take medications by mouth. Studies involving gabapentinoids have been mixed with some showing benefit; however, future large randomized controlled trials are needed. Ketamine is known to have powerful analgesic effects and, when combined with magnesium and other agents, may have a synergistic effect. Dexamethasone reduces postoperative nausea and vomiting and has been demonstrated to be an effective adjunct in multimodal analgesia. The serotonin-norepinephrine reuptake inhibitor, duloxetine, is a novel agent, but studies are limited and further evidence is needed. Overall, a multimodal analgesic approach should be used when treating postoperative pain, as it can potentially reduce side effects and provide the benefit of treating pain through different cellular pathways.

**KEYWORDS:** Acetaminophen; Alpha 2 agonists; Clonidine; Dexamethasone; Dexmedetomidine; Duloxetine; Ketamine; Magnesium; Multimodal analgesia; NSAIDs; Opioids

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