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Perioperative ketamine for acute postoperative pain.

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Abstract

BACKGROUND: Postoperative pain management is often limited by adverse effects such as nausea and vomiting. Adjuvant treatment with an inexpensive opioid-sparing drug such as ketamine may be of value in giving better analgesia with fewer adverse effects.

OBJECTIVES: To evaluate the effectiveness and tolerability of ketamine administered perioperatively in the treatment of acute postoperative pain in adults.

SEARCH STRATEGY: Studies were identified from MEDLINE (1966-2004), EMBASE (1980-2004), the Cochrane Library (2004) and by handsearching reference lists from review articles and trials. The manufacturer of ketamine (Pfizer) provided search results from their in-house database, PARDLARS.

SELECTION CRITERIA: Randomised controlled trials (RCTs) of adult patients undergoing surgery, being treated with perioperative ketamine or placebo. Studies where ketamine was administered in addition to a basic analgesic (such as morphine or NSAID) in one study group, and compared with a group receiving the same basic analgesic (but without ketamine) in another group, were also included.

DATA COLLECTION AND ANALYSIS: Two independent reviewers identified fifty five RCTs for potential inclusion. Quality and validity assessment was performed by two independent reviewers. In the case of discrepancy, a third reviewer was consulted. Patient reported pain intensity and pain relief was assessed using visual analogue scales or verbal rating scales and adverse effects data were collated.

MAIN RESULTS: Thirty-seven trials were included (2240 participants). Eighteen trials were excluded. Twenty-seven of the 37 trials found that perioperative subanaesthetic doses of ketamine reduced rescue analgesic requirements or pain intensity, or both. Quantitative analysis showed that treatment with ketamine reduced 24 hour PCA morphine consumption and postoperative nausea or vomiting (PONV). Adverse effects were mild or absent.

AUTHORS' CONCLUSIONS: Ketamine in subanaesthetic dose (that is a dose which is below that required to produce anaesthesia) is effective in reducing morphine requirements in the first 24 hours after surgery. Ketamine also reduces postoperative nausea and vomiting. Adverse effects are mild or absent.

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