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## Ketamine decreases postoperative pain scores in patients taking opioids for chronic pain: results of a prospective, randomized, double-blind study.

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### Abstract

**BACKGROUND:** Patients prescribed opioids for chronic pain may suffer from inadequate postoperative pain control. Ketamine is an adjuvant demonstrating analgesic and opioid-sparing effects. We hypothesize that an intravenous ketamine infusion in addition to opioid-based patient-controlled analgesia (PCA) improves postoperative pain relief in this patient population.

**METHODS:** We evaluated 64 patients with chronic pain taking opioids undergoing nononcologic surgery. Patients were randomized to receive either postoperative hydromorphone PCA and continuous ketamine (0.2 mg/kg/hour), or hydromorphone PCA and saline. Patients provided numeric rating scale (NRS) pain scores for "worst," "average," and "least" pain following surgery. The primary outcome measure was change in patients' postoperative NRS scores compared with baseline NRS. Secondary and tertiary outcomes included postoperative day one 24-hour opioid use and the amount of opioid used 24 hours prior to hospital discharge.

**RESULTS:** Fifty-nine patients were included in the analysis. Baseline patient characteristics were similar with the exception of age. Patients using ketamine had decreased "average" pain scores (percent change between postoperative and preoperative NRS) after surgery (13.5% decrease in the ketamine group vs 15.5% increase in NRS in the placebo group,  $P = 0.0057$ ). There were no differences in "worst" or "least" pain scores or postoperative opioid use. Side effects between groups were similar.

**CONCLUSIONS:** Our study demonstrates that a postoperative ketamine infusion at 0.2 mg/kg/hour in addition to opioids results in a statistically significant reduction of "average" pain scores in patients undergoing surgery who take opioids for chronic pain. However, "least" and "worst" pain scores and the amount of opioid used postoperatively did not differ between groups. Thus, the use of a postoperative ketamine infusion at 0.2 mg/kg/hour provides limited benefit in improving pain management for this challenging population.

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