

Post-operative ketamine reduces persistent pain after thoracotomy – a multi-centre, double blinded, randomized controlled trial.

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Background: Persistent pain occurs in more than 50% of patients undergoing postero-lateral thoracotomy. A double blinded, randomized controlled trial was conducted to test the efficacy of ketamine, an NMDA antagonist to reduce persistent thoracotomy pain.

Methods: After institutional ethics approval (Monash University, Monash Medical Centre, Box Hill Hospital and Cabrini Hospital), 56 patients undergoing thoracotomy consented to participate in the study. All patients received a thoracic epidural with local anaesthetic and opioid for intra and post-operative analgesia. Patients were randomly allocated to one of two groups: the ketamine group received an intravenous ketamine infusion (0.15 mg/kg/hr)¹ for three days, whilst the placebo group received intravenous saline. The infusions were commenced in the recovery ward. Paracetamol and NSAIDs were administered as required. A single blinded investigator (MO) assessed all patients during the in-hospital period and at two and six months. Chronic pain assessments included the McGill Pain Questionnaire (short form) and mechanical (von Frey) punctate hyperalgesia.

Results: The two groups were similar in all demographic variables. Both groups had similar VAS scores and adjunctive analgesic requirements in the acute post-operative period. At two months, the ketamine group suffered fewer and less severe chronic pain symptoms ($p < 0.004$, χ^2 for trend) and experienced a smaller field of punctate hyperalgesia

around the thoracotomy incision: mean area 32cm² and 63cm² for the ketamine and placebo groups respectively ($p < 0.03$, χ^2).

Conclusion: Post-operative intravenous ketamine infusion therapy for three days reduces persistent post-thoracotomy pain. This regimen is easy to administer and may be applied in other settings susceptible to persistent pain such as major limb amputation and mastectomy.

Reference:

- 1 Chow TKF, Penberthy A, Goodchild CS. Ketamine as an adjunct to morphine in postthoracotomy analgesia: An unintended n-of-1 study. *Anesth Analg* 99;87:1327-4.