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Is low dose ketamine an alternative to opioids for acute pain management?- A meta-analysis of the literature

Introduction: Acute pain is a frequent problem encountered in the emergency setting. In an effort to provide safe alternatives for pain management, analgesics other than opioids have become a recent area of investigation. Ketamine has historically been administered for procedural sedation and rapid sequence intubation. Infrequently, ketamine has been used for analgesia. Recent evidence suggests that ketamine used in subdissociative doses (i.e., low dose ketamine, LDK) provides effective acute pain control. The indications of this are important in that LDK could potentially serve as an alternative to opioid pain control. This study aimed to evaluate the acute pain reduction from opioid alone versus combined opioid-ketamine.

Methods: A systematic review was conducted through PubMed to identify relevant studies from January 2008 through January 2018, with comparative data investigating the effectiveness of acute pain management with of Morphine alone (M-group) versus combined Morphine-Ketamine (MK-group). The primary outcome assessed was the reduction in the pain severity score (i.e. Numeric Verbal Score, NVS) reported by the patient before and after pain therapy administration. The secondary outcome assessed was the incidence of nausea between the two groups. The results are expressed as the standard difference in means with standard error. Statistical analysis was done using fixed-effects meta-analysis to compare the mean value of the separate groups (Comprehensive-Meta-Analysis Version 3.3.070 software; Biostat Inc, Englewood, NJ.).

Results: Four out of 27 studies were quantitatively assessed and included in this meta-analysis. Among the studies, 159-patients received opioid therapy alone; and 159-patients received a combined opioid-ketamine therapy for acute pain. There was a greater reduction in the pain scores (-0.909 ± 0.148 , $p=0.000$) in the MK-group when compared to the M-group. The incidence of nausea (-0.012 ± 0.269 , $p=0.966$) was similar in both treatment groups.

Conclusion: LDK combined with morphine is superior to morphine alone for the management of acute pain.

Biography

Madeline Jacobs is currently working in Philadelphia College of Osteopathic Medicine, USA

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