

PRESENTATION 4

Is Sub-Dissociative Ketamine a Safe and Effective Analgesic in Paediatrics for Acute Pain? A Systematic Review and Meta-Analysis

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Background

It is widely recognised that pain is undertreated in the paediatric population in an acute setting and the distress caused can lead to long-term detrimental effects. The current recommended treatment for moderate to severe pain in paediatric emergency settings is predominantly opioids, however, an alternative treatment may be beneficial. Sub-dissociative ketamine may improve pain management, by giving a more effective analgesia that can be used for all patients including those with an opioid tolerance. The objectives of this review are two-fold. Firstly, to assess the effectiveness of ketamine in pain reduction compared to current treatments and secondly to evaluate it for safety, by reviewing the adverse event profile.

Methods

Searches were conducted using MEDLINE, EMBASE and Cochrane Database of Systematic Reviews to identify randomised controlled trials (RCTs) that compared sub-dissociative ketamine to a control for analgesia in a paediatric population. This review was carried out independently by two researchers (last search conducted in April 2020).

Results

A total of 5 RCTs were used in the meta-analysis which found that ketamine is non-inferior relative to the control group treatments (fentanyl and morphine) for pain management. The standard mean difference (SMD) in pain reduction was -0.06 [95% confidence interval (CI) 0.29, 0.16] at 30-minutes post administration and -0.08 [95% CI -0.33, 0.17] at 60-minutes. However, ketamine was also associated with an increased risk of adverse events, albeit transient and mild, with a risk ratio of 2.94 [CI 95% 1.56, 5.55] compared to the control group.

Key messages

Sub-dissociative ketamine at a dose of 1mg/kg is an effective analgesia for use in children in an acute setting and is comparable to existing treatments. Ketamine does come with an increased risk of adverse events, although these are transient and mild, therefore unlikely to require medical intervention.

