KETAMINE IS A WELL-KNOWN ANESTHETIC WITH ITS USE TRAILING BACK TO THE 1960S

Ketamine is a well-known anesthetic with its use trailing back to the 1960s.

It has antagonistic effects at the N-methyl-d-aspartate receptor. There is emerging literature to suggest the use of subdissociative-dose ketamine (SDDK) for pain reduction.
This evidence-based review evaluates the evidence regarding the use of SDDK for acute pain control in the emergency department (ED).

METHODS: The MEDLINE and EMBASE databases were searched. Randomized controlled trials (RCTs) that described or evaluated the use of SDDK for acute pain in the ED were included. Literature was excluded if it was not published in English.
Duplicate articles, unpublished reports, abstracts, and review articles were also excluded.
Quality assessment and evaluation of literature were evaluated based on the GRADE criteria.
The primary outcome of interest in this review was the difference in pain score from baseline to cutoff time as specified in the studies.
Secondary outcome measures were the incidence of adverse events and reduction in the amount of adjuvant opioids consumed by patients who received SDDK.

RESULTS: Four RCTs met the inclusion criteria, which enrolled a total of 428 patients. Three adult trials and one pediatric trial were identified. The level of evidence for the individual trials ranged from low to moderate.
A significant reduction in pain scores was only found in two of the four trials.
One trial found a significant reduction in mean pain scores when ketamine was compared to morphine ($p < 0.05$).
Another trial reported a significant decrease in mean distress scores, favoring SDDK over fentanyl (1.0 vs. 2.7, $p < 0.05$).
One trial found a significant reduction in the amount of morphine consumed, favoring ketamine over placebo (0.14 mg/kg, 95% confidence interval [CI] = 0.13 to 0.16 mg/kg vs. 0.2 mg/kg, 95% CI = 0.18 to 0.22 mg/kg; $p < 0.001$). An emergence phenomenon was reported in one trial.

CONCLUSIONS: Four RCTs withmethodologic limitations failed to provide convincing evidence to either support or refute the use of SDDK for acute pain control in the ED.