

# The effectiveness of adding low dose of ketamine to the injected morphine in opioid-addicted patients admitted to emergency ward with acute fracture: A double-blind clinical trial

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## Abstract

Introduction: Patients with fractures are among the patients visiting the emergency ward the most. Pain control in these patients has many advantages both ethically and scientifically (physiologically and psychologically) both for the patient and the health system. Many studies have shown that the addition of low doses of ketamine to morphine, which is the standard painkiller of the emergency ward, can reduce the severity of acute pain in patients and the adverse events of morphine. The study

tried to examine the effectiveness and the safety of the addition of low doses of ketamine to injected morphine in opioid-addicted patients admitted to emergency ward with acute fractures.

Methodology: The study was a double-blind clinical trial where 128 patients, who were addicted to different types of opioids based on their self-report and admitted to the emergency ward with acute fractures of the long bones of each of the four limbs, were randomly assigned to two groups: receiving morphine / placebo and morphine/low dose of ketamine. The severity of pain and adverse events of the injectable medication were measured and recorded before receiving the pain medication and 15, 30, 60 and 90 minutes after and compared at the end of the study. The data was analyzed in SPSS16 using descriptive and inferential statistical tests at the significance level of  $P < 0.05$ .

Results: The severity of pain was similar in both groups before pain medication and 15, 30, 60 and 90 minutes after with no significant difference between the two groups. The incidence of adverse events in the morphine / ketamine group was significantly higher than that of the morphine / placebo group.

Conclusion: The addition of intravenous low ketamine dose to injectable morphine sulfate cannot increase the effectiveness of pain control in opioid addicted patients with acute fractures. Significant increase in adverse events in the group receiving low dose of ketamine besides morphine sulfate questioned the safety of this medication for patients.

## Keywords

Author Keywords: Ketamine; morphine; fractures; pain