

# The Preventive Role of Low-Dose Intravenous Ketamine on Postoperative Shivering in Children: A Placebo Randomized Controlled Trial

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## Abstract

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### Background

Postoperative shivering is a major problem in children undergoing general anesthesia.

### Objectives

The aim of the present study was to investigate the role of low-dose intravenous ketamine for prevention of shivering after induction of general anesthesia in children who had undergone tonsillectomy.

### Patients and Methods

This was a randomized, double-blinded, placebo-controlled trial including 80 children, of American society of anesthesiologists (ASA) physical status I or II, scheduled for tonsillectomy under general anesthesia who were randomly assigned to an intravenous ketamine (0.5 mg/kg, n = 40; group K) group or matched dose placebo (n = 40; group N) group. Surgical and demographic data, unexpected side effects, and the occurrence of shivering for each child were assessed by a blinded observer at the following time points: T0, in the recovery room; T10, at 10 minutes; T20, at 20 minutes; T30, and at 30 minutes.

### Results

With regards to the demographic and surgical data, no significant differences between the two study groups were observed ( $P \geq 0.05$ ). Shivering intensity in children who had received ketamine was significantly lower than children who had not received ketamine, at T0, T10, T20, and T30 after arrival ( $P < 0.05$ ). There were no significant differences in hallucination, nausea, vomiting, hemodynamic dysfunction, blurred vision, and seizure in the K group compared with the N group ( $P \geq 0.05$ ).

### Conclusions

Administration of intravenous ketamine at a dosage of 0.5 mg/kg immediately after anesthesia induction had a preventive effect on shivering intensity without hemodynamic alterations in children undergoing general anesthesia for tonsillectomy.

**Keywords:** Children, Ketamine, Shivering