

# Ketamine alone or ketamine as an adjunct to fentanyl to improve post-adenotonsillectomy analgesia in children

Imen Zouche<sup>1</sup>, Sirine Ayadi<sup>2</sup>, Youssef Hbaeib<sup>2</sup>, Nesrine Sallemi<sup>2</sup>, Rania Kharrat<sup>2</sup>, Faiza Grati<sup>1</sup>, Mnejja Melek<sup>2</sup>, Hichem Cheikhrouhou<sup>1</sup>, Ilhem Charfeddine<sup>2</sup>

1: Anaesthesiology department, Habib Bourguiba Hospital, 3029 Sfax, Tunisia

2: ENT department and research Laboratory LR23ES01, Habib Bourguiba University Hospital, University of Sfax, Sfax, Tunisia

## Abstract

## PURPOSE:

we aim to evaluate the effects of ketamine used instead of or as an adjuvant to fentanyl on early postoperative pain scores in children undergoing tonsillectomy.

## FINDINGS:

### Patient demographics, duration of anesthesia and surgery

	G1	G2	G3	p-value <sup>†</sup>
Number of patients	20	20	20	
Age (years)	4 (1)	5 (2)	5 (2)	0.06
Sex (Male:Female)	10:10	9:11	14:6	0.2
Weight (Kg)	22.5 (7)	23.5 (10)	20 (9)	0.07
Length (cm)	105 (20)	120 (15)	120 (24)	0.6
Duration of surgery (minutes)	17.5 ± 4.7	17.9 ± 6.2	16 ± 6	0.5
Anesthesia time (minutes)	24 ± 5.8	23.8 ± 6.3	21 ± 6.2	0.2

( ): interquartile range, †Test of differences between treatment groups; ANOVA or Kruskal-Wallis for continuous variables, chi-square for categorical variables. group G1 : fentanyl, group G2 :ketamine, group G3 : fentanyl +ketamine.

**INTRODUCTION/ PURPOSE:** we aim to evaluate the effects of ketamine used instead of or as an adjuvant to fentanyl on early postoperative pain scores in children undergoing tonsillectomy.

**MATERIALS and METHOD:** We conducted a double blind prospective randomized study including 60 children, aged between 2 and 7 years, scheduled to undergo adenotonsillectomy. Patients were randomly assigned to one of three groups: group G1 received 2 µg/ kg of fentanyl, group G2 received 0.5 mg/ kg of ketamine and group G3 received an association of fentanyl 1µg/ kg and 0.25 mg / kg of ketamine. We recorded postoperative analgesic requirements and side effects were recorded. Pain was assessed in the post anesthesia care unit by the face, legs, activity, cry, consolability (FLACC) pain scale. We evaluated requirement for additional analgesics, postoperative nausea and vomiting. Kruskal-Wallis test was used to compare the unidirectional ordered data between groups. Least-significant difference (LSD) was used to compare the data between two groups.

**FINDINGS:** Sixty children aged between 2 and 7 years scheduled to undergo adenotonsillectomy were included. Twenty patients were randomly assigned to one of three groups. Better control of pain was noted in group G3, with a significant difference at 30 min compared to both groups G1 (p=0,008) and G2 (p=0.036). The need for additional analgesia and side effects in the PACU were comparable for the three groups.

**DISCUSSION / CONCLUSION:** According to the results of the current study, ketamine associated with fentanyl provides a satisfactory early analgesia and can even replace fentanyl during tonsillectomy.

## MATERIALS and METHOD:

We conducted a double blind prospective randomized study including 60 children, aged between 2 and 7 years, scheduled to undergo adenotonsillectomy.

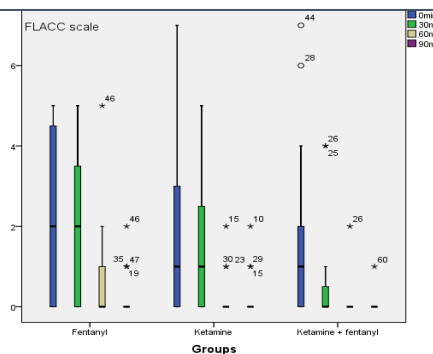
□ Patients were randomly assigned to one of three groups: group G1 received 2 µg/ kg of fentanyl, group G2 received 0.5 mg/ kg of ketamine and group G3 received an association of fentanyl 1µg/ kg and 0.25 mg / kg of ketamine.

□ We recorded postoperative analgesic requirements and side effects were recorded.

□ Pain was assessed in the post anesthesia care unit by the face, legs, activity, cry, consolability (FLACC) pain scale.

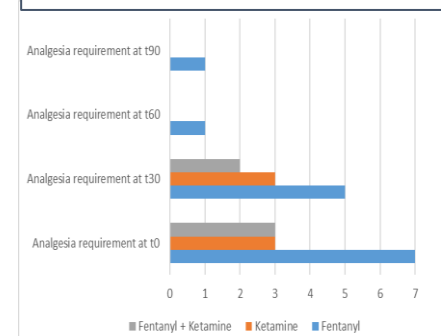
□ We evaluated requirement for additional analgesics, postoperative nausea and vomiting. Kruskal-Wallis test was used to compare the unidirectional ordered data between groups. Least-significant difference (LSD) was used to compare the data between two groups.

### Face, legs, activity, cry, consolability Scale at different times in the PACU



The median of pain scores on PACU arrival were 2 (IQ=5), 1(IQ=3) and 1 (IQ=2) for G1, G2 and G3 groups respectively with no significant difference.

### Request for additional analgesia



The request for additional analgesia was greater in the fentanyl group (G1) on arrival to the PACU and 30 minutes after arrival without statistical significance.

## DISCUSSION / CONCLUSION:

The results of this study showed that ketamine associated with fentanyl has the best pain controlling effect compared to fentanyl or ketamine alone essentially at 30 minutes in the PACU.

We conclude that fentanyl with addition of small doses of ketamine provide adequate pain relief in children undergoing adenotonsillectomy.

## Références

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