



# Painting Therapy *versus* Anxiolytic Premedication to Reduce Preoperative Anxiety Levels in Children Undergoing Tonsillectomy: A Randomized Controlled Trial

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*To the Editor:* Nearly 70% of children demonstrate high preoperative anxiety which complicates perioperative experience [1]. The most common intervention to reduce preoperative anxiety is premedication with midazolam, which may lead to complications [2]. Therefore we aimed to compare the efficacy of simple and safe painting therapy with premedication in children undergoing tonsillectomy.

This prospective randomized controlled trial has been registered in Iranian Registry of Clinical Trials with IRCT number of IRCT20181117041683N1. Written informed consent was obtained from parents. One hundred twenty six children aged 5–12 y undergoing tonsillectomy in Imam Khomeini hospital who were admitted from March 2019 through July 2019 were evaluated for eligibility and finally, 90 participants were randomly assigned to three groups. In the drug group (DG = 30), 0.025 mg.kg<sup>-1</sup> of IV midazolam at least 2–3 min [3] before going to operating room (OR) was administered by an anesthesia technician under supervision of anesthesiologist. In the painting group (PG = 30), psychologists

asked children to draw what they thought and imagine about OR for about 30 min. The control group (CG = 30) did not receive these interventions. Baseline anxiety was evaluated after admission to waiting room and post-intervention anxiety was measured at induction of anesthesia using modified-Yale Preoperative Anxiety Scale (m-YPAS), State-Trait Anxiety Inventory-Children (STAIC) and Visual Analogue Scale-Anxiety (VAS-A) which were administered by parents and psychologists respectively [4, 5]. Anesthesia was induced in all children by the anesthesiologist involved in the study by means of a mask. Parents and health professionals were adequately informed not to give any distractions to the participants.

Demographics were similar among groups. Analyzing the STAIC and m-YPAS demonstrated a difference in post-intervention anxiety compared to baseline among groups ( $P = 0.028$ ,  $P = 0.042$ , respectively). This difference was not seen as per VAS-A ( $P = 0.743$ ). As indicated in STAIC, anxiety increment was lower in DG and PG compared to CG ( $P = 0.005$ ,  $P = 0.010$ , respectively). Anxiety was lower in PG in comparison with DG and CG ( $P = 0.040$ ,  $P = 0.005$ , respectively) as per m-YPAS.

The present study indicates the effectiveness of painting as a low-cost and available alternative for premedication. Since only m-YPAS demonstrated a lower increment in anxiety in PG, the data does not substantiate the conclusion that painting therapy has higher effectiveness than midazolam.

## Compliance with Ethical Standards

**Conflict of Interest** None.

**Ethics Approval** Approved by the Research Administration and the Ethics Committee of Kermanshah University of Medical Sciences, Kermanshah, Iran (Approval ID: IR.KUMS.REC.1397.684) and registered in Iranian Registry of Clinical Trials in 2019/02/05 (IRCT number:

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