

## ANALYSIS OF THE FREQUENCY OF ADVERSE REACTIONS AND COMPLICATIONS AT THE STAGE OF AWAKENING AFTER OTOLORINGOLOGICAL OPERATIONS

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**Abstract.** *This article analyzes the clinical side effects that can be observed after anesthesia in children who have undergone various otorhinolaryngological operations.*

**Keywords:** *anesthesia, vomiting, ENT surgery, Postoperative nausea and vomiting, agitation.*

**Introduction.** The work of one day in an inpatient hospital poses certain tasks to the anesthesiologist resuscitator, not all of which can be considered solved by now: effective and reliably, qualitatively feasible premedication; maximum anesthetic protection with the least effect on the functions of the patient's body; rapid induction and rapid recovery from anesthesia; minimum frequency of post-acute complications. The introduction of modern endoscopic technologies has made it possible to expand the possibilities of pediatric outpatient ENT surgery. At the same time, a number of anesthetic problems remain unresolved in outpatient pediatric ENT surgery to date. These are postoperative adverse reactions and complications from anesthesia [1,8,12,14,15]. The composition of such adverse reactions and complications includes cough, hiccups, psychomotor agitation, vomiting, nausea, hypertonus of skeletal muscles, chills, broncho and laryngospasm [1,13]. Postoperative nausea and vomiting (PONV) is one of the most frequent (on average 30%) complications of the first day of the postoperative period of any surgical interventions, and is associated with irritation of the vomiting center in the brain [2, 3,12]. A after otorhinolaryngological operations in children, according to a number of authors, it reaches 75% or more [3,4,5,6]. In school-age children, nausea and vomiting develop in the early postoperative period in 34-50% [5, 11]. Vomiting increases the risk of aspiration and is associated with suture divergence, rupture of the esophagus, subcutaneous emphysema and bilateral pneumothorax. [1,3,4,13,14]. Postoperative nausea and vomiting often delay discharge from post-acute care units and are the main cause of unexpected hospitalization after planned outpatient surgery [15]. The annual cost of postoperative nausea and vomiting in the United States is estimated at several hundred million dollars [16,17]. The causes of the development of(PONV) are diverse — the use of opioid analgesics and inhaled anesthetics during anesthesia, the occurrence of metabolic disorders, pain, stress, disorders of central and peripheral hemodynamics, hypoxia, hypercapnia, increased intracranial pressure [3, 4,8, 9, 10]. It is known that 4 major neurotransmitter systems play an important role in the development of the gag reflex: dopaminergic (D2), histamine (H1), cholinergic (muscarinic) and serotonergic (5-HT3). In this regard, there are various approaches to the prevention of PTR [1,3,8,11,12]. For the purpose of premedication, a dopamine receptor blocker droperidol is prescribed, but the sedative effect and lengthening of the awakening period limit the use of droperidol as an antiemetic [2,3, 8, 9], and metoclopramide, dexamethasone are also used.

After anesthesia, the division of all possible complications is performed according to the signs of a lesion of a particular system. It is customary to distinguish 5 main groups, each of which includes several varieties of pathological conditions. The most dangerous damage to the respiratory system and circulatory system. There are the following types of negative reactions occurring during or after general anesthesia: respiratory damage, circulatory system damage (tachycardia, arrhythmia), central nervous system damage, gastrointestinal tract damage, allergic reactions.

**The aim of the study** was to analyze the frequency of adverse reactions and complications at the stage of awakening after otolaryngological operations in somatically healthy children.

**Materials and methods.** The study included 220 patients aged 2 to 17 years who came to the clinic "Happy Life" for the period 2020-2021 for surgery due to various diseases of the ENT organs. The majority of the studied patients were boys - 119 (54.09%), and girls respectively - 101 (45.9%) of the total number of children. Children aged 2-5 years 55 /25% , from 5 to 7 years was 31/14.09%, from 8 to 10 years -54/ 24.5%, from 11 to 14 years – 41/18.6%, from 15 to 17 years was 39/17.7%.

Before the surgery, permission for the operation was obtained from the parents of all sick children. Before starting treatment in the hospital, all patients necessarily passed the tests necessary for hospitalization (clinical blood test; determination of blood type and Rh factor, general urinalysis; biochemical blood test to determine the levels of glucose, bilirubin, prothrombin, creatinine, alanine aminotransferase and aspartate aminotransferase; markers of hepatitis B and C, HIV, (RW), presented chest X-ray and electrocardiography data, after which they were sent for consultation to a therapist and an anesthesiologist.

**The results of the study.** Depending on the method of providing anesthesia, the patients participating in the study were divided into 2 groups of 50 patients each. All children underwent the following surgical procedures as planned: adenotomy, tonsillectomy, submucosal resection of the nasal septum, vasotomy. Surgical intervention was performed under general anesthesia.

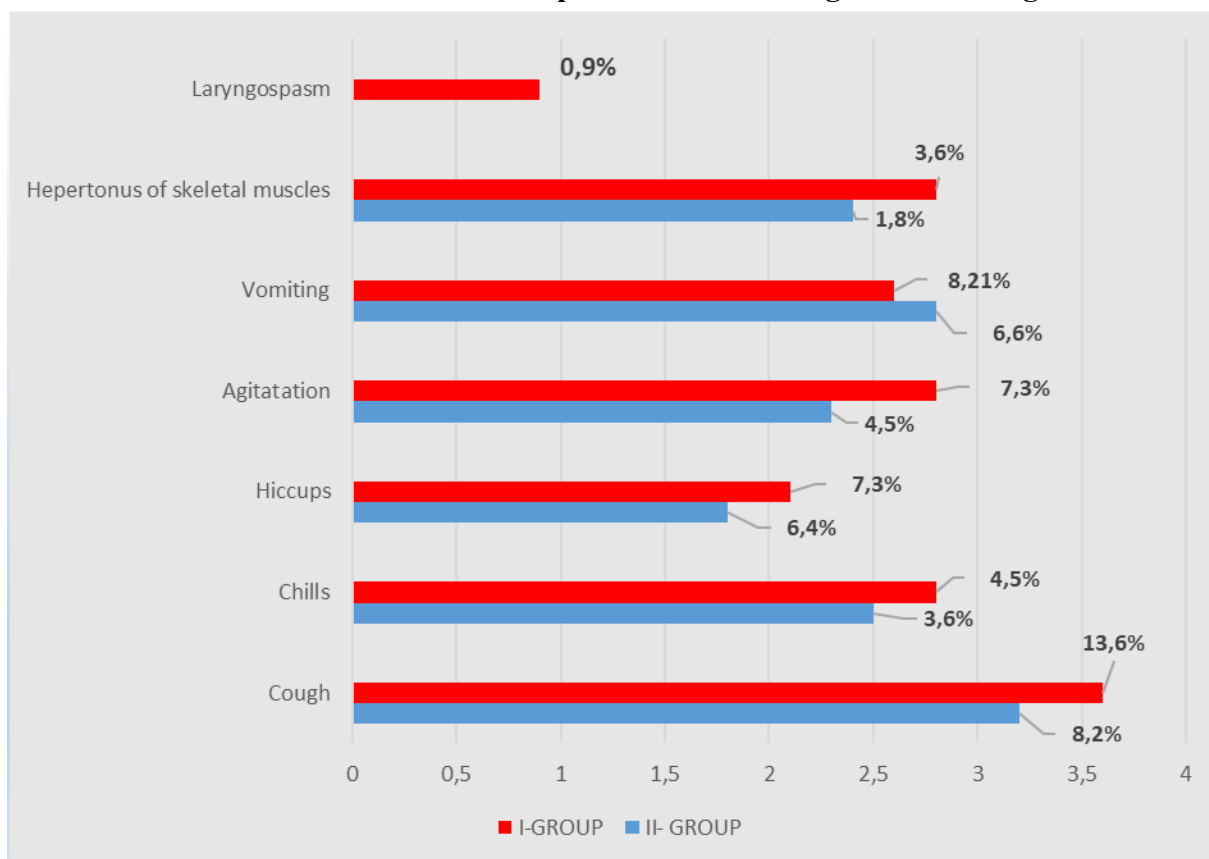
In the first group, consisting of 110 patients, intravenous anesthesia with propofol in combination with fentanyl was administered (propofol 2.2 mg/kg, fentanyl 4.9 mcg/kg, maintenance – continuous infusion of propofol 9.9 mg/kg/h and fentanyl 1.7 mcg/kg). The first group consisted of sick children of primary (from 6 to 10 years) and middle (from 11 to 14 years) school age. In the second group, consisting of 110 patients, intravenous anesthesia with propofol in combination with fentanyl was administered (propofol 2.2 mg/kg, fentanyl 4.9 mcg/kg, maintenance – continuous infusion of propofol 9.9 mg/kg/h and fentanyl 1.7 mcg/kg). The second group consisted of sick children of primary (from 6 to 10 years) and middle (from 11 to 14 years) school age.

Group 2 — 110 patients received intravenous anesthesia with ketamine in combination with fentanyl (fentanyl 2.8 mg/kg and ketamine 2.7 mg/ kg, maintenance, if necessary, ketamine 1.0 mg/ kg and fentanyl 2.5 mg/kg). Patients with diseases of the central nervous system, diseases of the gastrointestinal tract and concomitant somatic diseases were excluded from the study. Of all patients, adenotomy was performed in 25% of patients, tonsillectomy in 17.3%, septoplasty in 26.8%, adenotonsillectomy in 16.3%, paranasal sinuses surgery in 14.54%.

Postoperative analysis of the frequency of adverse reactions and complications at the stage of awakening in group 1, the following symptoms were observed: cough (15/13.6%), hiccups (7/6.4%), psychomotor agitation (8/7.3%), vomiting (9/8.21%), hypertonicity of skeletal muscles

(4/3.6%), chills (5/4.5%) and this is 48/43.6%. In the 2nd group, these clinical symptoms are less, their number was 35/31.8%. In group 1, 5 out of 9 cases of vomiting developed within 1 hour in patients.

#### **Adverse reactions and complications at the stage of awakening**



Among all the children studied, postoperative adverse reactions were more common in boys (54.2%) than in girls (45.8%).

**Conclusion:** 1. According to the study, the frequency of adverse reactions and complications after anesthesia is more common in older children from 7 to 14 years, unlike younger children from 2 to 5 years. 2. It is possible to prevent adverse reactions and complications after anesthesia by carefully collecting anamnesis of life and disease, this will reduce adverse indicators. Prognosis and prevention of adverse reactions and complications at the stage of awakening can provide high-quality rehabilitation of the child after otorhinolaryngological intervention.

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