

## Complex Treatment of Exudative Otitis Media in Benign Neoplasms of the Nose, Paranasal Sinuses and Nasopharynx

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**Relevance.** According to the forecasts of the World Health Organization (WHO), by 2030 the number of people suffering from hearing loss will increase by more than 30%. Also, one third of all cases of hearing loss is associated with diseases of the middle ear. In recent decades, the number of cases of exudative otitis media (EOM) has increased, which accounts for 15-17% of all cases of ear diseases. In addition, EOM is associated with irreversible hearing loss, which may be due to both the disease itself and its consequences. This feature of EOM is of great importance due to the special importance in medicine of the modern concept of "quality of life" (1,2,3).

To date, the diagnosis and treatment of EOM in neoplasms of the nose, paranasal sinuses and nasopharynx have been little studied. The relationship between diseases, in particular between inflammation in the auditory tube and tumor processes, their comorbidity is not taken into account (4).

**Purpose of the study.** To evaluate the effectiveness of complex therapy for exudative otitis media in benign neoplasms of the nose, paranasal sinuses and nasopharynx.

**Material and research methods.** The basis of the research work was the results of the examination and complex treatment of 55 patients with exudative otitis media (EOM) with benign neoplasms of the nose (BNN), paranasal sinuses (PNS) and nasopharynx (NP), who applied to the department of otorhinolaryngology of the 1st clinic of the Samarkand State Medical University in the period from 2018 to 2021.

27 patients of group IA (with traditional therapy) after surgical treatment for 2-4 days were prescribed vasoconstrictor nasal drops, mucolytics, after irrigation of the nasopharyngeal mucosa, the mouth of the auditory tubes with a solution of furacillin, the method of transtympanic injection of 0.5 ml of a mixture of 0.1% was applied topically dexamethasone solution. Patients of group IB in the amount of 28 (group with complex therapy) along with traditional treatment used the immunomodulator "Gepon" and nasal spray "Sinulor". In our work, we irrigated the mucosa of the nasopharynx, the mouth of the auditory tubes with 9.0 ml of a 0.02% solution of the Gepon immunomodulator, followed by transtympanic administration of the same drug at a dosage of 0.5 ml. The course of treatment in both groups was 3 transtympanic injections of drugs with an interval

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between procedures of 2 days. In the complex treatment, the Sinulor nasal spray was used after the removal of tampons: 1 injection into each nasal passage 4 times a day, for a course of treatment of 5-7 days. The course of complex treatment was 7 days.

### Results of the study and their discussion.

Table 1 presents the data of threshold audiometry in the groups of examined patients before the start of treatment and at the end of the observation period, that is, by the 21st day.

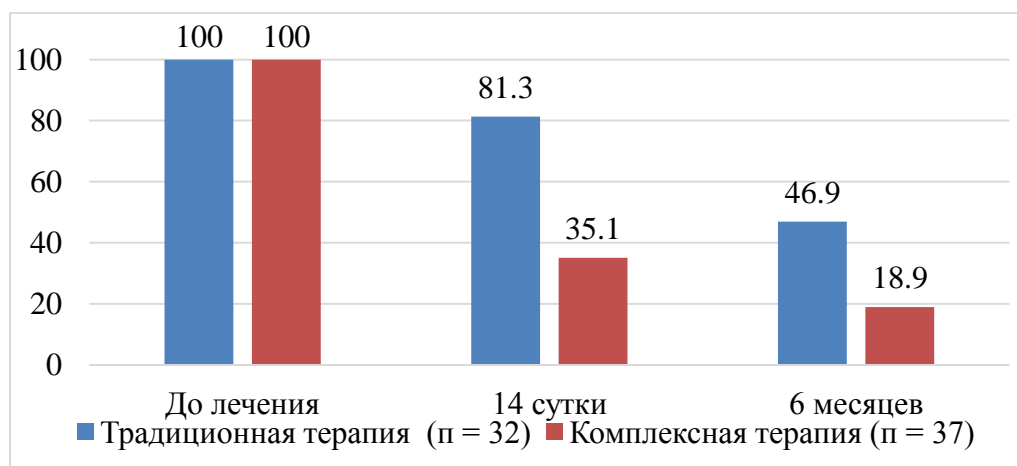
**Table 1. The results of pure-tone threshold audiometry in EOM patients with BNN, PNS and NP before treatment and at the end of the observation period, dB (M ± m) (each ear was assessed separately)**

Frequency Hz		Before treatment	Traditional therapy (n = 32)	Complex therapy (n = 37)
			After treatment	After treatment
Air passability	500	43,59±4,83	9,42±2,79*	8,67±1,84*
	1000	45,81±3,72	11,43±2,57*	10,11±1,98*
	2000	45,11±4,98	11,56±2,41*	9,48±1,76*
	4000	43,79±3,94	10,18±2,18*	10,17±1,93*
Bone permeability	500	10,83±1,11	9,69±1,56	8,75±1,82
	1000	11,79±0,84	9,81±1,73	9,38±1,53*
	2000	13,59±0,76	10,16±1,94*	8,13±1,72*
	4000	12,49±0,71	8,71±1,98*	9,47±1,33

Note: \* - statistically significant difference before and after treatment.

By the end of treatment, at all studied frequencies of air conduction, the thresholds of auditory perception decreased: on average, 4.4 times in the group with basic therapy and 5 times in the group with complex therapy.

An important diagnostic technique for exudative otitis media is tympanometry (Figure-1).



**Figure -1. Dynamics of pathological tympanograms in patients with EOM with BNN, PNS and NP**

According to the inclusion criteria in the study, all patients were diagnosed with a pathological type B tympanogram. On the 14th day, in the group with conventional therapy, only 18.7% of patients had type A tympanograms, while in 81.3% the curves obtained during tympanometry corresponded to type B and C tympanograms. In the group with complex therapy, the positive dynamics was more pronounced: normalization of the tympanogram on the 14th day was noted in 64.9% of patients;

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tympanograms of type B and C were recorded in the remaining 35.1%. By the end of the observation period, according to tympanometry, 53.1% of patients in the group with traditional therapy recovered, and tympanogram type B or C was recorded in 46.9% of patients. In patients of the complex therapy group, normalization of tympanometry was noted in 81.1% of cases (type A tympanogram).

Table-2 presents the results of a study of the parameters of systemic immunity. Analyzing the average values of the parameters of the immune status of patients with EOM with BNN, PNS and NP before and after treatment with the use of complex therapy, we noted a significant increase in the content of mature T-lymphocytes (CD3+) by 1.3 times, T-helpers (CD4+) by 1, 8 times, CD8+ 1.6 times, B-lymphocytes (CD19+) 1.3 times. In terms of humoral immunity, there is also a significant increase in comparison with the initial level of IgA by 2.6 times, IgG by 2.1 times, a decrease in IgM by 2.4 times, IgE by 1.3 times.

**Table 2. The results of immunological studies in patients with EOM with BNN, PNS and NP before and after treatment (M ± m)**

Indicators	Before treatment	Traditional therapy (n = 23)	Complex therapy (n = 25)
		21 day	21 day
CD3+	49,87±7,57	58.01±11,41	64,58±12,01*
CD4+	26,39±7,39	<b>41,43±8,41*</b>	48,89±8,14*
CD8+	16,06±2,45	<b>23,72±4,43</b>	25,22±4,82*
CD19+	20,21±2,53	23,12±4,4	25,73±5.69*
IgA	1,06±0,21	2,23±0,49	2,77±0,387
IgM	2,81±0,24	1,38±0,29*	1,18±0,22
IgG	6,32±0,79	11,58±1,71*	13,78±2,41
IgE	96,2±7,59	78,72±17,48*	72,65±18,82*

Note: \* - statistically significant difference before and after treatment.

**Conclusions.** A positive effect of complex treatment on the cellular and humoral components of immunity was revealed, which is expressed in an increase in the total number of T-helper subpopulation and T-cells, an increase in IgA and IgG, and a significant decrease in the level of IgM and IgE. Comprehensive treatment of EOM allowed to reduce the duration of treatment of patients by 2-4 days, which was confirmed statistically ( $p < 0.05$ ).

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