

LOCAL COMPLEX TREATMENT EXPERIENCE FOR PATIENTS WITH CHRONIC PURULENT OTITIS MEDIA

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Abstract: In this article, we have analyzed the results of the application of the combined solution of decasan and ozone-oxygen mixture, as a local conservative treatment, for 135 patients with acute exacerbation of chronic purulent medial otitis (CPOM). Its use increases the effectiveness of treatment and reduces time. The study of long-term results has shown persistence of sustained remission in 91,4% of patients.

A comparative analysis of traditional treatments and topical administration of antiseptic 0.002 % solution of "Dekasan" (dekametansin), in combination with ozone-oxygen mixture in patients with suppurative otitis media, was carried out. The analysis was conducted using ozone-oxygen mixture along with a local irrigation of middle ear cavity with "Dekasan."

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Introduction

Chronic purulent otitis media (CPOM) remains a complex problem in modern otorhinolaryngology despite the development and improvement of the investigation methods and different types of treatment. According to the conducted researches, in recent years the morbidity of purulent otitis per 1,000 people has been increased by almost 3 times and is found in 12-14,5% of the population (Jironkin, 1972; Zavadskiy, Zavadskiy, Zagorulko, Sofronova, & Zavadskaya, 2002). Chronic inflammation in the middle ear has its own features; it occurs in poorly drained cavities, in the absence of light and ventilation, in the condition of continuous contamination, and stimulation of the bacterial and fungal flora from the external acoustic meatus and the auditory tube. Bone tissue with feeding blood vessels in chronic purulent inflammation became compacted, which narrows the haversian canals, and leads to disorders of blood flow in the mucous membrane (Mishenkin, 1999; Tarasov, Fedorova, & Bikova, 1988).

The versatility of the healing process in the middle ear indicates the need to develop an integrated method of local pathogenetic conservative treatment for patients with CPOM with the inclusion of agents that can improve trophism, exhibit regenerative abilities, increase the supply of tissues in inflammatory cavity with oxygen, and improve the function of the auditory tube. The most expedient method for this purpose may be the topical application of antiseptic, fungicidal, bactericidal, and sporicidal solution decasan to compensate for the disorders in the tympanic cavity and the surface tension in the auditory tube, aeration with oxygen, and ozone-oxygen mixture for effects on chronic inflammation of the middle ear.

Ozone therapy enhances the action of antibiotics, has a bacteriostatic effect on the aerobic and anaerobic micro-flora, restores the depressed enzyme systems at the tissue level, and strengthens the body's immunological properties (Bateneva, 2000).

Material and methods

For this purpose, in the ENT clinic of Samarkand State Medical Institute, we have treated 135 patients with acute exacerbation of CPOM; 48 patients had bilateral otitis media, i.e. observations have been made on 96 ears. By the character of the process, 55 ears had chronic purulent mezotympanitis, and 32

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had chronic purulent epimezotympanitis. Of the 135 patients, there were 62 men and 73 women with the average age of 27-28 years. We have taken into consideration the complaints of patients, the age at which otitis media was first developed, the frequency, and causes of relapses.

All patients have been evaluated with otoscopic picture, clinical examination, radiography of temporal bones in Schüller's projection with modification of V.G. Ginzburg, investigation of the auditory tube function using aspiration-deflation method, investigation of hearing using perception by whispering and speaking, and experiments using tuning fork and tonal threshold audiometry. Bacteriological and cytological examination of exudates from the middle ear and the determination of susceptibility of microbial pathogens to antibiotics have been carried out in the treatment process. On the basis of the investigations of these data, the concept of complex conservative treatment has been built.

Ozonation of the sterile antiseptic solution "Decasan" was performed with the use of an "OZONATOR – 1" ozonator. The procedure was carried out daily for 5 minutes for 5-6 days. Dosage was 6 mcg/l per minute, which is one session per concentration of 6 mcg/l per minute for 5 minutes or 30 mcg/l in total. The duration depends on the dynamics of the disease. The effectiveness of treatment was assessed on the basis of otoscopy, microbiology, cytological investigations, and the time of the patient's hospital stay.

Results and discussion

All patients, by the character of the treatment, were divided into 3 groups. The first group included 28 patients who received traditional treatment as conservative transtympanal injection mixture of antibiotic and antiseptics solutions in combination with steroids, and it was used as a control. The second group included 40 patients whose treatment was supplemented by local use of ozone-oxygen mixture. The third group consisted of 67 patients who were treated according to the scheme of the third group, but it was supplemented by a local use of 0,002% decasan solution.

Treatment was carried out by the following scheme: after closing up the tympanic cavity, this cavity was locally washed by decasan solution using 50-g syringe, and the middle ear was ozonated by the use of ozone-oxygen mixture. The course of treatment consisted of 5 to 7 procedures. The duration of the treatment until remission in the different groups is shown in Table 1.

Table 1: The average duration of the effective conservative treatment in the different groups (the average bed/day, $M \pm m$)

Group of patients	The amount of patients (n – 135)	<i>The average bed/day</i>
I	28	9,1 ± 0,46
II	40	7,0 ± 0,40 *
III	67	5,5 ± 0,53 *

Note: * $p < 0,01$ in the comparison the I group

Source: Authors

The data comparison shows that as the inclusion of additional treatment methods is introduced, the durations of conservative treatment progressively decreased prior to the termination of suppuration from the ear. In the third group, in comparison with patients of the first group, the average bed per day has decreased by 3,7 days. Suppuration of the ear, in most cases, has stopped for 4-5 days after beginning of treatment; during otoscopy, the disappearance of congestion and decrease in swelling of the mucous membrane of the medial wall of the tympanic cavity became apparent. Cytological and microbiological investigation of exudate from the middle ear in patients of groups II and III, conducted in the dynamics, showed that they have a more rapid amplification of macrophage phagocytosis, increased amounts of

lymphocytes and monocytes, and a distinct increase of regeneration coinciding with the time of disappearance of otoscopic detectable signs of inflammation. The investigation carried out for 40 patients in group II, which was detected with microflora before treatment, indicated that the repeated bacteriological examination showed sterility of sowing in 30 patients on the fifth day after the beginning of treatment. Six patients were repeatedly detected with *Pseudomonas aeruginosa*. Four patients in group II found treatment to be ineffective; they were treated according to the scheme of group III, and all of them were discharged with the cessation of suppuration. Their average bed per day was 14 days. Only nine patients in the third group were unable to reach the end to suppuration; they were given an operative treatment. In all these cases, the symptoms exhibited the characteristics of epimezotympanitis. Conservative treatment of CPOM has been carried out in the presence of senso-neural hearing loss. By inclusion in the complex of conservative treatment, decasan and ozone-oxygen mixture, no complications have been found. During the control examination of 67 patients after 6 months of treatment, recurrence of suppuration was observed in 2 patients; during the physical examination in 1,5 years in 40 patients, exacerbation has occurred in 3 patients.

Conclusion

The results of the observations conducted allow us to make the conclusion that the inclusion of the local combined usage of decasan and ozone-oxygen mixture in the complex for conservative treatment of CPOM improves the effectiveness of treatment and reduces their durations. Our observations suggest that during the usage, this method of treatment does not incur acute middle ear and complications in the amplification process. The study of long-term results of treatment shows the retention of sustained remission in the most patients. Only in a small number of patients has been detected with CPOM relapse.

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