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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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август

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COMPARATIVE EVALUATION OF THE EFFICIENCY OF CONSERVATIVE AND SURGICAL METHODS OF TREATMENT OF PATIENTS WITH CHRONIC PURULENT OTITIS MEDIA

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✓ Resume

128 patients with chronic suppurative otitis media (CSOM) were examined. The work performed a comparative evaluation of the effectiveness of mucopolysaccharides (glycosaminoglycans) and surgical treatment. Long-term results were traced, which indicated a practically equal therapeutic effect of glycosaminoglycans and sanitizing surgery in patients with CHSO, which was manifested by a pronounced positive clinical effect and a significant improvement in laboratory parameters. Thus, it can be assumed that for this category of patients, first of all, one should choose the tactics of using glycosaminoglycans and, if it is ineffective, resort to surgical treatment.

Key words: Chronic suppurative otitis media, mucopolysaccharides, tympanoplasty.

СРАВНИТЕЛЬНАЯ ОЦЕНКА ЭФФЕКТИВНОСТИ КОНСЕРВАТИВНОГО И ХИРУРГИЧЕСКОГО МЕТОДОВ ЛЕЧЕНИЯ БОЛЬНЫХ С ХРОНИЧЕСКИМ ГНОЙНЫМ СРЕДНИМ ОТИТОМ

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✓ Резюме

Обследованы 128 больных хроническим гнойным средним отитом (ХГСО). В работе выполнена сравнительная оценка эффективности мукополисахаридами (гликозаминогликаны) и хирургического лечения. Прослежены отдаленные результаты, которые свидетельствовали о практически равном лечебном эффекте гликозаминогликанами и saniрующей операцией у больных с ХГСО, что проявлялось выраженным положительным клиническим эффектом и значительным улучшением лабораторных показателей. Таким образом, можно предположить, что для данной категории больных в первую очередь следует выбирать тактику применения гликозаминогликанов и, а в случае ее неэффективности прибегать к хирургическому лечению.

Ключевые слова: Хронический гнойный средний отит (ХГСО), мукополисахариды, тимпанопластика.

SURUNKALI YIRINGLI OTIT BILAN OG'RIGAN BEMORLARNI KONSERVATIV VA JARROHLIK DAVOLASH USULLARINING SAMARADORLIGINI QIYOSIY BAHOLASH

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Surunkali yiringli otit bo'lgan 128 bemor tekshirildi. Ishda mukopolisakkaridlar (glikozaminoglikanlar) va jarrohlik davolash samaradorligini qiyosiy baholash amalga oshirildi. Uzoq muddatli natijalar kuzatildi, bu HCG bilan og'rigan bemorlarda glikozaminoglikanlar va sanatsiya operatsiyasining deyarli teng terapevtik ta'sirini ko'rsatdi, bu aniq ijobiy klinik ta'sir va laboratoriya ko'rsatkichlarining sezilarli yaxshilanishi bilan namoyon bo'ldi. Shunday qilib, ushbu toifadagi bemorlar uchun birinchi navbatda glikozaminoglikanlarni qo'llash taktikasini tanlash va agar u samarasiz bo'lsa, jarrohlik davolanishga murojaat qilish kerak deb taxmin qilish mumkin.

Kalit so'zlar: surunkali yiringli otit vositasi, mukopolisakkaridlar, timpanoplastika.

Relevance

According to the WHO definition, chronic suppurative otitis media (CSOM) is a chronic infection of the middle ear and perforated tympanic membrane with otorrhoea for more than 2 weeks. The global burden of CGSA currently ranges from 1 to 46%, 60% of whom have significant hearing loss. Globally, there are 31 million new cases of CGHS annually, of which 22.6% are diagnosed in children under 5 years of age [1].

Despite the development of microsurgical techniques and the development of new methods of surgery, the treatment of patients with CGSO is an urgent problem of modern otorhinolaryngology [3].

Under the influence of microbial agents, platelet activation factor, TNF- α in conditions of insufficient oxygen access the adhesive ability of neutrophils increases due to increased synthesis of leukocyte integrins, which contribute to the activation of interaction processes between neutrophils and the endothelium of the vascular wall including them in the process of phagocytosis. The number of receptors to chemattractants, opsonins, cytokines increases on the membrane of active neutrophils, which ensures the movement of leukocytes to the focus of inflammation and phagocytosis [6, 8]. Thus, the participation of active leukocytes in the protective cellular mechanisms is ensured, ultimately leading to the sanation of the inflammation focus [2].

A distinctive feature of granulation tissue is the intensive formation of complex polysaccharides - glycosaminoglycans. Their former and more familiar name "mucopolysaccharides" is biochemically less accurate, but is still frequently used. The new term "glycosaminoglycans" (more correctly glycosaminoglycuronoglycans) and the modern nomenclature of these compounds were proposed in 1960 by I. Jeanloz. Glycosaminoglycans are substances consisting of amino sugars (glycosamino-) and uronic acids (glucurono-) combined in long chains (-glycans). In other words, glycosaminoglycans are disaccharide polymers with repeating units containing an aminosugar and a uronic acid. According to the majority of researchers, hyaluronic acid and chondroitin sulfate are of major importance in wound healing, with hyaluronic acid and chondroitin being synthesised first, followed by sulfated mucopolysaccharides, which, complexing with collagen, take part in the formation of collagen fibres. A small degree occurs in connective tissue constantly along with their synthesis and is carried out with the participation of hydrolytic enzymes - glycosidases (hyaluronidase, 3-glucuronidase, N-acetylhexosaminidase) and sulphatases. Intensive depolymerisation of these occurs early in the wound process, resulting in increased permeability and hydrophilicity of the intercellular substance. Thus, the important metabolic role of glycosaminoglycans at all stages of wound healing indicates that the development of the regulation of their synthesis and breakdown is of great practical importance for the management of inflammation and regeneration [5,7].

Purpose of the study. Comparative evaluation of the effectiveness of surgical and conservative methods of CGSO treatment.

Materials and methods

128 patients with CHSO confirmed by laboratory methods of research. All patients were randomised into two groups: The 1st, or main, group included 78 patients with CGSA who received regenerating local therapy curiosin 0.205% 10 ml, apply the solution once a day, damaged skin areas at a maximum dose of 1 drop/cm². The solution can be applied 2 times a day to severely soaking wounds. Duration of therapy - 21 days; the 2nd group consisted of 50 patients who underwent sanitising surgery.

All the patients underwent clinical, microbiological and cytological examination immediately before and 6-8 months after treatment.

When collecting anamnesis, special attention was paid to the information about acute otitis media, acute respiratory infections, subperiosteal abscesses, prolonged subfebrileitis, presence of diseases and complaints from the vestibular system.

Otoscopy assessed the size of tympanic membrane perforation, the condition of the mucous membrane and the presence of purulent exudate. Special attention was paid to the presence of patency of the auditory tube and inflammatory processes of the tympanic membrane with surrounding tissues, as well as the presence and nature of the contents. Chronic purulent otitis media is determined by its form, and there are many different approaches. In our country traditionally adhere to the classification of I.B. Soldatov (1990), according to which three forms of chronic otitis media are distinguished: Mesotympanitis (anterior, posterior, subtotal), epitympanitis and mesoepitympanitis. According to the ICD (2010), two forms of otitis media are distinguished: atticointermediate, corresponding to epitympanitis

and tubotympanal, more favourable, corresponding to mesoepitympanitis. The diagnosis of CGSA was made on the basis of the presence of at least two local signs, as well as characteristic complaints and anamnesis data.

Laboratory methods of research. The diagnosis of CGSA was confirmed by the data of microbiological and cytological studies.

Bacteriological sowing was performed on standard microbiological media (meat-peptone agar, blood, yolk-salt agar, mottled Gissler's row, Sabouraud's media, endo), isolation of pure culture of microorganisms was carried out. On the basis of microbiological, tinctorial, biochemical features and study of antigenic structure, identification by binary nomenclature was carried out with the study of isolated strains in the material.

Cytological examination, material was taken from the mucous membrane of the tympanic cavity through the perforation hole using a blunt probe with cotton wool twisted on its end. The material for cytological examination was fixed on a degreased slide for 3 minutes with eosin methylene blue and stained with azure-eosin mixture according to Romanovsky-Giemsa.

Results of discussion

We examined 128 patients with CGSA confirmed by laboratory methods of investigation. Most of the patients complained of constant and (or) periodic pain, ear stuffiness, hearing impairment, tinnitus, itching. All patients were preliminarily examined by a paediatrician, therapist and neurologist.

For a more objective assessment of the patients' condition and the effectiveness of treatment was carried out according to the index of disease severity (ITZ), including the main clinical indicators of objective condition, subjective condition of patients, examination and instrumental studies.

The main complaints of patients with CGSA were: hearing loss and periodic discharge from the ear of mucous character of various viscosity. All examined patients complained of hearing loss, 78 (60,9%) patients complained of ear discharge or wetness sensation. Other frequent complaints were tinnitus, which occurred in 25 (19,5%) patients. Intermittent pain in the ear was noted in 19 (14,8%) patients. Complaints of systemic dizziness were noted in 3 patients (2,3%). From the anamnesis of the disease it is noteworthy that the majority of patients - 86 (74,8%) noted the onset of the disease in middle childhood.

The duration of the disease in patients with CGSA varied from 2 to 20 years, at that in 35 (27,3%) it was not less than 20 years (tab. 1).

Table 1

Number of patients	Duration of disease (in years): abs.h.%			
	<5	6-15	>20	Total
	39 / 30,4	47 / 36,7	42 / 32,8	128 / 100

The first group included 78 patients with CGSA who received regenerating topical therapy curiosin 0.205% 10 ml, apply the solution once a day, damaged skin areas at a maximum dose of 1 drop/cm², 78 (61.3%) patients were included. The mean age of the patients was 30 years (11 to 55). There were 40 (51.3%) females and 38 (48.7%) males.

The second group consisted of 50 patients who underwent sanitising surgery, which included 50 (39.0%) patients: females 32 (64%) and males 18 (36%). The average age of the patients was 35 years (from 25 to 44).

The effectiveness of the used methods of postoperative management was evaluated by the comparative analysis of the course of the postoperative period of all 2 groups of patients with CGSO on the basis of anatomical and functional results in the nearest and distant time, as well as the results of bacteriological and cytological studies.

Anatomical evaluation of the results of surgical treatment of patients with chronic purulent otitis media was carried out depending on the method of postoperative treatment. It consisted of the analysis of the general condition of the operated patients, dynamics of local reparative processes in the early postoperative period and postoperative complications.

The following clinical characteristics of the postoperative period were evaluated: 1) the nature of the body temperature response in the first week after surgery in response to the surgical intervention and the presence of tampons in the external auditory canal; 2) the intensity of pain syndrome in the area of the performed surgery during the first dressing; 3) the duration, abundance (scanty, moderate,

significant) and nature of wound discharge from the external auditory canal; 4) the state of the neotympanic membrane after removal of the fixing material, the presence of retraction,

Thus, the majority of patients with CGSA had local signs of CGSA and rather blurred general clinical picture: the presence of many complaints in the absence of objective signs of organic lesions of the vestibular apparatus. It is difficult to choose an adequate method of treatment for such patients.

In all patients in both groups the most frequent pathogen was *Staphylococcus aureus* isolated in 36 (28,1%), which was the main pathogen of CGSA. At the same time it was found both in the form of monoflora and in combination with other bacterial agents. *Str. epidermidis* 19 (14.8%), *Pseudomonas aeruginosa* 23 (18.1%), *Enterobacter* 15 (11.7%), *P. Mirabilis* 8 (6.2%), *Proteus vulgaris* 5 (3.9%) and Association with *Candida* 22 (17.2%) were the second leading causative agents of CGSA.

Cytological diagnostics was characterised by low traumatization of the examined tissues, which we used to assess both the initial condition of the skin of the external auditory canal and the remains of the tympanic membrane in the chronic inflammatory process, and the postoperative condition of the above-mentioned tissues.

As a result of the treatment, in the 1st group; neutrophils were $45,5 \pm 3,8^*$, eosinophils $2,8 \pm 0,9^*$, lymphocytes $3,6 \pm 0,8^*$, plasma cells $2,6 \pm 0,4^*$, macrophages $7,6 \pm 1,1^*$, mast cells $1,8 \pm 0,7^*$ and fibroblasts and epithelial cells were not observed.

In group 2; neutrophils were $24,2 \pm 2,3^*$, eosinophils $1,8 \pm 0,4^*$, lymphocytes $3,2 \pm 0,2^*$, plasma cells $1,5 \pm 0,1^*$, macrophages $5,4 \pm 0,7^*$, mast cells $1,5 \pm 0,3^*$ and no fibroblasts and epithelial cells were observed.

Cytograms on the 28th day of the study during the treatment field revealed epithelialisation of processes in the tympanic cavity in the group using Curiosin compared to the group receiving standard treatment. Although reparative processes both in the group with standard treatment and in the group with recommended treatment, the course was identical, only prolongation of reparative processes in the group with standard treatment with slowing down of inflammatory and regenerative phase of healing was noted.

Thus, the important metabolic role of glycosaminoglycans at all stages of wound healing indicates that the development of the regulation of their synthesis and breakdown is of great practical importance for the management of inflammation and regeneration.

Conclusions

Clinical data on the use in patients with purulent otitis media testified to the elimination of the inflammatory process in the tympanic cavity after 21 days of systemic antibacterial therapy in 90% of patients.

The distant results in comparative effectiveness of the proposed treatment showed positive clinical and laboratory dynamics, which contributed to pronounced dysbiotic changes of microflora with inflammatory type of local wound process.

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