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COMPLEX TREATMENT OF CHRONIC ADENOIDITIS IN FREQUENTLY ILL CHILDREN

ABSTRACT

The share of diseases of the upper respiratory tract in frequently ill children (FIC) accounts for an average of 50 to 70%. Chronic pathology of the lymphopharyngeal ring in the FIC group occurs 2 times more often than in healthy people. It has now been established that the formation of chronic diseases of the lymphoepithelial ring, in particular, the lymphoid tissue of the nasopharynx, occurs in the case of frequent acute diseases of the respiratory system in children. Pathology of the pharyngeal tonsil and an increase in respiratory diseases form a kind of "vicious circle": on the one hand, hypertrophy of adenoid vegetations and adenoiditis contribute to an increase in the incidence of acute respiratory viral infections; on the other hand, frequent respiratory diseases provoke an increase in lymphoid tissue and contribute to the formation of chronic adenoiditis. The lymphopharyngeal ring is the "entrance gate" for most antigens (AG) entering the child's body, and the viability of its protective function directly affects the formation of the health of the growing organism as a whole. The pharyngeal tonsil, like the palatine ones, is prone to inflammatory and other diseases accompanied by an increase in the size of adenoid vegetations (hypertrophy) and/or their inflammation (adenoiditis). The terms "adenoids" and "adenoiditis" can complement each other. Otolaryngologists distinguish "true" and "false" hypertrophy of adenoid vegetations. The term "true" hypertrophy is understood as hyperplasia of the lymphoid tissue, which is observed as a symptom of constitutional lymphatism, characterized by hyperplasia of the lymphoid organs. True hyperplasia is formed against the background of insufficiency of the hypothalamic-pituitary region, reduced production of glucocorticosteroids, thymus dysfunction, reactive lymphoid hyperplasia.

Keywords: hypertrophy, nasopharynx, antigens, tonsil, lymphoid tissue.

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КОМПЛЕКСНОЕ ЛЕЧЕНИЕ ХРОНИЧЕСКОГО АДЕНОИДИТА У ЧАСТО БОЛЕЮЩИХ ДЕТЕЙ

АННОТАЦИЯ

На долю заболеваний верхних дыхательных путей у часто болеющих детей (ЧБД) приходится в среднем от 50 до 70%. Хроническая патология лимфоглоточного кольца в группе ЧИК встречается в 2 раза чаще, чем у здоровых людей. В настоящее время установлено, что формирование хронических заболеваний лимфоэпителиального кольца, в частности лимфоидной ткани носоглотки, происходит

при частых острых заболеваниях органов дыхания у детей. Патология глоточной миндалины и рост заболеваний органов дыхания образуют своеобразный «порочный круг»: с одной стороны, гипертрофия аденоидных вегетаций и аденоидиты способствуют росту заболеваемости ОРВИ; с другой стороны, частые респираторные заболевания провоцируют увеличение лимфоидной ткани и способствуют формированию хронического аденоидита. Лимфофарингеальное кольцо является «входными воротами» для большинства антигенов (АГ), поступающих в организм ребенка, и состоятельность его защитной функции напрямую влияет на формирование здоровья растущего организма в целом. Глоточная миндалина, как и небные, склонна к воспалительным и другим заболеваниям, сопровождающимся увеличением размеров аденоидных вегетаций (гипертрофия) и/или их воспалением (аденоидит). Термины «аденоиды» и «аденоидит» могут дополнять друг друга. Отоларингологи различают «истинную» и «ложную» гипертрофию аденоидных вегетаций. Под термином «истинная» гипертрофия понимается гиперплазия лимфоидной ткани, которая наблюдается как симптом конституционального лимфатизма, характеризующегося гиперплазией лимфоидных органов. Истинная гиперплазия формируется на фоне недостаточности гипоталамо-гипофизарной области, сниженной продукции глюкокортикостероидов, дисфункции тимуса, реактивной лимфоидной гиперплазии.

Ключевые слова: гипертрофия, носоглотка, антигены, миндалины, лимфоидная ткань.

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Introduction. Respiratory tract infections are the most common in the structure of general morbidity in children, causing complications of varying severity [1]. Children who suffer from acute respiratory infections more often than their peers belong to the group of “frequently ill children” CCH (second health group). The leading clinical and immunological feature of this group of children is a decrease in resistance to viral and bacterial pathogens with the formation of foci of chronic infection in the body [2,3,4,5]. The frequency of chronic recurrent adenotonsillitis in the FSD group is significantly higher than in children with the first group of health and can reach 70%, compared with children with the first group of health, in which this pathology is in the range from 20 to 30% [6]. Chronic adenoiditis is a disease of the nasopharynx that is difficult to diagnose, often unrecognized without a special endoscopic examination. Long-term, if untreated, chronic adenoiditis can cause secondary complications in children, accompanied by an imbalance of factors of innate and adaptive immunity, changes in the microbiota of the pharyngeal tonsil with a predominance of pathogenic and opportunistic bacterial flora in the microbial landscape [7]. Today in the Russian Federation there is the following tactics for the treatment of chronic adenoiditis: several courses of conservative therapy (antimicrobial, antiallergic, immunomodulatory), in the absence of an effect within 6 months - surgical treatment [8]. As a promising pathogenetic method, one can consider the use of polyvalent bacterial lysates, which have proven their high efficiency in the prevention and treatment of diseases of a bacterial and viral nature [9]. To date, a promising drug from the group of bacterial lysates is the Ismigen immunostimulant, which contains lysis products of gram-positive (*Streptococcus pneumoniae* (6 serotypes), *Staphylococcus aureus*, *Streptococcus pyogenes*, *Streptococcus viridans*), gram-negative (*Klebsiella pneumoniae*, *Klebsiella ozaenae*, *Haemophilus influenzae*, *Moraxella catarrhalis*) microorganisms. Its distinguishing feature from other drugs of this group is the method of preparation, namely, the destruction of bacteria under high pressure, as a result of which most of the antigens remain intact, providing a higher immune response compared to lysates obtained with by means of chemical inactivation, which makes it possible to maintain a high immunogenic potential of the drug [10].

The leading place in the structure of the morbidity of the child population is occupied by diseases of the respiratory system - 68-82%. Frequently ill children are of particular concern. The cause of repeated diseases of the respiratory tract is often the pathology of ENT organs, the development of which is facilitated by deviations in the state of the immune system, including physiological age-related immunodeficiencies. Unfortunately, until now there is no age approach in the strategy of treatment programs for the management of children with pathology of the lymphadenoid ring. The importance of the problem is due to the danger of any intervention in the area of the emerging lymphoid ring of the pharynx, which is an essential part of the immune system, especially the system of mucosal immunity of the upper respiratory tract.

The formation of the pathology of the lymphopharyngeal ring in a child is possible already in the first year of life and often begins with a simple hypertrophy of the pharyngeal tonsil, and subsequently inflammation of it. Chronic adenoiditis accounts for 20 56.3% of upper respiratory tract diseases in children. Hypertrophy of the nasopharyngeal tonsil is one of the main reasons for such frequent inflammation of the paranasal sinuses against the background of banal SARS, acute, recurrent and chronic otitis media, leading to hearing loss. Given the important role of the pharyngeal tonsil in immunogenesis and local protection of the mucous membranes of the upper respiratory tract from infection, it is impossible to recognize the surgical radicalism that exists in pediatric practice as appropriate. A sparing approach with the widespread use of conservative methods of treating chronic adenoiditis in children can be considered the most appropriate.

One of the options for non-surgical treatment of the pathology of the pharyngeal tonsil is magnetic infrared laser therapy, the effectiveness of which allows it to be classified as modern health-saving technologies. Quantum therapy, which has a membrane-stabilizing effect, has a direct positive effect on local factors, improving the processes of sanitation and repair of the mucous membranes of the respiratory tract and the structures of the lymphopharyngeal ring. Rational use of methods of topical and systemic therapy and modern possibilities of magnetic infrared laser therapy in the treatment of frequently ill children with chronic adenoiditis makes it possible to refuse adenotomy in 80% of cases.

Homotoxicological and homeopathic preparations have a multifaceted effect on various links in the pathogenesis of diseases of the pharyngeal ring, allowing individualization of treatment, taking into account the constitution and personality of the child.

The search and implementation of new sparing conservative methods of treatment is justified and does not leave indifferent doctors of various specialties (pediatricians, otolaryngologists, immunologists), as well as teachers and parents.

Among the problems facing domestic medical science, the preservation of children's health occupies a special place, which is directly related to the sharp deterioration in the physical and mental health of almost the entire contingent of children and adolescents [7]. A decrease in the number of children with health group I is ascertained from preschool age. Thus, among 70% of preschoolers in Moscow, 3-4 morpho-functional deviations are registered, 5 or more deviations of 20% of children. Every fourth child has a chronic pathology. More than 20% of children have deviations in physical development, mainly due to underweight; in 20-30% of preschool children of different age groups, there is a discrepancy between the level of psychomotor development and the calendar age [13].

According to Dashevskaya N.D., Cherednichenko A.M. (2001), who examined 180 preschool children in Yekaterinburg, the predominant children were appetite disorders, frequent abdominal pain and dyspeptic disorders (98.8%), complaints of a general neurotic nature (82.8%). Allergic reactions were observed in 23.9%, enuresis in 10% and encopresis in 6.1%. Quite often (in 32.8% of cases), children were underweight and short stature (5.5%), rarely - obesity of the II degree (5.5%). Children were identified with a lag of biological age from the passport age (18.9%). Most often, the examination revealed symptoms of chronic intoxication and micropolyadenia (68.9%), the presence of ENT pathology in the form of hypertrophy of the tonsils II, III st. (87.3%), chronic otitis, tonsillitis, adenoids (36.1%). All children showed symptoms of vegetovascular dystonia. Most of the surveyed preschoolers were assigned to III and IV (68.3%) health groups.

In children over 3 years of age, the infection index (II) can be used as a criterion for inclusion in the FIC group, defined as the ratio of the sum of all cases of acute respiratory infections during the year to the age of the child. At the same time, AI in rarely ill children is 0.2-0.3, and in children from the FIC group it is 1.1-3.5 [7]. Frequently ill children with ARVI, as a rule, have a complex of factors affecting the frequency of infections. The health status of the parents has a direct impact on the health of the child [10,54]. Apparently, this impact is not only purely biological (heredity), but also indirectly through a system of conditions that characterize the lifestyle of the mother and father, their attitude towards health, and the degree of medical activity [8]. The preventive activity of people, determined by the awareness of health as a value and the presence of targeted actions to maintain and strengthen it, is currently becoming an important factor affecting the health of the population, and first of all, children's [11]. When assessing the relationship between the child's health group and the socio-hygienic characteristics of the family, the composition of the family was noted as significant. As a rule, FBI are children from single-parent and large families, from young and asocial parents, with a low professional and educational level, living conditions [4]. Numerous studies have established the

negative impact on the health of a child of early artificial feeding, irrational daily routine, irregular and insufficient exposure to fresh air, low physical activity and bad habits of parents [3]. Elementary adherence to the rules of a healthy lifestyle can neutralize all these negative impacts and, therefore, parental education is a task of paramount importance [5]. It has been proven that not only the lack of necessary knowledge from parents, but also their excessive independence in matters of treatment negatively affects the health of the child. Frequent diseases are a risk factor for the development of chronic pathology [7].

The aim was to evaluate the results of complex therapy of chronic adenoiditis using a polyvalent bacterial lysate.

Material and methods. The study period was from 2020 to 2021yy. The study involved 83 children aged 4 to 8 years with chronic purulent recurrent adenoiditis in the acute stage, with a history of acute respiratory infections 6 or more times a year, exacerbations of chronic adenoiditis from 3 to 6 times a year. Written informed consent to participate in the study was obtained from the parents of these children or their legal representatives. Patients with indications for systemic antibacterial therapy, with purulent pathology of the paranasal sinuses, acute and exacerbation of chronic pathology of the middle ear, children with an unsanitized oral cavity, with somatic diseases in the stage of decompensation were excluded from the study, patients with established primary and secondary IDS, children unable to take the drug sublingually, children whose parents have written a refusal to participate in the study at any stage. 3 groups were formed. The study consisted of two stages. Group 1 included 41 children, the first stage of which was the treatment of exacerbation of chronic adenoiditis: anemia of the nose, followed by irrigation of the nose and nasopharynx with saline twice a day. After the toilet of the nasal cavity, the drug framecetin was used intranasally 3 times a day and carbocysteine orally until the inflammation was relieved, from 5 to 10 days of treatment. From day 11, the second stage of therapy began, which included irrigation of the nose and nasopharynx with saline. solution 2 times a day for up to three months. Group 2 - 42 children comparable in age, sex, anamnestic data with children from group 1. At the first stage, children from group 2 received nasal anemia for 5-10 days, followed by irrigation of the nose and nasopharynx with saline twice a day, using drugs framecetin 3 times a day intranasally and carbocysteine orally and taking the immunostimulant Ismigen sublingually in the morning, on an empty stomach 1 time per day for 10 days. During the second stage, the children were irrigated with saline solution of the nose and nasopharynx 2 times a day for up to three months with an additional sublingual immunostimulant course for 10 days with a 20-day break between courses.

Group 3 - 12 conditionally healthy children - was formed during preventive examinations, the children did not participate in the treatment. Before the start of treatment, all children underwent a clinical examination, collection of an anamnesis of the disease and life. Subjective assessment of complaints was given by the patients' parents or their legal representatives on the basis of a 10-point visual analogue scale (VAS). The sampling of contents from the surface of the pharyngeal tonsil was carried out under the control of the endoscope 10 days and 3 months after the completion of the study. After 6 months, the number of recurrences of chronic adenoiditis and episodes of acute respiratory infections in children of groups 1, 2 was assessed. The immunological efficacy was assessed by analyzing the functional activity of neutrophils of the detachable pharyngeal tonsil according to their ability to absorb latex particles, oxygen-dependent metabolism, functional reserve [12]. ELISA was used to determine the concentration of cytokines. The research results were subjected to statistical processing using the mathematical package Mathsoft Mathcad.

Results.

When collecting an anamnesis of the disease and life of the examined children, the following data were obtained: the average age of children was 5.1 years, the average number of episodes of acute respiratory infections was 7.6 during the year, the average number of relapses of chronic adenoiditis was 4.2 cases per year, the use of systemic antibiotics - Rial drugs 3.8 courses per year, 5 children have a history of adenotomy. Complaints were registered in patients of groups 1-2: difficulty in nasal breathing in 83 children, cough, mainly in the morning hours in 79 children, snoring in 78 children, nasal in 76 children. 2nd degree - 56 children, 3rd degree - 25 children, purulent or purulent-mucous discharge of the pharyngeal tonsil in 78 children. During the initial examination, there was no statistically significant difference between the symptoms of the disease according to the VAS and endoscopic examination of the nasopharynx ($p>0.05$) in patients of groups 1 and 2. At the control examination on the 10th day, a significant decrease in complaints of difficulty in nasal breathing, coughing, snoring, nasality was registered ($p<0.05$). An endoscopic examination on the 10th day from the start

of treatment showed a significant change in hypertrophy only in the group of children who took Ismigen: a decrease in grade III hypertrophy in 50% of children. Was the disappearance of purulent and mucous discharge on the pharyngeal tonsil observed in everyone? Or how many children who received complex therapy with Ismigen? And what happened in the group of patients who did not receive Ismigen? During the dynamic observation of children after 6 months from the start of therapeutic measures, the following were registered: in group 1 - 98 episodes of acute respiratory infections, 58 episodes of exacerbation of chronic adenoiditis; in group 2 - 70 episodes of acute respiratory infections, 37 episodes of exacerbation of chronic adenoiditis. An analysis of immunological parameters revealed disorders in the functional and metabolic status of neutrophils on the surface of the pharyngeal tonsil, expressed in a decrease in the phagocytic activity of neutrophils by 23.8%, a violation of the flow of oxygen-dependent processes of neutrophils recorded in the NCT test by 35, 2%, a decrease in the functional reserve of neutrophils by 23.0%. Under the influence of complex therapy with the use of Ismigen, phagocytic activity increases from 7.8% to 11%, oxygen-dependent metabolism increases from 14.6% to 25.9%, the functional reserve of neutrophils increases, normalization - content of immunoglobulins of what classes?, cytokines.

The clinical and immunological efficacy of the complex therapy of chronic adenoiditis in frequently ill children is directly related to the restoration of the factors of colonization resistance of the macroorganism disturbed by the action of pathogens [13]. The results of the study showed that the macromolecules that make up the preparation, obtained by mechanical lysis of a microbial cell, are able to stimulate the development of dendritic cells responsible for the activation of two types of immunity: innate and acquired, in which increase in total IgG and secretory IgA? recorded by us during control immunological studies. The generation process is regulated by the production of cytokines, which play an important role in the induction of acquired immunity.

Conclusion.

Complex therapy with the use of the immunostimulant during the period of exacerbation of chronic adenoiditis allows to reduce the duration of treatment, the number of episodes of acute respiratory infections, reduce the volume and amount of pathological discharge of the pharyngeal tonsil, therefore, children with chronic adenoiditis and hypertrophy of the pharyngeal tonsil, including those who are registered with the dispensary, as those who are often and for a long time ill, it is recommended to include the drug in planned treatment programs. Complex therapy with the use of an immunostimulator contributes to the normalization of the functional and metabolic status of neutrophils on the surface of the pharyngeal tonsil, the restoration of the content of immunoglobulins and cytokines.

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