

# ADENOTOMY IN CHILDREN WITH ALLERGIC RHINITIS AND BRONCHIAL ASTHMA

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## Abstract

In recent decades, a steady increase in allergic diseases has been recorded. In the structure of childhood pathology, bronchial asthma (BA) and allergic rhinitis (AR) occupy one of the leading places in terms of prevalence. The prevalence of BL among children and adolescents ranges from 3% to 15% and significantly exceeds official statistics. The share of AR in the overall structure of allergic diseases is extremely high (60-70%). The prevalence of AR is especially high in the child population, where it reaches 10 - 28.7%. In children suffering from AR in combination with BA - hypertrophy and chronic inflammation of the pharyngeal tonsil (PM), is the most common pathology of the ENT organs and, according to various authors, ranges from 30 to 86%. It has been proven that ENT diseases can be the cause or aggravating background of the course of BA, reduce the effectiveness of the therapy and worsen the prognosis of the disease. In connection with the emergence of the theory of lymphogenesis, a tendency is developing towards a more gentle, conservative method of treating hypertrophy and inflammation of the brain. Most clinicians believe that any surgical intervention on the upper respiratory tract (URT1), performed without taking into account the state of the body's reactivity, can become a powerful provoking factor in the aggravation of allergies in other organs and systems, and also cause a severe exacerbation of the disease. However, despite significant advances in the treatment of these diseases, the possibilities of therapeutic regimens for a combination of AR with pathology of the lymphopharyngeal ring (LPR) remain limited. The lack of effect from the therapy for chronic pathology of the brain in children with AR and BA affects the quality of life (QOL) of these children. All this forces us to expand the search for conservative treatment methods and resort to surgical treatment. In recent years, isolated works of foreign and domestic researchers have appeared, indicating a favorable effect of adsnotomnes on allergic diseases of the respiratory tract. However, to date there is no single point of view on the treatment of children with chronic adrenalitis, hypertrophy of the GM and AR in combination with bronchial asthma, and discussions on this topic continue.

## INTRODUCTION

In connection with the above, the aim of the study is to increase the clinical effectiveness of the treatment of children with hypertrophy of adenoid vegetations in combination with allergic rhinitis and bronchial asthma.

## Research methods

To develop a diagnostic algorithm for the management of children with chronic adrenalitis, hypertrophy of the pharyngeal tonsil and allergic rhinitis in combination with bronchial asthma. To



study the clinical features of chronic adenitis in children with allergic rhinitis and bronchial asthma. To study the quality of life of children with chronic adenitis, hypertrophy of the pharyngeal tonsil and allergic rhinitis in combination with bronchial asthma before and after adenotomy.

### Results of the study

The application in clinical practice of the proposed staged treatment and diagnostic algorithm in children with chronic adenoiditis and AR in combination with BA contributes to a differentiated approach to choosing the optimal treatment method and preventing the progression of the process. Indications and contraindications for surgical treatment were determined and tactics of pre- and postoperative management of children with allergic diseases of the respiratory tract were developed. It was proven that the inclusion of adenotomy and complex therapy of chronic adenoiditis in children over 7 years old suffering from AR leads to a decrease in the frequency of sensitization to pollen allergens and does not affect the spectrum of sensitization. A systematic approach to the management of children with chronic adenoiditis, GM hypertrophy and AR in combination with BA from the standpoint of the functional and clinical unity of the entire respiratory system allows us to determine the indications for adenotomy, achieve a pronounced clinical effect and improve the quality of life. Timely performed adenotomy in children with chronic adenoiditis, GM hypertrophy and AR in combination with BA has a persistent positive effect on the course of BA and AR, leads to a decrease in the frequency of sensitization to pollen allergens and does not affect the spectrum of sensitization to inhalation allergens. The study of the UC is an additional criterion for assessing the effectiveness of therapy methods (conservative or surgical) along with clinical, laboratory instrumental studies, as well as a tool for assessing the side effects of the methods under study.

Allergic diseases attract more and more attention of doctors of different specialties every year. Despite the fact that allergic diseases have been known to man for more than two and a half thousand years, in the modern world the problems connected with questions of diagnostics, therapy and prevention of allergopathology remain very urgent. In the last decades the problem of allergology has assumed the scale of a global medical and social problem. Allergy is called "disease of civilization". In highly developed countries the percentage of people suffering from allergies (mainly among the young population) is significantly higher than in developing countries. Environmental pollution by industrial waste<sup>7</sup>, unfavorable social conditions, increased consumption of various medications, intensive use of disinfectants at home and in production, use of pesticides and herbicides in agriculture, changes in food quality, use of genetically modified products — the combined effect of these factors on the modern human body<sup>1</sup> creates conditions for high allergen loads. As additional studies have shown, over the past 30 years, the prevalence of allergic diseases has doubled everywhere every 10 years. At present, the problem of allergic rhinitis can be considered one of the most pressing. In terms of prevalence, medical and social significance, impact on health and quality of life of patients, AR ranks first among other allergic diseases. Over the past few decades, there has been a steady increase in the number of patients suffering from this pathology in European countries. In the structure of allergopathology, the proportion of AR is very high (60-70%). According to the results of epidemiological studies, AR affects about 20% of the population of all age groups. The prevalence of allergic diseases in most





European countries ranges from 10 to 32%, in Great Britain - 30%, in Sweden - 28%, in New Zealand and Australia - 40%, in South Africa - 17%. In Russia, up to 25% of the population has rhinitis symptoms. In the USA, more than 35 million residents (27.89-39.50) seek help with AR symptoms annually. AR limits patients in physical, psychological and social aspects of life. AR is the cause of decreased quality of life. This is often due to the fact that rhinitis often precedes the development of bronchial asthma (BA) (in 32-49% of patients), worsens its course, significantly increasing the number of calls to emergency medical care.

Modern AR therapy involves the elimination of etiologically significant allergens, allergen-specific immunotherapy (ASIT), pharmacotherapy and patient education. ASIT occupies a leading position in the treatment of atopic diseases. However, the existing certain inconveniences associated with frequent visits to an allergist, the possibility of developing systemic adverse reactions, and the existing group of people for whom ASIT is contraindicated are a prerequisite for finding new effective and safe means for the treatment of AR.

However, despite a wide range of antiallergic drugs, highly sensitized patients with an increase in the peak concentration of pollen in the atmospheric air report insufficient control over the symptoms of allergic rhinitis. In addition, lack of control may be associated with irregular use of antiallergic drugs, underestimation of the severity of the disease and the lack of restorative therapy for the nasal mucosa. In search of alternative and more effective treatments, patients and / or doctors use systemic prolonged glucocorticosteroids, homeopathic drugs, herbal medicine or unconventional methods of treating AR. As a result, the patient may develop complications of AR and side effects from treatment, which lead to a decrease in the quality of life. A decrease in the patient's quality of life is reflected in labor productivity, his social and psychological adaptation. The economic burden of allergic rhinitis and its complications in the United States is estimated at 6 billion dollars annually.

The development of individual programs for the implementation of complex pathogenetic and restorative treatment of patients with seasonal allergic rhinitis in practical health care is the main task of improving the quality of life. The effectiveness of these programs can only be assessed using objective and laboratory (immunological and allergological) methods of examining patients. The study of the nature of immune disorders of effector cells as a result of exposure to an allergen, forming the development of tolerance to modern methods of therapy for severe seasonal AR, was the basis of this study. Subsequently, the data obtained can be used as a supplement to the standard allergological examination. At the same time, we can evaluate all the advantages of pathogenetic and restorative therapy of AR.

One of the promising and effective methods of treating IgE-mediated diseases is the use of monoclonal antibodies to IgE (omalizumab). Currently, monoclonal antibodies to are registered for the treatment of moderate and severe forms of atopic bronchial asthma. The high cost of the drug limits its use in milder forms of bronchial asthma, as well as in allergic rhinitis. However, there are a number of studies confirming the effectiveness and safety of this drug in patients with urticaria, hay fever, insect and latex allergies, taking into account the atopic mechanism of development of these diseases. The prospect of using monoclonal antibodies as anti-inflammatory therapy for severe seasonal allergic rhinitis in practical health care, in our opinion, seems possible and has a right to exist. In this study, for the first time, a treatment regimen for severe seasonal





allergic rhinitis with monoclonal antibodies to is proposed and some mechanisms of their anti-inflammatory action are reflected, expanding the possibilities of pathogenetic therapy.

### Conclusions

A staged treatment and diagnostic algorithm for managing children with chronic adenotomy, hypertrophy of the pharyngeal tonsil and AR in combination with BA (including anamnestic, clinical, allergological, functional-diagnostic stages and study of the quality of life) has been developed, allowing to determine indications for adenotomy. Children with chronic adenotomy, hypertrophy of the pharyngeal tonsil and AR in combination with BA have a hereditary burden of allergic diseases and a high infection index. The clinical course of chronic adenotomy in children with AR and BA is characterized by frequent relapse and torpor to traditional methods of treatment. In 36.7% of cases, chronic adenotomy contributes to the formation of pathology from the middle ear, pharynx, nasal cavity and ONP. An inversely proportional correlation was found between the quality of life indicators and clinical symptoms in children with AR and chronic adenoiditis, which can be used to evaluate the therapy being administered. It has been proven that timely adenotomy in children with AR and BA significantly improves the quality of life of patients, their physical and emotional activity. 4. Timely adenotomia in children with chronic adeconditis, hypertrophy of the pharyngeal tonsil and AR in combination with BA has a stable positive effect on the course of BA and AR, leads to a reliable decrease in the frequency of sensitization to tree pollen allergens (from 60\*6.6% to 37\*6.6%), cereal grasses (from 59\*6.6% to 45\*6.8%) and to weed allergens (from 52±6.7% to 28\*6.2%), and as a consequence, a reduction in the period of exacerbation and and/or relief of clinical manifestations of polliosis, prevents further progression of the disease.

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