



## **QUALITY OF LIFE OF PATIENTS WITH BRONCHIAL ASTHMA.**

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### **Abstract**

Bronchial asthma (BA) is a chronic inflammatory disease of the respiratory tract with multiple pathophysiological mechanisms leading to recurrent episodes of bronchoconstriction and structural changes in the bronchi. BA is widespread among children and adults. More than 235 million people worldwide suffer from this pathology. In the first year of life, the incidence of BA is higher in boys, in the period from 12 to 14 years, girls "catch up" with their peers in this indicator, and later women suffer more often than men. Childhood BA is a difficult to manage disease due to age-related features. It is characterized by dynamic clinical manifestations, a range of risk factors different from adults, limitations in the appointment of drug treatment and the use of functional diagnostics. Despite the introduction into practice of modern consensus documents forming the main directions of therapy and preventive measures for childhood BA, the existing insufficient level of control over the nosology determined the need to identify a new term "endotype", which combines the genetic and epigenetic components of BA. Poor disease control, according to experts, is mainly associated with genetic characteristics, the impact of risk factors and low patient adherence to treatment. Although mild forms of BA are mainly found in the population, the greatest medical and social significance is attributed to moderate and severe forms of the disease, which is due to the serious direct and indirect economic costs associated with them due to frequent exacerbations and the presence of disabling forms.

### **Introduction**

Modern medicine cannot change the genetic characteristics that are fundamental to the development of asthma in a particular child, but it seems possible to determine the most significant epigenetic risk factors and offer parents an algorithm of preventive measures, as well as to increase compliance with the help of educational programs. To assess the effectiveness of measures taken to reduce the incidence of



asthma-like symptoms (ALS) in the population, a dynamic analysis of the epidemiological characteristics of asthma is necessary using standardized programs, the largest of which in pediatrics is the International Study of Asthma and Allergies in Children - International Study of Asthma and Allergies in Childhood (ISAAC). The ISAAC methodology allowed us to record the prevalence of allergic diseases (A3) within countries, compare regional indicators obtained regardless of national characteristics of disease classification, diagnostic criteria, and level of medical care [68, 174]. It involves questioning two cohorts corresponding to first- and eighth-grade students in Russia. The age of 6-8 years characterizes the end of the preschool period, and it is the peak of asthma incidence; at this time, the influence of early childhood is expressed and the lifestyle established by parents is a priority, in connection with which a combined study of the epidemiology and prevalence of risk factors in this particular group is relevant. It is obvious that modern children do not have significant genetic differences at the population level compared to their peers born at the end of the 20th century. During this period, mainly the socio-economic and environmental conditions of everyday life have changed, including in patients suffering from asthma. Thus, it seems relevant to perform a dynamic epidemiological study of the prevalence of asthma at the end of the preschool period, which is the peak of the disease, using the standardized ISAAC methodology. According to modern concepts of the endotype of asthma and the role of epigenetic influences, a parallel assessment of the trends in the occurrence of risk factors both over the past ten years and depending on the severity of the nosology is justified.

The aim of the study: To determine the main trends in the prevalence and risk factors of bronchial asthma in first-graders using standardized methodology.

Objectives of the study. To study the prevalence of bronchial asthma in first-graders. To determine the main trends in bronchial asthma in first-graders over the past 10 years. To analyze the frequency of risk factors in primary school children with mild and moderate bronchial asthma. To compare the incidence of risk factors among primary school children with bronchial asthma in 2012 and 2022.

Results of the study . For the first time, based on the ISAAC methodology, the epidemiological characteristics of bronchial asthma in first-graders born in the 21st century were studied; with a high prevalence of asthma-like symptoms, especially in boys, mild rarely recurring forms prevailed. Bronchial asthma was diagnosed in



4.2% of students. The dynamics showed a decrease in the incidence of current manifestations mainly due to intermittent variants of bronchial asthma without combined allergic pathology, the preservation of the prevalence of stress bronchospasm and persistent forms of bronchial asthma with concomitant allergic diseases. For the first time, it was shown that the plateau of most epidemiological indicators of bronchial asthma in the following ten years was replaced by a marked decrease in the frequency of current symptoms with a significant increase in the level of established diagnoses. The first comparison of risk factors for mild and moderate bronchial asthma in modern primary school children showed that significant factors for more severe disease include prevalence and intensity of passive smoking, unfavorable characteristics of housing conditions in infancy. For the first time, during the dynamic assessment of the spectrum of risk factors for bronchial asthma, it was found that over the past period, against the background of improving the socioeconomic status of families, the impact of controllable factors has decreased: the total indicator of allergen load inside the house, the incidence of daily contact with cigarette smoke have decreased, and nutritional stereotypes have changed. Among modern first-graders, a high prevalence of asthma-like symptoms has been registered with hypodiagnosis of bronchial asthma, which reflects the need for more active use of educational programs. The level of control and the proportion of persistent forms of the disease combined with other allergic pathology have not changed over the past ten years, which requires improvement and implementation of a personalized approach to the management of bronchial asthma. The severity of bronchial asthma is determined by controlled epigenetic factors in the form of intense exposure to cigarette smoke, unfavorable housing conditions in infancy. The obtained dynamics of the eliminated risk factors for bronchial asthma indicate the effectiveness of the preventive comprehensive programs introduced into practice and suggests their improvement given the high incidence of passive smoking. The incidence of asthma in the Tomsk region has increased by 1.6 times over the past ten years. At the same time, the rates of hospitalized morbidity and the number of emergency calls have decreased by 2.4 and 1.3 times, respectively, indicating an increase in the detection of the disease and the introduction of asthma control technologies into real clinical practice. The highest level of knowledge of regulatory documents (OSHA, industry standard) for the care of patients suffering from asthma is established for specialist doctors



(pulmonologists, allergists-immunologists), while this category of doctors is characterized by the full implementation of the basic provisions for the diagnosis, treatment and prevention of bronchial asthma. Compared to district physicians, general practitioners are more committed to meeting medical care standards (monitoring PEF, studying the function of external respiration, keeping self-monitoring diaries). The highest efficiency of patient management from the position of the dynamics of clinical and functional parameters of the disease and the level of asthma control was established for patients observed by a specialist physician (pulmonologist, allergist). If general practitioners and district therapists comply with all the requirements of regulatory documents (STMA, industry standard), the level of disease control is comparable with similar parameters of the group of patients observed by a specialist physician (pulmonologist, allergist-immunologist). The quality of life of patients with asthma was the highest in the group observed by a specialist physician, while no significant differences in this parameter were found when observed by a general practitioner and a district physician. The most appropriate (taking into account regional characteristics) is the management of patients suffering from asthma at the primary care stage by a district doctor and a general practitioner, subject to monthly monitoring of the level of disease control; however, in the absence of positive dynamics or a decrease in this parameter, a consultation with a specialist doctor is necessary.

Conclusions. The most appropriate approach at the outpatient stage (taking into account regional characteristics) is to manage patients suffering from asthma by a district physician and a general practitioner, subject to monthly monitoring of the disease control level. A consultation with a specialist physician with a specialized examination and identification of risk factors for uncontrolled disease progression is necessary in the absence of positive dynamics or a decrease in the disease control level. The process of conducting "Asthma Schools" should be based on the principle of "training the trainers": specialist physicians train primary health care physicians who directly conduct classes with patients. Some of the training modules, primarily mastering practical skills (using inhalers, peak flowmetry technique, keeping self-monitoring diaries) should be delegated to the level of mid-level health workers. This approach to the educational process will allow covering the largest proportion of patients with asthma.

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