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STUDYING THE INCIDENCE OF ALLERGIC DISEASES AMONG CHILDREN LIVING IN DIFFERENT REGIONS

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Abstract. Science and medicine have not yet made accurate conclusions about why allergies can develop in children. However, there are certain factors that contribute to the development of allergic reactions in a baby. Allergy is not a disease in the usual sense of the word. Allergy is a very strong reaction of the child's immune system, which occurs exclusively with repeated contact with an irritant (allergen). This is the complexity of the diagnosis of pathology. At the first contact with an allergen, the immune response does not always manifest itself.

Keywords. Allergy, disimmunoglobulinemia, antigen, pregnant women, cytokine.

Introduction. So, for example, if a mother during pregnancy abused foods that are famous for allergens - for example, nuts, citrus fruits, honey, smoked meats, then it is quite possible that the newborn will have signs of allergies. If the mother refused breastfeeding or its duration was extremely short, the allergy can manifest itself in all its glory. After all, allergy is the body's immune response, and if the child does not receive the necessary antibodies from the mother, then the risk of developing the disease increases. It can also be provoked by a wide variety of food habits of the child - sweets, chocolate, fruits, especially tangerines and oranges. The allergens contained in these products can provoke sensitization in the child - the development of hypersensitivity to such substances. As a result of the immune response, the body reacts violently to the allergen, and with its subsequent use, an allergic reaction develops. Among the many other reasons that can provoke the development of allergies, one can single out frequent infectious diseases, constant contact with allergens - dust, animal skin, household chemicals, including baby skin care(1).

High antigenic loads significantly increase the risk of atopy formation: mother's smoking, toxicosis, irrational drug therapy of pregnant women, exposure to occupational allergens, unilateral carbohydrate nutrition, abuse of foods with obligate food allergens, etc. The exclusion of these moments is an important preventive factor (2,3).

The links of the complex chain of an integrated approach to the treatment of allergic diseases, in addition to adequate basic therapy and the achievement of immunological tolerance, are preventive measures and the exclusion of the effect of triggers (5). Immunoprophylaxis is undoubtedly one of the most important links in the complex therapy of patients with allergic diseases. However, significant success can be

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achieved only by making up all the links of this important chain: to carry out fully and timely preventive measures and the elimination of trigger factors (6).

Analyzing the literature data on the impact of allergens in rural children and the manifestation of allergic diseases, despite all the variety of treatment methods, the number of patients with allergic diseases is increasing every year all over the world. In addition, more and more children with immunological disorders are identified - dysimmunoglobulinemia, imbalance in the cytokine system, etc. Therefore, the correction of disorders in the immune system in such patients by selecting the most optimal methods of treatment is an urgent problem (7).

Research in recent years has proven that allergy symptoms should not be considered the only marker of allergic disease (8). Allergic inflammation and sensitization may not manifest clinically for a long time, but they are necessarily present, contributing to the progression of allergic diseases (9).

Of course, treatment tactics depend on the stage of the disease. If during the period of exacerbation the main therapeutic task is the elimination of acute allergic reactions, then during the period of remission it is to prevent progression and prevent relapse by changing the general reactivity and enhancing the ability to respond appropriately (10). In addition, in patients with allergic diseases, the use of non-drug methods of therapy and rehabilitation is now becoming increasingly important, given their good combination with standard treatment regimens and the practical absence of side effects (12).

Dysfunction of the immune system is manifested by a decrease in the resistance of children to infectious agents, a decrease in the activity of the immune system. In the history of patients with a severe form of atopy, frequent exacerbations of the foci of the infectious process are observed. Immunodeficiencies in all parts of the immune system against the background of suppression in the system of T cell regulation in moderate to severe and severe course of the disease leads to the development of an autoimmune component (12).

In recent years, a significant role in the formation of the body's immune response has been assigned to the formation of the intestinal normal microflora. This process, which occurs in the first year of a child's life, has a long-term effect, laying down the characteristics of the body's immune response to external infectious and food antigens, predetermining the development of a particular pathology in the future. The process of recovery of the intestinal micro-biocenosis in a child is individual and depends on many factors: the state of health of the mother, the method of delivery, the type of feeding, the use of antibiotics, etc. (14). A decrease in the number of lactobacilli and bifidobacteria can negatively affect the formation of immune defense processes, predispose to the development of food allergies and inflammatory bowel diseases (11). By controlling the functional state of the intestines of a child during the first months of life, it is possible

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to prevent the realization of a hereditary predisposition to allergies and the vaatopic phenotype (15).

The ability to protect a child predisposed to atopy from the influence of provoking factors can prevent its implementation into the phenotype of an allergic disease. Prevention of allergic diseases should be provided with a wide variety of measures and carried out at all stages of a person's life, starting from the prenatal period (16).

Diagnosis and treatment of child allergies is often a real quest for specialists, because the manifestations of allergic diseases in children are diverse, moreover, they often "hide" under other diseases or occur simultaneously with them. So, for example, it is difficult to diagnose allergic enteropathy, since it is easily disguised as the manifestation of other diseases, for example, colic or dyspepsia. However, there are the most frequent manifestations of the disease, which make it possible to more accurately determine their cause.

So, for example, rhinitis symptoms (nasal congestion, sneezing, runny nose) indicate a respiratory (respiratory) allergy in response to the ingress of an allergen into the mucous membrane of the respiratory tract. In more severe cases, respiratory allergy is accompanied by a dry obsessive cough, shortness of breath, wheezing. And bronchial asthma becomes a kind of "peak".

Skin rashes on the cheeks, bends of the elbows and knees, behind the ears, around the eyes and wings of the nose, on the buttocks signal allergic dermatitis, which in children is often provoked by food, cold and drug allergies.1,4

If the child's eyelids turn red, tears are flowing profusely (while he is in a normal mood), mucus in the corners of the eyes, itchy eyes - all this can be the result of allergic conjunctivitis.

But the most dangerous symptoms are anaphylactic shock, an immediate type of allergic reaction that requires urgent medical attention. These include pallor, clammy cold sweat, shortness of breath, seizures or twitching of parts of the body, involuntary urination and defecation, loss of consciousness, shortness of breath, and decreased heart rate.

According to the World Health Organization (WHO), allergic diseases are currently one of the most significant problems, especially in pediatrics. In children, this pathology ranks second in prevalence. At the same time, there is an increase in the frequency of severe allergic reactions and an increasingly early onset of clinical manifestations. In this regard, timely and qualified diagnosis of allergic pathology in children is becoming the most urgent (17).

The growing prevalence of allergic diseases among children and adolescents remains one of the most important medical and social problems and causes a serious burden on the health budget of many countries of the world (14). Allergic diseases

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negatively affect the physical and psychological state, social life, school performance and reduce the quality of life of both the patients themselves and their families (16).

However, despite the high incidence of morbidity, little attention is often paid to the problem of allergies: most pediatric patients either do not receive the necessary therapy at all, or are treated from time to time, taking symptomatic drugs; in addition, self-medication is widespread.

In recent years, domestic and foreign researchers have published works on the clinical and immunological aspects of allergic diseases in children, the prevalence and intensity of these diseases in the child population, various methods of treatment, prevention of complications, treatment methods, prevention of complications and prevention of these pathologies.

The results obtained on the development of new methods for the diagnosis of allergic diseases in children, identified risk factors for the development of allergic diseases, including food allergies in children.

However, the research was mainly carried out in a hospital setting with an already developing pathological state, pre-pathological conditions were not taken into account, the relationship between risk factors for the development of allergies with living conditions and the ecological conditions of the region, there was practically no comprehensive, conceptual approach to the study of the formation and development of allergic diseases in rural areas. where there are no industrial enterprises and a sufficient allergenic background of the population, including children. In addition, there are few epidemiological, comprehensive studies to study the prevalence and intensity of detection of allergic diseases in rural areas of the republic. There are rare works on a comprehensive study of the prevalence of these diseases, clinical, immunobiological aspects of allergic diseases in children.

In this regard, research on a conceptual approach to a comprehensive clinical, immunological, medical and social study of allergic diseases among rural children, as well as the development of new criteria for early diagnosis, prognosis of their course and outcome is relevant and in demand.

Health disorders, in the medical sense, mean the onset, recurrence and progression of diseases. According to research by a number of authors, in the structure of the general morbidity in children aged 0 to 14 years, the 1st place is occupied by diseases of the respiratory system (50.1%), the 2nd - by diseases of the digestive system (6.5%), 3rd - diseases of the eye and its accessory apparatus (5%) [6; 7]. It should be emphasized that in the structure of the general morbidity of children, respiratory diseases consistently occupy the 1st place. According to L.I. Dziubich et al., Acute respiratory infections in children are the most common reason for parents to visit a children's clinic and account for about 90% of all childhood diseases [8].

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The data from monitoring the physical development and health of children in preschool educational institutions indicate that only 17.3% of children can be considered absolutely healthy, 29.4% have functional abnormalities, 52.8% suffer from chronic diseases in the stage of compensation and 0.5% - chronic diseases in the stage of subcompensation [5].

In the structure of chronic diseases of older preschoolers, the first place belongs to diseases of the surgical sphere [3]. In second place are chronic diseases of the ENT organs (hypertrophy of the tonsils and adenoids of the II-III degree, chronic rhinitis, sinusitis, otitis media). In third place are diseases of the nervous system (episyndrome, hypertensive-hydrocephalic syndrome, the consequences of infantile cerebral palsy).

One of the most common pathologies among the child population is allergic diseases, which are a serious medical and social problem [4]. In terms of prevalence, severity of the disease, the level of socio-economic damage, the cost of treatment, allergic diseases were included in the first three groups of pathologies in the structure of human diseases. According to modern scientific data, the prevalence of bronchial asthma, atopic dermatitis, and allergic rhinitis is noted in the structure of allergic diseases.

In a state of homeostasis, most hematopoietic progenitor cells are retained inside the bone marrow, only a small part of them continuously leaves its limits and enters the peripheral blood. Leukocytosis is a well-studied pathophysiological mechanism aimed at resisting infection, due to the gradual release of cellular elements from the bone marrow. Mobilization of CD34 + cells occurs when the balance between attachment and release of stem cells is imbalanced. If attachment is provided by the specific architectonics of the bone marrow, adhesion molecules and the production of chemokines that hold phenotypically immature cells in the bone marrow, then mobilization is the result of the action of “peripheral” chemokines (IL-8, etc.) and remodeling of the matrix and basement membrane by matrix enzymes (collagenase B or matrix metal proteinase-9 (MMP-9), etc.) [4]. The concept of circulating stem cells was first presented at the beginning of the 20th century by A.A. Maksimov [16], much later their presence in circulation was experimentally proved [15]. Data on the kinetics of CD34 + cells against the background of the inflammatory process are scarce and contradictory. For example, F. Mastrandrea et al. (2005) report that in patients with allergic inflammation, the content of circulating CD34 + cells is significantly higher than in patients with infectious fever and donors [16]. Other researchers have found that in patients with allergic diseases, both during remission and during an exacerbation, compared with healthy individuals comparable in gender, the level of CD34 lymphocytes in the peripheral blood does not change [1, 6, 8]. In patients with acute viral hepatitis B, C, B + C [5, 13], in children with septic complications of chemotherapy for hemoblastosis [9] and acute intestinal infection [10], as well as against the

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background of systemic inflammation [16], a significant increase in phenotypically immature cells in circulation and a direct correlation with the level of C-reactive protein [11]. The lack of patient stratification by the severity of inflammation, the heterogeneity of the groups and the average level of evidence (there are no multicenter studies on this issue) do not allow judging the patterns of mobilization of phenotypically immature cells.

Taking into account the universality of the mechanisms of inflammation that do not depend on the etiology of the pathological process, as well as relying on the results of our own research and the above data of other authors, we formulated a hypothesis that the severity of the inflammatory response correlates with the level of CD34 + cells in the bloodstream.

Conclusion. If the baby has a predisposition to allergies or the disease has already been diagnosed, then a number of measures must be taken to reduce the risk of recurrent attacks. For example, keep breastfeeding as long as possible by following a self-sufficient hypoallergenic diet. Be careful when introducing new foods into the diet. Refuse household items in which allergens can accumulate: carpets, curtains, old bedding, books. Carry out wet cleaning every day using special hypoallergenic household chemicals. Use washers and humidifiers. And also dress the baby in clothes made of hypoallergenic fabrics.

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