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E: ndmuz@mail.ru
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ТИББИЁТДА ЯНГИ КУН
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NEW DAY IN MEDICINE

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БОЛАЛАР ОРАСИДА АЛЛЕРГИК КАСАЛЛИКЛАР ШАКЛЛАНИШИ ВА РИВОЖЛАНИШИНИНГ ИММУН ТИЗИМ КЎРСАТКИЧЛАРИ

Ачилова Д.Н. https://orcid.org/0000-0002-9784-0190
Нуралиев Н.А. https://orcid.org/0000-0001-8374-7211

Абу али ибн Сино номидаги Бухоро давлат тиббиёт институти Ўзбекистон, Бухоро ш., А.Навоий кўчаси. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Резюме***

Аллергик касалликлар шаклланиши ва ривожланиши бевосита иммун тизими фаолияти билан боғлиқлиги исботланган. Ушбу тизимнинг тутган ўрни кўрсатиб берилган бўлса ҳамки, иммун тизим турли бўғинларининг ушбу патология ривожлангандаги ўзгаришлари охиригача ўрганилмаган. Ушбу мақолада иммунологик фаол омиллар ва ситокинлар орқали болаларда аллергик касалликларни фаол кечишини эрта ташхислаш бўйича тадқиқотни баён этади.

Калит сўзлар: Аллергик касаллик, гуморал иммунитет, цитокин, иммуноглогбулин, иммун тизим.

ИММУННАЯ СИСТЕМА ПОКАЗАТЕЛИ ФОРМИРОВАНИЯ И РАЗВИТИЯ АЛЛЕРГИЧЕСКИХ ЗАБОЛЕВАНИЙ У ДЕТЕЙ

Ачилова Д.Н. https://orcid.org/0000-0002-9784-0190
Нуралиев Н.А. https://orcid.org/0000-0001-8374-7211

Бухарский государственный медицинский институт имени Абу Али ибн Сины, Узбекистан, г. Бухара, ул. А. Навои. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Резюме***

Доказано, что формирование и развитие аллергических заболеваний напрямую связано с активностью иммунной системы. Хотя показана важная роль этой системы, изменения различных звеньев иммунной системы при развитии этой патологии до конца не изучены. В данной статье описано исследование по ранней диагностике активного течения аллергических заболеваний у детей с помощью иммунологически активных факторов и цитокинов.

Ключевые слова: Аллергическая болезнь, гуморальный иммунитет, цитокин, иммуноглобулин, иммунная система.

IMMUNE SYSTEM INDICATORS OF THE FORMATION AND DEVELOPMENT OF ALLERGIC DISEASES AMONG CHILDREN

Achilova D.N. https://orcid.org/0000-0002-9784-0190
Nuraliev N.A. https://orcid.org/0000-0001-8374-7211

Bukhara State Medical Institute named after Abu Ali ibn Sina Uzbekistan Bukhara, A.Navoi st. 1 Tel: +998(65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Resume***

It has been proven that the formation and development of allergic diseases is directly related to the activity of the immune system. Although the important role of this system has been shown, the changes of different joints of the immune system during the development of this pathology have not been studied to the end. This article describes a study on the early diagnosis of the active course of allergic diseases in children by means of immunologically active factors and cytokines.

Key words: Allergic disease, humoral immunity, cytokine, immunoglobulin, immune system.

Relevance

Allergic rhinitis is widespread around the world, and 30% - 50% of the population currently suffer from this disease. In the development of this pathology, in addition to the influence of medical-biological and sanitary-hygienic factors, environmental factors also play an important role. The fact that atmospheric air pollution is the cause of the development and recurrence of allergic rhinitis is confirmed by the results of research studies of scientists [3,5].

The beginning of the 21st century was characterized by the growth of allergic diseases (AK). The widespread prevalence of allergic diseases (more than 20% of the population) has turned the allergy problem into a global medical and social problem. Allergy is called a "disease of civilization". The formation and spread of allergic diseases in the world are caused by the influence of external factors, emergence of new allergens, disruption of microecology (flora of intestines, skin, mucous membranes), and stress. Among the most common etiologically important allergens plant dust is of particular importance, and now more than 700 of their types have been identified [1,3]. The spectrum of allergens is expanding due to the heterogeneity of allergic diseases, the interaction of genetic factors and environmental factors. Allergy is derived from the Greek words "allos" foreign and "ergo" - effect, and it means the ability of the body to have a special effect on foreign substances [2,4,7].

According to WHO data, allergic diseases affect 30% of the world's population, and the incidence rate varies greatly in different countries. Allergic diseases are 30 times more common than tumors and 2000 times more common than rheumatism.

spread [2,4]. The spread of allergic diseases of the respiratory tract is affected by the specific characteristics of the climate and geographical conditions. The prevalence of the disease is not the same among rural and urban populations . [4,5]. There are 10 times more urban residents than rural residents among the patients who applied to the republican and regional treatment facilities. Ecology is also very important here. The spread of allergic diseases in different parts of the republic is not uniform. In the southern regions of Kazakhstan, pollinosis was observed in 10-15 percent of the population, while in the north it was recorded in only 1 percent of the population. Taking into account the great importance of preventive measures in allergic diseases, the World Health Organization paid special attention to the development of a special health-recovery complex.

The purpose of the study. Development of optimal solutions for early diagnosis and treatment of allergic diseases in children.

Material and method

Vobkent, Jondor and Bukhara districts of the Bukhara region, due to the density of the population and the large number of people in these districts, research methods were conducted in these districts. Allergic children from 3 to 12 years of age living in these districts were examined. During the study, according to the tasks, 905 children were under our control, which included various manifestations of allergic diseases, the age indicators of children are shown in Table 1).

To select a group of sick children, we used the following criteria for inclusion and exclusion of sick children during the study period.

To select a group of sick children, we used the following criteria for inclusion and exclusion of sick children during the study period.

A study was carried out on the basis of the clinical characteristics of the diagnosis of allergic diseases. To solve the specified tasks, we used a set of special research methods (Table 2).

Result and discussion

Humoral immunity and cytokine status of 3-12-year-old children diagnosed with allergic diseases were evaluated, clinical-immunological aspects of these diseases, certain patterns of changes in these indicators were determined. Based on these, additional diagnostic and prognostic criteria were created for early diagnosis of the disease, the perspective of its end, and recommended for health care practice.

At the next stage, the changes of these immunological parameters in the dynamics of disease treatment were studied and evaluated. Since the treatment complex is presented in detail in chapter II of the dissertation, we did not find it necessary to dwell on it.

The obtained results showed that before the treatment, the concentrations of the main immunoglobulins in the blood serum of 3-7-year-old and 8-12-year-old children changed differently compared to the indicators of the control group, and a quantitative imbalance was observed. This

condition is practically the same in both age groups, and only the intensity of change in IgE level is significantly higher (R<0.05) in 8-12-year-old children compared to the comparable age group (Table 3).

Table 1

Examined age levels of children in the study.

Children's age	Research methods			
	Research		Control	
	Number of patients	%	Number of children	%
3 young	91	10.4	6	12
4 years old	140	15.4	4	8
5 years old	110	12.1	7	14
6 years old	64	7.07	5	10
7 years old	69	7.6	6	12
8 years old	72	7.9	2	4
9 years old	69	9.2	4	8
10 years old	64	10.1	6	12
11 years old	87	9.6	7	14
12 years old	96	10.6	3	6
Total	905	100	50	100

Table 2

Verification methods used during the research

Inspection methods	Research	Control
Clinical blood test	60	25
Biochemical blood test	60	25
Immunological examination	60	25

Table 3

Description of changes in the treatment dynamics of the amount of immunoglobulins in the blood serum of children of different ages with allergic diseases in g/l.

Indicators	**Age groups**	**Control group, n=25**	**The results obtained**	
			Before treatment, n=30	**After treatment, n=30**
IgA , g/l	3-7	1.22±0.07	0.6 9 ±0.01	0.83±0.01*∧↑
	8-12		0.79 ±0.09	1.56±0.13*∧↑
IgM , g/l	3-7	1.02±0.07	1.79 ±0.07	1.18±0.06*∧ ↓
	8-12		1.72 ±0.07	1.20±0.05*∧ ↓
IgG , g/l	3-7	8.01±0.21	6.40 ±0.16	8.31±0.12*∧↑
	8-12		6.31 ±0.16	7.35±0.23*∧↑
IgE , g/l	3-7	24.46±1.05	122.98 ±5.68	34.73±1.00 *∧ ↓
	8-12		150.74 ±5.83	34.41±2.99 **∧ ↓

*Note: *-symbol of reliable differences between main and control groups; ∧ is a sign of a reliable difference between pre-treatment and post-treatment parameters; ↑, ↓ - directions of changes.*

In both age groups, it was found that treatment measures had a positive effect on immunological parameters. Changes from pre-treatment scores to post-treatment data were positive in all cases. This shows that the drugs included in the treatment complex were selected adequately. If we analyze the obtained numbers, the amount of IgA decreased reliably from the data of the control group before the treatment (R<0.05), and after the treatment it increased reliably (R<0.05).

For both ages is 1.20 times (up to 0.83±0.01 g/l) and 1.97 times (up to 1.56±0.13 g/l), respectively, compared to pre-treatment parameters. In 3-7-year-old children, the post-treatment results did not reach the norm, while in 8-12-year-old children, this parameter was within the norm. This is due to the fact that the treatment was more effective in 8-12-year-old children, in whom an adequate response to the pathological condition was observed due to the fact that the immune system was fully formed.

Practically the same result was obtained for IgM in both age groups, opposite results were obtained regarding the dynamics of changes in IgA parameters, that is, after treatment, the concentration of IgM in blood serum decreased (R<0.05) and was within normal limits. Differences between age groups were significant (R<0.05) for post-treatment parameters of IgA, but no such difference was observed for IgM.

In blood serum increased reliably (R<0.05) after treatment, while in children aged 3-7 years this immunoglobulin increased to normal limits (up to 8.31±0.12 g/l, R<0.05), In 8-12-year-old children, this parameter approached the normal limits (up to 7.35±0.23 g/l, R<0.05). In both age groups, treatment has a positive effect on the concentration of IgG, increasing its amount. No differences in this parameter between age groups were detected after treatment. Therefore, no age difference was found in the results of the treatment.

Thus, the concentrations of immunoglobulins in the blood serum of children of different ages with allergic diseases changed quantitatively after the treatment measures, and the imbalance caused by the disease was restored. The amount of immunoglobulins in both age groups changed positively (R<0.05). In age groups, IgA significantly increased after treatment to 1.20 and 1.97 times (R<0.05-0.001), IgG to 1.30 and 1.16 times, respectively (R<0.05). , the amount of IgM reliably decreased - up to 1.52 and 1.43 times, respectively (R<0.5). It is worth noting that, in addition to average indicators, practically all individual indicators also increase.

Summary

The study of the concentration of cytokines in the blood serum of 8-12-year-old children diagnosed with allergic diseases showed that the directions of quantitative changes of cytokines in the group of sick children were different compared to healthy children, if the amount of IL-4 and IL-8, which supports inflammation, was up to 3.49 and 3.72 times, respectively. significantly increased (R<0.001), the concentration of IL-10 increased reliably up to 2.32 times (R<0.001). This result helps to solve optimal solutions for early diagnosis of allergic diseases in children .

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