

GENERAL PRINCIPLES OF DIAGNOSIS AND TREATMENT OF FOOD ALLERGY IN CHILDREN AT DIFFERENT AGE PERIODS

Solieva Mavlyuda Odilzhonovna, Arzibekova Umida Abdikadirovna,

Andijan State Medical Institute.

✓ Resume

The prevalence of food allergy (PA) in the population is 1-2.5%, the highest frequency of this pathology is observed among children of the first 2 years - 6-8%, in older age groups its prevalence decreases and in adults it is about 2%. According to the WHO, about 30% of the world's population has one or another allergic reaction or disease.

External factors leading to an increase in the incidence of PA include changes in the diet in economically developed countries over the past decade, as well as changes in the environment. It is assumed that the influence of the environment, including the microbial environment, especially - at critical periods of life - can directly change the type of host immune response.

Key words: diet therapy, childhood, food allergy, immune disorders.

ОБЩИЕ ПРИНЦИПЫ ДИАГНОСТИКИ И ЛЕЧЕНИЯ ПИЩЕВОЙ АЛЛЕРГИИ У ДЕТЕЙ В РАЗЛИЧНЫЕ ВОЗРАСТНЫЕ ПЕРИОДЫ

Солиева М.О., Арзибекова У.А.,

Андижанский государственный медицинский институт.

✓ Резюме

Распространенность пищевой аллергии (ПА) в популяции составляет 1-2,5%, наибольшая частота данной патологии отмечается среди детей первых 2-х лет - 6-8%, в старших возрастных группах ее распространенность уменьшается и у взрослых составляет около 2%. По данным ВОЗ около 30% населения имеют те или иные аллергические реакции или заболевания.

Внешние факторы, ведущие к увеличению частоты ПА, включают изменение рациона питания в экономически развитых странах за последнее десятилетие, а также изменения окружающей среды. Предполагается, что влияние среды, в том числе и микробного окружения, особенно - в критические периоды жизни - могут прямо изменять тип иммунного ответа хозяина.

Ключевые слова: диетотерапия, детский возраст, пищевая аллергия, иммунная нарушения.

БОЛАЛАРНИНГ ТУРЛИ ЁШ ДАВРЛАРИДА ОЗИҚ - ОВҚАТ АЛЛЕРГИЯЛАРИНИНГ ТАШХИСИ ВА ДАВОЛАШНИНГ УМУМИЙ ТАМОЙИЛАРИ

Солиева М.О., Арзибекова У.А.,

Андижон давлат тиббиёт институти.

✓ Резюме

Аҳолида озиқ-овқат аллергиясининг тарқалиши 1-2,5% ни ташкил қилади, ушбу патологиянинг энг юқори частотаси биринчи 2 ёшдаги болалар орасида - 6-8%, катта ёш гуруҳларида унинг тарқалиши пасаяди ва катталарда бу тахминан 2% ни ташкил қилади. ЖССТ маълумотларига кўра, дунё аҳолисининг тахминан 30% у ёки бу аллергия реакцияга ёки касалликка чалинган.

Озиқ-овқат аллергиялари касалланишининг ўсишига олиб келадиган таъқи омилларга сўнгги ўн йил ичида иқтисодий ривожланган мамлакатларда рациондаги ўзгаришлар, шунингдек атроф-муҳитдаги ўзгаришлар киради. Атроф муҳитнинг, шу жумладан микроб муҳитининг таъсири, айниқса ҳаётнинг муҳим давларида - уй егасининг иммун жавоб турини бевосита ўзгартириши мумкин деб тахмин қилинади.

Калит сўзлар: диетотерапия, болалик, озиқ-овқат аллергияси, иммунитет бузилиши.

Relevance

Diet therapy is an important component of the complex treatment of PA, being, in fact, an etiotropic method of treatment. The main attention in the preparation of a therapeutic diet is given to the elimination of causally significant products [5]. At the same time, regardless of the period of illness, the diet should meet the physiological needs of children in basic nutrients, vitamins, and minerals. an optimal solution to this problem requires the development of a modern differentiated scientifically grounded approach. A

separate problem is the correction of the nutritional composition of the diet in older children and adolescents who have been suffering from PA for a long time and have a limited composition of diets with the exclusion of nutritionally important foods [1,6,7]. It should be noted that the timing of compliance with the elimination diet is currently not clearly defined [3]. In this regard, it is necessary to clarify the clinical and immunological criteria that determine the duration of the elimination of various products and the timing of their inclusion in the child's diet when expanding nutrition, as well as the development of approaches to

the correction of diets in patients receiving a long-term elimination diet, using modern nutraceuticals [2,4].

Thus, it is currently relevant to optimize nutritional approaches to the treatment of PA in children at different age periods depending on the clinical and pathogenetic characteristics of the disease, age, nutritional status, morpho-functional state of the digestive system, indicators of intestinal biocenosis, as well as the development of new specialized baby food products and assessment of their effectiveness [4].

Purpose of the study. Optimization of diet therapy for food allergies in children at different age periods based on the study of clinical and immunological features of the course of the disease and the state of the intestinal barrier.

Materials and methods

The paper presents the results of clinical observation, examination and treatment of 462 children aged 1 month to 17 years with various forms of PA. A separate group consisted of 51 children, examined in the neonatal period in order to assess the intestinal permeability for macromolecules.

Research results

The first manifestations of food allergy in children in 83.5% of cases occur in infancy, in almost half of cases (48.1%) - in the first half of life, and mainly have an isolated character in the form of allergic skin rashes (56.1%). In 37.2% of cases, the symptoms of food allergy for the first time are of a combined (mainly skin-gastrointestinal) nature

The main clinical form of food allergy in young children is skin-gastrointestinal (74.2% in children under one year old and 88.5% in children 1-3 years old); in older age groups, the proportion of combined manifestations of allergy involving the respiratory system increases. The overall frequency of gastrointestinal manifestations of food allergy is 84.4% according to clinical data and 92.9% according to a comprehensive examination and does not have significant differences depending on the age of patients.

The structure of sensitization in children with food allergies changes depending on age. In children of the first year of life, the main causal allergen is BCM. Explicit clinical reactions to foods containing this protein are observed in 33.9% of cases, and increased levels of IgE, IgG, IgG4 antibodies to BCM and its fractions - in 85% of the examined children of the first year of life (specific IgE - in 53.4%, IgG4 - in 58.6%, IgG - in 70.7%). Increased level of IgE to BSA and R-LH in children with food allergy in the first year of life is a marker of the severity of atopic dermatitis, and a high level of specific IgG (class 4 reaction) to CMP and its fractions is a marker of damage to the gastrointestinal system.

With age, the frequency of clinical reactions to dairy products decreases, however, the frequency of detecting specific antibodies to CMP remains quite high, amounting to 64.8% according to MAST and 36% according to ELISA (IgG4) in children aged 10-17 years, which indicates the important role of CMP as a causal allergen in older children with food allergies. Statistically significant age-related differences in the frequency of detecting elevated levels of specific IgG4 for 14 out of 24 used food allergens are found statistically significantly more

often in all age groups of children older than one year (01) than in the first year of life, polyvalent sensitization is noted.

A paradoxical increase in intestinal permeability for food macromolecules (marker protein - α -lactalbumin of human milk) during the neonatal period is observed in 60% of children with allergic manifestations at this age, which indicates a violation of the formation of the intestinal barrier. There is a correlation between the absorption of α -lactalbumin and proteolytic activity of feces, indicating that the predominance of proteolytic strains in the intestinal microflora may be a factor contributing to an increase in the permeability of the intestinal barrier. In the first year of life, children with a gastrointestinal skin food allergy against the background of the development of an allergic inflammatory process show a further increase in intestinal permeability, which correlates with the level of general and specific IgG4 antibodies to food proteins.

Immuno-morphological changes in the small intestine in gastrointestinal food allergies are characterized by an increase in the content of interepithelial T-lymphocytes with the formation of clusters - in 66.7% of patients. More significant lymphoid infiltration of the mucous membrane is observed in combined forms of food allergy with the participation of the respiratory system. Subhypotrophic and hypotrophic changes in the mucous membrane of the small intestine are found in 45.8% of children 1-3 years old and in 33.3% of children 3-17 years old. The process of maturation of the mucous membrane of the small intestine

In 97.8% of children with food allergies, disorders in the composition of the intestinal biocenosis are revealed, which are most pronounced in the first year of life. More significant dysbiotic deviations are observed in children with gastrointestinal symptoms of food allergy, with pronounced manifestations of atopic dermatitis and with polyvalent food sensitization. In the presence of gastrointestinal manifestations, the following are more often revealed: the predominance of the aerobic component of microflora over anaerobic, UPM associations, *S. aureus* p more than 105 CFU / g ($p < 0.01$); with severe cutaneous manifestations of atopy (SCORAD > 20) - dominance of coccal flora ($p < 0.01$), UPM with signs of aggression (hemolyzing *Escherichia coli*, hemolyzing enterococcus), *S. aureus*, *Candida* fungi, UPM associations ($p < 0.05$). Deficiency of bifidobacteria is observed in all age groups, most often in children of the first year of life (66.7%) and children 10-17 years old (57.1%), and does not depend on the clinical form of food allergy.

In 34.8% of children with atopic dermatitis and food allergy, bacterial sensitization is detected (IgG_i to hemolyzing *E. coli* 055 and / or *S. aureus* Wood 46), in most cases combined with the detection of the corresponding microorganism during bacteriological examination of feces. Increased index of basophil degranulation under the influence of the same bacteria is observed in 65.2% of cases and is more common in children with gastrointestinal manifestations, which confirms the role of UPM in their development.

An assessment of the selenium status of children with food allergies showed that an insufficient supply of selenium was noted in 61.2% of cases. Against the background of strict adherence to a hypoallergenic diet, a tendency towards a decrease in the supply of selenium was revealed, which emphasizes the need to correct the selenium status of children on long-term elimination diets.

At the same time, 17.9% of children with food allergies were found to have an increased level of this microelement in the blood, which requires a differentiated approach to the use of selenium-containing drugs - only in the case of a proven selenium deficiency.

Carrying out complex treatment in children with food allergy, including step-by-step diet therapy according to the developed algorithm and pharmacotherapy taking into account the peculiarities of the allergic process, in 73.5% of cases allows achieving complete, in 26.5% - partial regression of its skin and gastrointestinal manifestations. A statistically significant positive dynamics of immunological parameters in the form of a decrease in the level of IgG4 to CMP and the frequency of detecting their increased level is observed 4 months after the start of treatment in both children with complete and partial clinical remission. As a result of the treatment, 96% of children with food Allergy shows a statistically significant positive dynamics of the composition of the intestinal microflora, which is more pronounced in children with complete clinical remission, who, in comparison with children with partial remission, more often have eubiosis ($p < 0.01$), there is no grade IV dysbacteriosis, and bacteria of the genus *Klebsiella* are not detected above 103 CFU / g, less often *S aureus* and *Candida* fungi are found above 104 CFU / g ($p < 0.01$). Against the background of the normalization of the aerobic component of microbiocenosis, bifidoflora deficiency persists in 69.2% of children with partial and in 50% of children with complete clinical remission, which indicates the need for measures aimed at supporting the protective microflora.

On the basis of the data obtained on the features of the manifestations of food allergy in different age periods, algorithms have been developed for staged diet therapy for food allergies in children, with a clinical and laboratory assessment of the effectiveness of treatment at each stage.

Conclusion

For children of the first year of life, an algorithm has been created for the selection of a specialized substitute mixture, taking into account the clinical and immunological characteristics of the disease and the results of a new method for determining the level of antibodies to protein-peptide fractions of breast milk substitute mixtures - "IFA-Lacttest". Based on the data obtained on the state of intestinal permeability barrier for macromolecules in children with food allergies, it was concluded that the use of breast milk substitute mixtures based on whole protein (soy mixtures, fermented milk products, goat milk mixtures) at the first and second stages of diet therapy, even in children with mild food allergies

LIST OF REFERENCES:

1. Revyakina V.A. Epidemiology of allergic diseases in children and the organization of pediatric allergological service in Russia // *Pediatrics*. 2013. No. 4. P. 47-51.
2. Balabolkin I.I., Yukhtina N.V., Denisova S.N. Food allergy in children. M., 2016, p. 44.
3. Medical nutrition for children with food allergies. A guide for doctors / Ed. V. A. Revyakina, T. E. Borovik. Moscow: Dynasty, 2015. 38 p.
4. Revyakina V.A., Gamaleeva A.V. Prevention of food allergies in children at risk of developing atopy // *Attending Physician*. 2016. No. 1. P. 8-11.
5. Bauer C.P., von Berg A., Niggeman B. Primare alimentäre Atopieprävention // *Allergologie*. - 2014. - Vol. 27. - No 7. - P. 289-295.
5. Pichler W.J. IgE - vermittelte Nahrungsmittelallergien // *Allergologie*. - 1998. - Vol. 21.- No 9.- P. 441-450.
6. Lepp U., Ehlers I., Erdmann S., et al. Therapiemöglichkeiten bei der IgE - vermittelten Nahrungsmittelallergie // *Allergologie*. - 2012.- Vol. 25.- No 11.- P. 585-590.
7. Werfel T. Diätetik in der Allergologie // *Allergologie*. - 2010. - Vol. 23.- No 11.- P. 511.
8. Henzgen M., Vieths S., Rees I. et al. Nahrungsmittelallergien durch immunologische Kreuzreaktionen // *Allergologie*. - 2015.- Vol. 28.- No. 5.- P. 177-190.

Entered 09.11. 2020