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RISK FACTORS FOR DEVELOPING FOOD ALLERGIES

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Annotation*: Identification of risk factors for the development of food allergies are the main guidelines in the study of the features of the formation of the disease. Currently, it is generally accepted that one of the main risk factors for the development of food allergies is the genetically determined ability of the body to trigger immunopathological mechanisms of allergy development, in particular IgE-mediated reactions. [11, 23]. There is evidence that approximately half of patients suffering from food allergies either have a history of some allergic disease (hay fever, atopic bronchial asthma), or their closest relatives (parents, brothers, grandmothers) suffer from these diseases. It is believed that predisposition to atopy is controlled by certain genes, each of which encodes the possibility of realizing a specific trait of atopy.*

Keywords: *factors, development, nutritional value, risk.*

Cookson identifies 4 classes of these genes: class 1 – genes that predispose to the development of atopy in general and to hyperproduction of IgE; class 2-genes that affect a specific IgEresponse; class 3-genes that affect bronchial hyperreactivity; class 4-genes that affect a non-IgE-mediated response. As a result, these genes are independently transmitted to the offspring, and each individual has a different set of them, which further determines the features of the clinical manifestations of the disease. However, there is an opinion that the increase in the prevalence of food allergies is not associated with genetic changes, since thegene pool could not have changed much in such a short time [10]. Some studies that have shown a recent doubling of the prevalence of peanut allergies among children have considered that the environment modulates the expression of genes responsiblefor food allergies. Thus, without denying the important role of heredity in the formation of food allergies, it is necessary to emphasize that the realization of predisposition to the clinical manifestations of the disease occurs through certain environmental factors. These risk factors include active and passive smoking [1-4], socio-economic status [23], childhood infections [31], and lifestyle [4]. The development of the disease is also promoted by a high antigenic load, increased permeability of the gastrointestinal mucosa, disorders in systemic and local immunity, and changes in the nature of nutrition [15]. A certain pathogenetic influence on the formation of food allergies is exerted by perinatal risk factors, which significantly affectунной системы the development of the child's immune system . Risk factors for the development of pathology are divided into antenatal and postnatal. Antenatal risk factors include: - pathologies of pregnancy that lead to adverse effects on the fetus; - diseases of the mother during pregnancy; - smoking of the mother during pregnancy (including passive smoking); - poor nutrition of the pregnant woman (consumption of products containing a large amount of trophoallergens or long-term adherence to a hypoallergenic diet) [14]. The issue ofвопрос о the role of antibody intake in the child's body in the prenatal period and through human milk. In many studies, there are indications of the development of allergy to cow's milk proteins in children on natural feeding, associated with excessive consumption of milk and dairy products by the mother during pregnancy and, especially, during периthe lactation period [9,1-4]. For example, E. I. Kapranova [18] showed in her studies that mother's milk is completely devoid of antigenic properties, and only allergens from the mother's diet can sensitize the child. On the other hand, there is no data on studies that reliably prove that correcting the mother's diet

during pregnancy and lactation prevents the development of food allergies. At the same time, the American Academy of Pediatrics recommends that at-risk mothers avoid foods that are allergenic to their mothers in order to prevent the development of food allergies. Postnatal risk factors include: - Abnormal childbirth that leads to various violations of the child's adaptive capabilities. Thus, R. Zeiger in his works notes that with prolonged complicated labor, the risk of developing atopy in a ннewborn increases [20]. This is associated with an increased risk of fetal sensitization from the mother and a high probability of developing respiratory complications, which in itself is a risk factor. - The duration of natural feeding and the age of the child at the first contact with the allergen. The occurrence of allergy to cow's milk proteins is promoted by early transfer of the child to mixed or artificial feeding using various milk mixtures, unreasonably early (from 2-3 months) appointment of milk porridges [22]. атопическихChildren aged 3 to 6 months have a particularly high risk of developing atopic diseases. During this period, it makes sense to abandon mixtures based on soy or cow's milk in favor of hydrolyzed mixtures, if breastfeeding is not possible [8]. According to our study, 68.2% of the examined children had a hereditary predisposition to allergic diseases in close relatives. The study of food allergy risk factors revealed some of their differences in young and older children. Thus, in young children, the possibility of developing allergic reactions to food products is primarily influenced by burdened heredity (77.8%), the state of humoral immunity (transient hypogammaglobulinemia was detected in 61% of children), poor nutrition (44%) – early transfer to artificial feeding, early introduction of complementary foods. The formation of food allergies in older children is greatly influenced by previous pollen sensitization (79%) due to the similarity of antigenic structures between food and pollen allergens and poor nutrition (42%) – the use of preservatives, food dyes, histaminoliberator products (chocolate, citrus fruits, spices, smoked products, etc.).

Allergens of the most common food products Foods contain protein, carbohydrates, and lipids. The main food antigens are water-soluble glycoproteins with a molecular weight in the range of 10-60 kD. To date, no specific biochemical or immunological characteristics of food antigens are known. Comparison of the primary amino acid sequence did not reveal a special model. These proteins are resistant to acid attack, proteolysis, and digestion. The process of heat treatment of food can change the spatial structure of protein, thereby reducing the allergenicity of the food product. However, many foods have heat-stable proteins that are not destroyed by heat treatment. It is considered that allergens of milk, eggs, fish, and nuts are thermally stable, allergens of soy, celery, and cereals are partially thermally stable, and allergens of vegetables and fruits are thermolabile. Vegetables, fruits, and nuts are the most important allergens in food allergies. Moreover, these foods contain proteins that exhibit homologous molecular determinants with aerogenic allergens. Scientific evidence suggests that from about 4-6 years of age, sensitization to fruits and vegetables does not occur primarily enterally. As a rule, patients with food allergies previously have respiratory sensitization (with varying degrees of severity of clinical symptoms). This sensitization to respiratory allergens may interfere with oral food tolerance. For example, a few years ago, allergic reactions to chestnuts or avocados were unknown, but with the increase in the number of people sensitized to latex, these types of food allergies are no longer uncommon. After a detailed study of the molecular characteristics of plant and food pollen allergens, it was found that cross-reactions are responsible for more than 80% of cases of food allergies in children and adults. Especially if you carefully identify the oral-allergic syndrome, which until now is considered a harmless manifestation of allergies and is often not taken into account at all. The most common allergens for children are: cow's milk, eggs, nuts, soy, wheat, fish; and for adults – vegetables and fruits, nuts, fish, sea products, spices [10]. Cow's milk contains more

than 25 different proteins that can act as full-fledged antigens for humans, but only 4-5 of them have strong antigenic properties. Allergens of cow's milk proteins can be divided into two large groups: casein (80% of the total protein mass) and whey proteins (20%). Casein exists in a bound state with calcium phosphate in the form of water-based spherical micelles that give milk a milky white color [5].

At the same time, half of them do not react to heat-treated meat. This suggests that beef tolerance in these patients is provided by the destruction of thermally unstable bovine serum albumin and bovine gammaglobulin, which are found in both milk and beef. Milk contains a large number of thermostable allergens, and therefore heat treatment of milk does not allow it to be included in the diet of patients with sensitizationto cow's milk proteins [5]. Allergic reactions to cow's milk can develop to one or more proteins by different immunological mechanisms. Currently, types I, II, and IV of allergic reactions to cow's milk proteins have been proven [1]. Animal meat. The main allergens are: serum albumin and gammaglobulin. Meat allergies are relatively rare, as the allergenic potential of proteins is often lost during heat treatment of the product. Allergic reactions to meat are often caused by cross-reactions. For example, "pig-cat" syndrome is the result of cross-allergy between the cat's epithelium and pork meat, and "bird – egg syndrome" - between the epidermis of birds and chicken eggs. Also, enzymes (during short cooking of meat) or antibiotic residues can cause the developmentof severe reactions [18]. Allergic reactions can occur when eating sausages. At the same time, the method of cooking sausage (raw, boiled, hot smoked) is important for the development of the reaction. Proteins denatured at high temperatures are most often well absorbed by the body. Allergy when eating sausages most often develops on the added impurities (milk protein, seasonings, nuts, etc.), preservatives and dyes. A chicken egg contains at least 20 different proteins, but only 4 or 5 of them are allergens, although it is possible that other proteins in individual individuals cancause the formation of IgE antibodies [10]. Egg white is more allergenic than egg yolk, but IgE antibodies can also be produced for the latter. In the process of cooking, the complete separation of protein from the yolk is problematic. Given that the yolk usually contains a certain amount of egg protein, allergic reactions may not be associated with the yolk, but with ovomucoid, ovalbumin, ovomucin and ovotransferin contained in the egg protein. Studies by J. Bernhisel-Broadbent and Sampson have shown that ovomucoid (Gal d III) is more antigenic and allergenic than ovalbumin (Gal d I) in children with egg allergies. The allergenicity of ovomucoid is provided by its thermal and acid resistance, its high ability to glycolysis (20-25%), and its three separate domains, each of whichзан is connected by bisulfide bridges [12]. The molecular weight of avian allergens is in the ranges of 21-30 and 67-70 kD. Cross-reactions between proteinsof all bird varieties were noted [15]. However, most people who are allergic to chicken eggs, transfer chicken meat. Cereals. Cereals consumed by humans include wheat, rye, barley, and oats. Cereal flour consists of gluten, albumins, globulins and starch. For cereals, the main antigens are albumins and globulins. It is believed that asthma is caused by albumins, and food allergies are caused by globulins. Passing through the stomach, cereal proteins are exposed to pepsin and trypsin in the duodenum, so the target organ is affected by a protein called "pepsin-trypsin digested gluten". Three fractions A, B and C were obtained from pepsin-trypsin digested gluten, and three proteins were obtained from fraction B: B1, B2 and B3, the molecular weight In the fraction is 8 kD. B and C fractions were found to be toxic to the mucosa of the small intestine. Wheat can cause the development of various diseases, such as atopic dermatitis, gastrointestinal food allergy, bronchial asthma, transient gluten enteropathy, and Duhring's dermatitis [1]. The cause of celiac disease is intolerance to alphagliadin. Wheat protein is very similar in its antigenic properties to other cereal products. Wheat flour extract contains 40 antigens that can cause the formation of

antibodies. Four groups of proteins were obtained from gliadin:

In this respect, thionins act similarly to mellitin (a component of bee venom). In addition, the low molecular weight wheat allergen (15kD) is an inhibitor of □ -amylase. Wheat can also act as histamine liberator, causing pseudoallergic reactions. Rye. The main allergens of rye flour have a molecular weight of 35 and 14 kD. A rye flour allergen with a molecular weight of 14 kD induced in in vitro a significant increase in CD23 expression on the lymphocytes of patients allergic to cereals. Cross-reactions between grains and grass pollen are quite common. In addition, it is with allergic reactions to cereals that intolerance to alcoholic beverages prepared using cereals (vodka and whiskey) may be associated. Buckwheat can cross-react with rice and even with completely unexpected products, such as potatoes, peanuts, and bee venom [1-5]. J. Bernhisel-Broadbent and N. Sampson using provocative tests conducted by a double-blind method, 69 children with positive skin tests for one or more legumes found the presence of allergic reactions in 41 children (59.4%). Only 4.8% (2 out of 41) had allergic reactions to more than one type of allergen. Both of these children had a history of anaphylactic reactions to peanuts and soy beans. After two years of the elimination diet, no allergic reactions to soy were observed, but to peanuts remained the same. The rarity of clinical manifestations of cross-reactions to legumes (the appearance of symptoms after eating) is radically different from the frequency of cross-immunological reactions determined in in vitro in serum in the same patients. Immunological studies and skin tests show a significantly higher frequency of clinical intolerance. So according to J. Bernhisel-Broadbent and Sampson, in 49 out of 69 patients (71%) to two or more types of beans, therefore, taking into account the data of provocative tests, 47 out of 49 children had unjustified dietary restrictions [5]. Soy is a widely distributed legume crop, although soy beans are not used in their pure form in traditional Russian food. But in the food industry in recent years, soy flour has been included in many food products (sausages, semi-finished meat products, sweets, chocolate, etc.). In addition, soy is widely used for the preparation of infant formula and dietary nutrition for adults. Another common non – protein product derived from soy is lecithin. It is used as an emulsifier in the production of chocolate, flour products, margarine. During its production, it is very difficult to get rid of the admixture of soy protein. Therefore, patients with high sensitivity to soy may react to products containing lecithin.

Nitrates and nitrites are used as preservatives to give a persistent color to meat products. They are used in the preparation of: sausages, smoked fish, some cheeses, cheese. In addition, they can accumulate naturally in plants: beets, celery, cabbage, eggplant, lettuce, radish, melon, spinach. Sorbic acid is used as a preservative, and is used in the preparation of: soft drinks, juices, confectionery and bakery products, sausages, granular caviar, as well as for processing packaging materials. It is important to note that some dietary supplements are obtained from natural products. Patients who are intolerant to the raw material source may develop allergies to these supplements. Appendix No. 2 provides a list of additives obtained from natural sources. As a rule, the raw material source is not indicated on the label. Therefore, it is recommended that the patient receive information about the presence of a dangerous allergen in the purchased product in a hidden form опасного дляfrom the manufacturer.

Literature

1. Allergic diseases in children / ed. by M. Ya. Studenikina, T. S. Sokolova. - Moscow: Meditsina, 1986. - 288 p.
2. Al H. M. D. Food allergy in children with duodenal ulcer: dis. Kand. med. nauk / Kh. M. D.

Al. - Alma-Ata, 2001-p. 132.

3. Balabolkin I. I., Mazo V. K., Nikitina I. P. Absorption of protein antigens in the gastrointestinal tract in children with food allergies // Pediatrics. - 1988. - No. 5. - pp. 52-55.
4. Balabolkin I. I.Балаболкин, Sosnina O. B. Pishchevaya allergiya u detei i podrostkov [Food allergy in children and adolescents].
5. Baranov A. A., Abolenskaya A.V. Chronic nonspecific intestinal diseases in children / A. A. Baranov, A.V. Abolenskaya. - Moscow, 1986.
6. Borisova, I. V. Cross-allergic reactions to food products in children: dis....Candidate of Medical Sciences / I. V. Borisova, Moscow, 2000, pp. 11-13.
7. Borisova I. V., Smirnova S. V. Food allergy in frequently ill children // Vopr. det. dietetics department. - 2007. - Vol. 5. - No. 2. - pp. 11-17.
8. Borovik T. E., Makarova S. M., Kazakova S. N. et al. Mixtures based гидролизатовon protein hydrolysates in the prevention and diet therapy of food allergies in children // The Attending Physician, 2008, No. 7, pp. 22-26.
9. Abdikaxhorovna K. F. Characteristics and Immunological Status of Chronic Jaundice in Infants Born to Mothers Who Passed Covid-19 //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2022. – Т. 2. – №. 4. – С. 38-41.
10. Achilova D. N., Yomgurova O. R. CLINICAL-IMMUNOLOGICAL AND MEDICO-SOCIAL ASPECTS OF ALLERGIC DISEASES IN CHILDREN, DEVELOPMENT OF CRITERIA FOR EARLY DIAGNOSIS AND PROGNOSIS OF THE COURSE OF THE DISEASE (LITERATURE REVIEW) //British Medical Journal. – 2022. – Т. 2. – №. 2.
11. Kurbanovna S. I. THYMOGENIC IMMUNOCORRECTION OF CHILDREN WITH CONGENITAL HEART DEFECTS //ResearchJet Journal of Analysis and Inventions. – 2022. – Т. 3. – №. 1. – С. 34-43.
12. Nutfilloevna A. D. Features of Allergy Diagnosis in Children //INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES. – 2022. – Т. 1. – №. 4. – С. 217-225.
13. Nutfilloevna A. D. Modern Approaches to Allergen-Specific Diagnostics in Children with Allergic Diseases //INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES. – 2022. – Т. 1. – №. 4. – С. 231-239.
14. Nutfulloyevna A. D., Odilbekovich Q. O. VARIOUS CHANGES TO THESKIN CONDITIONS IN CHILDREN WITH ATOPIC DERMATITIS //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2022. – Т. 2. – №. 3. – С. 76-81.
15. Ramazonovna, Mukhamedova Zarifa. "Functional State of the Liver and Pancreas in Covid-19." EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION 2.2 (2022): 333-338.
16. Razzakovna, Khamraeva Dilnoza. "THE FREQUENCY OF THE SPREAD OF FUNCTIONAL CONSTIPATION IN CHILDREN IN THE BUKHARA REGION." ResearchJet Journal of Analysis and Inventions 3.1 (2022): 51-57.
17. Sadulloeva I. K. Ashurova NG CLINICAL AND IMMUNOLOGICAL FEATURES OF CONGENITAL HEART DEFECTS IN ADOLESCENT GIRLS //Europe's Journal of

Psychology. – 2021. – Т. 17. – №. 3. – С. 172-177.

18. Tukhtabayevna M. Z. DIAGNOSIS AND TREATMENT OF NECROTIZING ENTEROCOLITIS IN PRETERM INFANTS //Indonesian Journal of Innovation Studies. – 2022. – Т. 18.
19. Аллергические болезни у детей / под ред. М.Я. Студеникина, Т.С. Соколовой. – М.: Медицина, 1986. – 288 с.
20. Аль Х.М.Д. Пищевая аллергия у детей с язвенной болезнью 12-перстной кишки: дис. …канд. мед. наук / Х.М.Д. Аль. - Алма-Ата, 2001 – С. 132.
21. Балаболкин И.И. Всасывание белковых антигенов в желудочно-кишечном тракте при пищевой аллергии у детей / И.И. Балаболкин, В.К. Мазо, И.П. Никитина // Педиатрия. – 1988. - № 5. – С. 52-55.
22. Балаболкин И.И. Пищевая аллергия у детей и подростков / И.И. Балаболкин, Соснина О.Б. // Рос. аллергологический журнал. - 2006. - № 3. - С. 44-52.
23. Баранов А.А. Хронические неспецифические заболевания кишечника у детей / А.А. Баранов, А.В. Аболенская. - М., 1986.
24. Борисова, И.В. Перекрестные аллергические реакции на пищевые продукты у детей: дис.…канд.мед.наук / И.В. Борисова. – М.,2000. - С. 11-13.
25. Борисова, И.В. Пищевая аллергия у часто болеющих детей / И.В. Борисова, С.В. Смирнова // Вопр. дет. диетологии. – 2007. – Т.5. - № 2. - С. 11-17.
26. Боровик Т.Э., Макарова С.М., Казакова С.Н. и др. Смеси на основе гидролизатов белка в профилактике и диетотерапии пищевой аллергии у детей // Лечащий врач. - 2008. - № 7. - С. 22-26.
27. Матниезова З. Т. ПРИЧИНЫ ОЖИРЕНИЕ У ДЕТЕЙ И ПОДРОСТКОВ //TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI. – 2022. – Т. 2. – №. 11. – С. 36-43.
28. Хамраева Д. Р. Частота распространения и особенности течения функциональных заболеваний билиарного тракта при синдроме Жильбера //Интернаука. Молодой исследователь: вызовы и перспективы.-2020.06. – 2020. – Т. 23. – №. 170. – С. 35-38.