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Diet Therapy In Food Allergy And Fungal Pathology

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ABSTRACT

Nowadays allergic diseases are the most common diseases and affect the economic performance of different countries of the world. These diseases often affect children, adolescents and young adults, who should actively study or work. The main factors that determine the possibility of developing sensitization to various groups of allergens are the presence of exposure and the properties of a particular allergen.

Global climate changes on the planet have affected the amount of pollen of plants and fungi. The use of new technologies in the food industry has radically changed the generally accepted understanding of the composition of a particular product. It is important to identify the causative allergenic product in order to prescribe optimal diet therapy.

KEYWORDS

Food allergy, food allergens, fungi, diet therapy.

INTRODUCTION

In recent years allergic diseases are widespread and influence the economic performance of different countries. It is especially significant, that these diseases often stuck children,

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adolescents and young people who should actively study or work. The increase in the number of allergic diseases may be associated with the lack of early reliable diagnostic methods and the insufficient effectiveness of the existing methods of therapy [6].

Food allergy is an overexpressed immune response to food components, usually proteins, the manifestations of which can be varied. Food allergies can occur in the form of bronchial asthma, atopic dermatitis, and even anaphylaxis. Allergy symptoms can appear when even a small amount of food is exposed to the skin, in the gastrointestinal tract, and respiratory system.

The course and development of food allergy is influenced by many factors, including a genetically determined predisposition of the body, the influence of environmental factors, excessive exposure to antigens on the intestines, the immunomodulatory effect of viral infections and various diseases that increase the permeability of the intestinal wall for undigested proteins and other components of food substrates [8].

The question of the dynamics and profile of IgE-mediated sensitization to various allergens is very essential. The main factors that determine the possibility of developing sensitization are the presence of exposure and the properties (biochemical and physical) of a particular allergen. Global climate changes were reflected in changes in the physicochemical constants, that determine the existence of biological systems, influenced the amount of pollen, its allergenicity, and the duration of the dusting season.

In recent years, the range of plant products included in the diet has dramatically expanded. The use of new technologies in the food industry has radically changed the generally accepted understanding of the composition of a particular product. There is no way to recommend a single "standard" diet for all patients. Modern recommendations, first of all, should take into account the individual hypersensitivity of each patient to food. Very often the unjustified exclusion of a wide range of food products has a negative effect on the mental state of children, adolescents and adults.

The exclusion of certain foods from the diet of a sick young child, especially protein-rich foods that are important for his growth, the maturation of immune cells, can negatively affect his physical development. Rising sea levels and changing rainfall patterns are leading to an increased prevalence of mold allergy. Over the past 15–20 years, there has been an increase in the prevalence of food allergy, the so-called "second wave" of the allergy epidemic [4, 5].

It is important to identify the causative allergenic product in order to prescribe an optimal diet. In recent studies, it has been demonstrated that sensitization to the same product in the residents of different countries does not have identical clinical manifestations [10].

PURPOSE OF THE STUDY

Diet therapy for patients with food allergies, taking into account the allergenic properties of local food in a hot climate.

MATERIALS AND RESEARCH METHODS

We have introduced into clinical practice modified immunoblot panels of allergens RIDA qLine Allergy (Germany) for in vitro allergy

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diagnostics. Each panel contains 5 standards calibrated according to the international reference protocols "1st WHO IRP 67/86 for human IgE" and 20 allergens. This test allows you to quantitatively measure the concentration of allergen-specific IgE (IU / ml) in the blood serum by the method of immune analysis, the results are also expressed in RAST-classes. Conditional norm of concentration of allergen-specific IgE is up to 0.35 IU / ml. This concentration is identical to 1 RAST class.

RESULTS AND DISCUSSION

After a detailed anamnesis of the disease, IgE antibodies were determined in patients with allergic diseases at the age of 14-70 years (n = 58) in order to choose an appropriate diet.

With the help of food panels of allergens, 27 (47.4%) patients received negative results in the range of 0-0.9 RAST, 7 (12.3%) showed monosensitization, 23 (40.4%) - polysensitization. The average age is 30.0 ± 4.22 years.

The results of high sensitization in patients to tomato (22.4%), carrots (16.3%), potatoes, honey, peas, wheat flour (14.3%), orange and apricot (12.2%), watermelon (10.2%), peach, apple, chicken meat (8.1%), walnut (6.1%), sunflower seeds, strawberries (4.1%), peanuts, chicken protein, chicken yolk and milk (2.0%) within 1-6 RAST; no allergic reaction to coffee has been reported.

Sensitization to food allergens was revealed before the age of 18, mainly in boys (17.5%) compared to girls (12.3%), from 19 years it predominates in females in different age categories. Thus, analysis using food panels of allergens (3 knots) showed that sensitization to food allergens occurs in women (68.4%) 2.2 times more often than in men (31.6%).

All patients with hay fever with combined food allergy showed an exacerbation of the disease during the flowering season of causally significant plants in the form of the development of more pronounced clinical symptoms. Among the most common allergens are fruits of the Rosaceae family: apples, pears, peaches, apricots, strawberries.

Vegetables and fruits play an important role in the development of food allergies in older children and adults. In this case, as a rule, certain proteins of fruits, vegetables and nuts act as the main antigens, an allergic reaction to which is often caused by preliminary sensitization to the pollen of some plants. Patients with allergies to these products are most often concerned about itching, tingling, burning sensation of the mucous membrane of the cheeks, gums, upper palate and lips. It is important to note that often allergic reactions occur in response to the consumption of fresh vegetables and fruits; heat treatment or canning removes their allergenic properties. Food antigens contain epitopes present in the structure of profilin and are common with epitopes of some types of pollen (trees, grasses, cereals), therefore, allergic reactions to fruits and vegetables, although they can appear whenever these food products, but flow much heavier in the flowering season of the corresponding plants.

It should be noted that allergic reactions can occur as an immune response to allergens from house dust mites, pets, pollen, and fungal spores. Allergenic properties are possessed by only about 100 species of fungi, out of more than 100,000 species of known fungi, due to the fact that fungi are able to colonize substrates almost everywhere, their spores are constantly present in the air, causing year-round symptoms in sensitized patients. Among

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the fungi with etiological significance in the development of allergies, representatives of the genus Aspergillus are one of the most important inhalation allergens in various countries.

Molds play a significant role in the development of allergic sensitization in the body. Under the action of the antigenic structures of fungi, various pathological processes are formed in the immune system, including type I allergic reactions caused by IgE mechanisms, as well as other types of allergic reactions [1, 3]. Constant contact with the fungus leads to colonization in the respiratory tract and can cause persistent allergenic stimulation [2].

Rhizopus survives in very humid conditions and is susceptible to low humidity. Rhizopus spp. Usually forms black mold on bread. And fungi of the genus Cladosporium also survive in relatively humid conditions and are especially sensitive to lack of moisture. The basis of the origin of fungi is dead plants, cheeses, cereals, textiles, old window frames [9].

In the treatment of food allergies, diet therapy methods are used in practice. In our study, after identifying sensitivity to various food, fungal and occupational allergens, we used the elimination diet method.

Eliminating diet prescription tactics depends on examination period, severity of clinic manifestations, causal allergens spectrum, and patient's age. Diet therapy effect is determined not only by an accurate identification of food product that causes the development of allergic reactions, and by its ability to cross reactions, but also by a correct determination of reasonability and elimination duration depending on allergic properties of food allergens [7].

CONCLUSIONS

When selecting an elimination diet, the frequent presence of polyvalent sensitization, the rare presence of allergies to one food product, the formation of cross-allergic reactions, the frequent presence of latent allergens in finished food products are the main difficulties. In misdiagnosed food allergies, unnecessary food exclusion leads to a lack of essential nutrients, especially in children and adolescents. Timely diagnostics, knowledge of the characteristics of food allergens, depending on thermal stability and an individual approach when choosing an elimination diet prevents complications of food allergies.

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