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FOOD ALLERGY IN YOUNG CHILDREN: APPROACHES TO DIAGNOSIS AND TREATMENT.

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Annotation. Management of young children suffering from food allergy (FA) is currently one of the most difficult problems in pediatric allergology. The prevalence of FA in the first year of life, according to most researchers, is approximately 6-10%. At this age, hypersensitivity to almost any food product is possible, but the most common allergic reactions are to cow's milk, chicken eggs, fish, wheat, and soy. The first foreign protein introduced into a child's diet is usually cow's milk, and allergy to cow's milk proteins (CMP) is the most common cause of FA in young children. The prevalence of allergy to CMP is 2-3% [1]. Symptoms of allergy to CMP are nonspecific. Given the proven importance of CMP (dairy products) in the development of clinical manifestations of allergic diseases, their elimination seems to be the most rational.This is due to the possibility of non-IgE-mediated reactions, low reliability of allergy testing results before 6 months of age, impossibility of interpreting low concentrations of specific IgE, etc. It should be emphasized that there are certain disagreements in the informativeness of determining sensitization to components (proteins) of cow's milk. For example, A. Castro and A. Pastorino argue that determining sIgE to whole milk is more rational than determining sensitization to individual fractions [2]. At the same time, in our opinion, in clinical practice, especially in children of the first year of life, the use of component diagnostics has obvious advantages: the choice of a highly hydrolytic mixture, prognosis of the course of the disease, the earliest possible introduction of the excluded product, etc. [3]. Allergy to chicken eggs is detected in approximately 1.5–2% of children in the first 3 years of life [4].

In young children, sensitization to egg white allergens - ovalbumin and ovomucoid - predominantly develops. The latter is a heat-stable protein, and sensitization to this protein causes intolerance to heat-treated egg-containing products [5]. It should be emphasized that sensitization to chicken egg allergens can be detected even before this product is introduced into the child's diet, and combined sensitization to milk and chicken eggs aggravates the course of atopic dermatitis (AD) in young children. The prevalence of fish allergy varies significantly depending on the characteristics of the diet and is 0.39–5% [6, 7]. As a rule, fish allergy is detected in

young children with hypersensitivity to other food allergens. Allergic reactions to fish allergens may occur not only when eating fish, but also when inhaling fish allergens or when they come into contact with the skin, which is especially typical for young children. According to our data, in young children suffering from severe/moderate AD, the probability of cosensitization to chicken egg and fish allergens is about 60%. Moreover, 1/4 of children with severe/moderate AD who have not previously consumed fish show sensitization to the relevant allergen [8].

The aim of the study is to examine nutrition in allergic children. Sensitization to grains (wheat, rye, barley, etc.) is quite often found in young children, but clinically expressed allergic reactions are not so common. The latter usually manifest themselves in children with an exceptionally wide range of sensitization (multiple intolerance to food proteins) and, as a rule, grains are not the first food allergen to which hypersensitivity develops.

In general, it should be noted that the detection of sIgE to wheat has low predictive diagnostic value. Allergy to grains in young children usually manifests as AD, in addition, gastrointestinal tract (GIT) damage may develop, in particular protein-induced enterocolitis [9] or protein-induced proctocolitis [10]. Certain problems in children of the first years of life may arise in the differential diagnosis of IgE-mediated allergy to grains and celiac disease. In recent years, the number of young children with hypersensitivity to vegetable and fruit proteins, which are usually used as complementary foods, has increased [11].

Research methods. The prevalence of peanut allergy is from 0.1 to 1%. In children under 2 years of age, according to our data, the frequency of sensitization to peanuts is 0.78% [13]. In young children, in addition to the mother's consumption of this product, the use of soy formulas and topical products containing peanuts may contribute to the formation of peanut allergy. It is believed that the first allergic reaction to peanuts in most children develops between the ages of 14 and 24 months and in most cases occurs at home. In more than 70% of cases, children develop symptoms already at the first exposure to the allergen. About half of children with peanut allergy have allergic manifestations in one shock organ, 30% in two, 10–15% in three, and about 1% in four. In the management of patients with peanut allergy, component diagnostics and, in particular, the detection of prognostically unfavorable sIgE to Ara h1, Ara h2, Ara h3, as well as combined sensitization to allergens Ara h8 and Ara h9 are of great importance in assessing the risk of developing anaphylaxis [14].

Research results. Allergy to soy occurs in 0.4–3.1% of young children, the frequency of allergy to soy among children with allergic diseases reaches 2.7% [15]. As a rule, allergy to soy is detected in young children with allergy to CMP, since there is a need to select an artificial formula for feeding [16]. Cosensitization to CMP and soy is especially often detected in children with allergic enterocolitis (up to 40% of cases) [17]. Hypersensitivity to soy can develop to trace amounts of protein contained in sausages, confectionery products. All the above-mentioned allergens are consumed not only in whole form, but can also be included in other products - this circumstance must be taken into account when prescribing an elimination diet. Clinical manifestations of PA and their frequency of occurrence in young children differ significantly from adults. For example, in children of the first year of life,

manifestations from the gastrointestinal tract (enterocolitis, proctitis and proctocolitis induced by food proteins; enteropathy), which are associated with non-IgE-mediated PA, occur much more often than in adolescents.

Particular attention should be paid to the problem of food anaphylaxis in young children [18]. A recent study showed that among young patients with anaphylaxis, children under 2 years of age accounted for 56%, and among the causes of food anaphylaxis, the dominant significance was cow's milk and chicken egg allergens. At the same time, the absence of another allergic disease in a child does not completely exclude the possibility of developing food anaphylaxis. Prevention of food anaphylaxis is extremely difficult and repeated episodes of anaphylactic reactions within 2 years occur in 2/3 of children [19].

When managing young children suffering from PA, it is necessary to take into account the possibility of a fairly rapid increase in the degree of sensitization and the development of sensitization to other food allergens. This is especially true for children with severe manifestations of PA (for example, severe AD, IgE-mediated gastrointestinal tract damage, multiple intolerance to food proteins, anaphylaxis). And in this case, the doctor always has a concern that the allergy testing performed recently (weeks-months) may not reflect the current situation. The overwhelming majority of studies and various consensus documents consider the possibility of diet therapy only for allergies to BCM, which creates additional complications. The basis of the therapy of diseases induced by PA is the appointment of an elimination diet. The exclusion of the allergen to which hypersensitivity is detected should be as strict as possible, and it is necessary to take into account the possibility of its hidden presence as a component in other food products. The elimination diet should correspond as much as possible to the child's age-related need for proteins, fats, carbohydrates and calories.

This provision is especially important for young children, whose diet contains a limited range of foods. It is known that children with sensitization to two or more food allergens lag behind their peers in terms of weight and growth. Both vitamin D-dependent rickets and Ca-dependent rickets have been described in children with CMP allergy in cases where patients do not receive the corresponding ingredients in adequate quA breastfed child may have an allergic reaction, including anaphylaxis, upon first consumption of almost any food product [23]. In the case of breastfeeding, significant difficulties may arise in prescribing an elimination diet. In this regard, a number of works [24, 25] are noteworthy, demonstrating a high risk of developing AD and sensitization in children who are breastfed. Considering the many beneficial effects of breastfeeding, its discontinuation in the event of the development of PA in the child is not justified and prescribing an elimination diet to the mother is indicated. An elimination diet for the mother is prescribed taking into account the identified hypersensitivity in the child for at least 2-4 weeks. In the case of mixed feeding, dietary restrictions apply to both the child and the nursing woman. In the event of a decrease or disappearance of disease symptoms, it is recommended to introduce one product into the mother's diet per week; if clinical symptoms recur, the corresponding product is excluded from the mother's diet for the entire period of breastfeeding [26]. If during this time there is no improvement in the course of the disease in the child, it is advisable to take the following steps. Assess the compliance of the prescribed diet therapy, the

adequacy of the pharmacotherapy, analyze the possibility of the presence of previously unaccounted for specific and non-specific non-food triggers (sensitization to inhaled allergens, infections, sweat, hypersensitivity to local therapy), and also reconsider the diagnosis of diseases caused by PA. In special cases, it is possible to interrupt breastfeeding for 1-2 weeks with the appointment of an amino acid or highly hydrolytic mixture and then the introduction of breast milk. Such a decision can be made only after a consultation, including specialists of different profiles (allergist, dermatologist, pediatrician, gastroenterologist, nutritionist, etc.). Before prescribing an elimination diet, the possibility of clinical cross-reactivity should be assessed. However, an elimination diet, especially for children with polyvalent sensitization, should only be based on a sufficiently compelling reason - the connection between the use of the product and specific symptomsantities [20]. On the other hand, if children have an allergic gastrointestinal tract lesion, a secondary deficiency of certain microelements (for example, zinc) may develop.

Conclusions. Thus, at the present stage, effective diet therapy for young children suffering from PA is based on timely allergy diagnostics corresponding to the nosological profile and expected sensitization, as well as adequate use of various types of elimination diets depending on the specific clinical situation. A mandatory condition for the management of children of the first years of life with PA is dynamic monitoring and timely correction of the elimination diet.

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