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The effectiveness of an Integrated Approach to the Treatment of Food Allergy

Key words: food allergy, veritable food allergy, allergic response, sensitizing properties, elimination diet.

According to the modern classification of food intolerance there are the following kinds of it: veritable food allergy, i.e. food intolerance due to immunological mechanisms; pseudo-allergic responses to histamine release from some food products and nutritional supplements and food intolerance in connection with the deficit of digestive enzymes, psychogenic reactions to food [1, 2, 8].

Food allergy (FA) is characterized by hypersensitivity of organism to food products and development of clinical symptoms of food intolerance due to the reactions of the immune system [4, 5, 9, 10].

It is extremely difficult to study FA epidemiology because of a great number of potential allergens (A) and multifactorial character of diseases. Epidemiology researches conducted by some scholars proved that food allergy affects 10 % of children and 2 % of adults [8]. At present it is well known that mechanisms of food intolerance are quite diverse [11].

Due to the data of native and foreign researchers food allergy prevalence varies widely: from 0,01 % to 50 %. More often food allergy manifestation is related to allergic responses immediate type reaction (Ig-mediated) which make up 0,1-7 % according to the records of different authors. Men suffer from it 2 times often than women [5].

Practically any food product may serve as an allergen and cause the development of food allergy. Hence, there are some food products possessing expressed allergenic properties and having low sensitizing activity. Sensitizing properties are most expressed in food of albuminous origin, containing animal and vegetable proteins though there is no direct dependence between protein presence and food allergenicity.

Influenced by the allergen organism shows signs of hypersensitivity, i.e., sensitization in persons with genetic predisposition. With repeated contact of the body with the allergen there appear specific biological properties which are located on the surface of the most cells of shock organs and damage them. As a result the release of histamine in the blood and other bioactive substances take place and stipulate the clinical picture of disease. With food sensitization skin gastrointestinal tract become shock organs more often. Symptoms of respiratory allergy are observed rarely [11].

Food allergen elimination and allergen-specific immunotherapy (ASIT) refer to particular methods of food allergy treatment.

Elimination or removal of cause significant allergen from the diet refers to the main methods of food allergy therapy and in cases when food allergy develops to rarely eaten foods (for example, strawberry, chocolate, crabs, etc.) is the only effective means of treatment [8]. Elimination demands not only the exception of a concrete food product responsible for sensitization development, but any others to which it is included, even in trace amounts [6].

With the diet prescription it is necessary to strictly watch a patient receive nutrition matching the body weight and age to with the volume and correlation of food ingredients [12]. With food intolerance patients don't need elimination diets, but just adequate therapy and nourishment correction in accordance with accompanying somatic diseases.

With veritable food allergy patients should be prescribed elimination diets with a full removal of cause significant food allergens and other products having them. With elimination

diet prescription it is important not only to specify what products must be expelled from the diet, but also to offer the list of food products which may be entered in it. In its volume and food ingredients correlation the elimination diet must fully correspond to a patient's age, accompanying diseases and energy losses. Elimination of a food product is appointed only on the ground that the allergy is proved.

With the elimination diet prescription it is also necessary to expel food products having cross reactions with the food allergen (milk-beef, digestive enzymes; mold fungi-yogurt, cheese, yeast pastries, kvass, beer, etc., pollen-fruit, vegetables, berries, etc.). If after the elimination diet prescription the positive dynamics of symptoms of food allergy is absent for 10 days it is necessary to reconsider the patient's list of recommend products and identify the cause of ineffectiveness of the prescribed diet.

Antihistamine is used during patients' treatment. In cases of systematic manifestation of food allergy antihistamine preparations of the 1st generation are used (tavegil, suprastin) administered parenterally. During clinical symptoms of mild to moderate severity antihistamine preparations of new generation and their generic are oftener used: levocetirizine (zilola, glenset, instead of ksizal), cetirizine (zyrtec, allertek, letizen, etc.), fexofenadine (telfast), loratadine (Claritin, klarisens,

etc.). Principles of prescription, schemes and types of antihistamine administration during food allergy are the same as in other forms of allergy. Indications, doses and contraindications are covered in medical mass media well enough.

Aim of Research is to analyse causes and displays of FA in patient with a positive test to specific IgE, to estimate the effectiveness of the elimination diet medicament treatment.

Material and methods of research. An inspection of 116 patients was conducted. They were under a supervision in the allergy department of the Regional Clinical Hospital with high, medium and low sensibilization to foods and various clinical types of allergy manifestation. The patients' age varied from 29 to 48, is average making up ($38 \pm 4,6$) years (65 men and 51 women). Before admitting to the department identification of specific food IgE was conducted (data are presented in table 1).

Clinical manifestation of allergic reactions in patients with sensibilization to food allergens are presented in table 2. Patients underwent a subjective and objective examination; skin tests, endoscopy, research of eosinophils in a nasal secret, content of eosinophils, level of histamine were studied. Specific IgE were defined by means of immunoenzyme analysis with the use of test-system developed by LLC «Ukrmed-Don» (Donetsk, Ukraine) providing individual selection of

Results of the study of specific IgE-antibodies in patients with alimentary allergy

Table 1

№	Allergen	Total number of examined	Number of positive persons					
			Abs.	%	Degree of sensibilisation			
					Low	Medium	High	Extremely high
1	Buckwheat	62	48	77,42 %		28	20	
2	Kefir	27	20	74,07 %		9	11	
3	Black tea	35	32	91,43 %	5	10	17	
4	Cottage cheese	42	36	85,71 %		16	20	
5	Carrots	56	42	75 %	5	8	29	
6	Cheese	17	9	52,94 %	1	4	4	
7	Trout	5	4	80 %		1	3	4
8	Oat	15	10	66,67 %	4	4	2	
9	Chicken	72	47	65,28 %	20	10	17	
10	Egg protein	60	39	65 %	4	16	19	
11	Veal	29	22	75,86 %	2	5	15	
12	Pork	38	16	42,11 %		8	8	
13	Walnut	42	18	42,86 %	4	6	4	4
14	Coffee	28	11	39,29 %		5	6	
15	Orange	49	20	40,82 %	9	11		
16	Banana	32	24	75 %	4	10	10	
17	Beet	28	15	53,57 %			4	

Clinical manifestations of food allergy

Table 2

№	Symptoms	Number of patients	% from total number of patients
1	Itchy skin	110	94,8
2	Swollen tongue	112	96,5
3	Swollen of mucous cavity of mouth	90	77,5
4	Choking	42	36,2
5	Rhinorrhea	112	96,5
6	Dryness of mucous cavity of mouth and nose	82	70,7
7	Pains in epigastric area	45	38,8
8	Dyspeptic phenomenon	16	13,8
9	Conjunctivitis	52	44,8

researched list of allergens, and also used by producer for diagnostics of native allergens.

During visits to a doctor all patients complained of the following: itchy mouth cavity, numbness or swollen tongue, hard and soft palate, swollen mucous cavity of mouth. Objectively perioral dermatitis was observed in 77,5 % of patients, the given manifestation is characteristic of oral allergic syndrome. The diagnosis of food allergy is established on the basis of a positive result of food allergy examination with food allergens, and also after full disappearance of symptoms after the elimination diet prescription and in case of necessity of histamine preparation levocetirizine that was prescribed to 27 patients. Levocetirizine «Zilola» made by «Gedeon Richter», Hungary was administered in all patients, a single dose of 5mg per day.

Results and their discussion

During examination of peripheral blood in 22 % of patients eosinophilia was detected within ($11,2 \pm 2,3$) %, in 112 patients (96,5 %) were identified symptoms of allergic rhinitis as rhinorrhea, dryness and nasal congestion, in 52 patients (44,8 %) was found allergic conjunctivitis, in 42 patients (36,2 %) was detected the syndrome of bronchial obstruction.

Cytological research of smears in all patients with a respiratory syndrome evidenced eosinophilia to ($45,3 \pm 6,3$) %. According to the data of endoscopy, pylorospasm was found in 34 % of patients, expansion of the stomach in 12 patients.

Complex treatment of patients was carried out taking into account modern principles of approach and stages of cure. All the patients were offered the diet with the removal of allergen significant products for 10 days. The effectiveness of the diet was observed in 89 patients. A small diet effect was noted in patients with a respiratory syndrome. Levocetirizine was prescribed to 27 patients of this group for 10 days. It is necessary to notice that the effect of complex therapy was noticed in 4 days: nasal congestion, rhinorrhea, choking disappeared, and on the 20th day from the beginning of treatment all the symptoms of disease were not present. In 6 patients on the 20th day of observation a full remission of disease was absent.

3 patients suffering from labored breathing, 2 patients from rhinorrhea and 1 from perioral dermatitis. Above mentioned patients were hospitalized for further treatment.

Thus, results of research demonstrate high clinical effectiveness of levocetirizine in patients with FA that enables to use the preparation during complex treatment of this category of patients. These data prove the fact that exerted influence of Zilola is not limited by the blockade of H₁-histamine receptors, the medication also removes the symptoms conditioned by the factors of the last phase of the allergic response.

Conclusions:

1. According to our data, the typical manifestation of veritable food allergy is the development of the oral allergic syndrome and respiratory syndrome.

2. Treatment of patients with veritable food allergy should take into account adequate rational nourishment with the removal of cause significant allergen.

3. Use of pharmacological medicine must be the following stage of treatment after the elimination diet.

4. Use of levocetirizine effectively eliminated the symptoms of food allergy in the majority of patients, good bearableness of treatment was marked.

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ЭФЕКТИВНІСТЬ КОМПЛЕКСНОГО ПІДХОДУ ДО ЛІКУВАННЯ ХАРЧОВОЇ АЛЕРГІЇ

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Резюме

Харчова алергія характеризується підвищеною чутливістю організму до харчових продуктів і розвитком клінічних симптомів непереносимості їжі, опосередкованих участю реакцій імунної системи. Проведений аналіз 116 хворих, які знаходилися під спостереженням з різним клінічним проявом алергії. Вік хворих коливався від 29 до 48 років, в середньому становив $(38 \pm 4,6)$ року (65 чоловіків і 51 жінка). Хворим до поступлення у відділення було проведено дослідження з метою визначення специфічних харчових IgE.

Аналіз отриманих даних показав, що типовим проявом істинної харчової алергії є розвиток орального алергічного і респіраторного синдромів. Всім хворим було запропоновано дієту з виключенням продуктів із наявністю значимих алергенів на 10 днів, за відсутності ефекту призначався антигістамінний препарат – левоцетиризин (Зілола). Результатами дослідження встановлено, що лікування хворих з істинною харчовою алергією необхідно починати з урахуванням адекватного раціонального харчування, з виключенням причинно-значимого алергену. Використання фармакологічних препаратів, на думку авторів, має бути наступним етапом лікування після елімінаційної дієти. Вживання левоцетиризину в комплексній терапії харчової алергії супроводжувалося значним зниженням клінічної симптоматики.

Ключові слова: харчова алергія, істинна харчова алергія, сенситизуючі властивості, елімінуюча дієта.

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THE EFFECTIVENESS OF AN INTEGRATED APPROACH TO THE TREATMENT OF FOOD ALLERGY

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Summary

Food allergy is characterized by hypersensitivity to foods and the development of clinical symptoms of food intolerance mediated by reactions of immune system. Analysis of 116 patients with different clinical manifestations of allergy was carried out. Age of patients ranged from 29 to 48 years, with an average of $(38 \pm 4,6)$ years (65 men and 51 women). Determination of specific food IgE was held in patients before admission to the department.

Analysis of obtained data revealed that typical manifestation of a true food allergy is the development of oral and respiratory allergic syndromes. Diet with the exception of allergen-significant products was suggested to all patients for 10 days, administration of antihistamine – levocetirizine (Zilola) was held in the case of the absence of effect from diet. Results of research found that the treatment of patients with true food allergies needs to start from adequate balanced diet with the exception of cause significant allergens. The use of pharmacological medicines, in our opinion, should be the next step of treatment after an elimination diet. Use of levocetirizine in complex therapy of food allergy is accompanied with the significant reduction in clinical symptoms.

Key words: food allergy, veritable food allergy, allergic response, sensitizing properties, elimination diet.

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