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T. E. Shoomnaya*Zaporozhye state medical university*

Highlights of diagnosis and treatment of atopic dermatitis in children of industrial region

Key words: *atopic dermatitis, sensitization, allergens, children*

Skin prevents aggressive influence factors environment [1, 2, 14]. In the industrial regions of Ukraine children with atopic dermatitis often pay for medical care [5, 7].

Atopic dermatitis - this is a common skin disease in children. Children under 6 months of sick atopic dermatitis in 45 % in 1 year – 60 % in 5 years – 85 % of cases [3, 6, 12, 15]. The frequency of atopic dermatitis – 15 per 1,000 population. [11,13,17]. The prevalence of atopic dermatitis in children aged 6–7 years of Zaporizhye – 2,4 %, of Zaporizhye region – 0,75 %, in children aged 13–14 years of Zaporizhye – 3,24 %, of Zaporizhye region – 1,4 %. High risk of developing atopic dermatitis showed clinical signs such: itching, skin rash after ingestion and treatment medication (OR=19,47, CI [12,99; 28,73]). Today atopic dermatitis - an important medical and social problem. Increased incidence of severe forms with a large area of skin lesions. The number of patients with chronic relapse over resistant to conventional therapy. Quality of life of these children is reduced. This is due to psychosomatic disorders and cosmetic defects [16].

The **purpose** of the study is a definition of diagnostic methods and effective therapeutic measures atopic dermatitis in children.

Materials and methods

We examined 77 children with atopic dermatitis at the age of 6 –17 years, residents of the industrial region. Basic diagnostic criteria used: history; clinical examination; skin

tests with allergens (prick-tests, patch-tests), common IgE, specific IgE. Skin prick-tests, patch-tests for sensitization to diagnose children conducted allergens production “Immunologist”. Before testing, the children were in remission and did not take antihistamines for 5 days, glucocorticosteroids – 10 days. Staging, evaluation of results of skin tests conducted by Ministry of Health of Ukraine № 127/18 від 02.04.02. Treatment was carried out according to the protocols of medical care for allergic diseases [4, 8, 9]. Mathematical analysis was performed using statistical methods [10].

Results of the study

The results showed frequent factors in the development of atopic dermatitis in children of Zaporozhye region. This food allergens and allergy to chemicals haptens (Figure 1, 2.)

Important fungal allergens (*Aspergillus fum.* + *Aspergillus niger* у 76,62 % обстежених) and domestic (*Dermatofagoides pteronissinus* – 57,14 % и *Dermatofagoides farinae* – 33,77 %. Recorded sensitization to allergens epidermal dog – 22,08 %, cat – 14,29 %.

Children had hypersensitivity to three allergens. The polyvalent character sensitization— it is a factor that enhances the development of allergic diseases of the skin. Sensitization to allergens children realized under the influence of environmental factors and features of everyday life. The study of these factors allows the therapy, primary, secondary and

tertiary prevention in children with atopic dermatitis. Is necessary to select a cosmetic method for daily care of dry skin. For the diagnosis of sensitization to chemicals used haptens Application tests (patch tests) with Zoharconc tex 47 (the detergent), Sodium Laurul Sulphate 92 % (toothpastes, shampoos, shower gels), Bronopol (cream, deodorants), Kemaben 2E (cosmetics), antioxidant plasticizer for soap.

The performance index SCORAD in children with atopic dermatitis ($M \pm SD$): mild – $12,18 \pm 4,81$ reliability rating; moderate – $(29,71 \pm 5,09)$ reliability rating; severe – $(84,7 \pm 7,78)$ reliability rating.

In children with atopic dermatitis had a few clinical signs. We evaluated the frequency of major diagnostic simtomov disease (Figure 3).

Often recorded such symptoms of atopic dermatitis: dry, itchy skin, erythema. Our recommendations (Table) in the period of exacerbation performed 77 children with atopic dermatitis. In the period of remission only 52 children continued to apply the cream for dry and atopic skin, for example, «AVENE», «A-DERMA». Do not use the cream for skin care in remission 25 (32.47 %) children. So after $(3,13 \pm 1,67)$ months they reappeared clinical signs of disease. Treatment algorithm was repeated. In the future, a thorough examination of the differential diagnosis of the disease. This convinced the parents of sick children to fully carry out medical and preventive measures. Also need to constantly use creams for dry skin and atopic children.

All recommendations are carried out 52 (67.53 %) children with atopic dermatitis. They after repeated examinations within two years no clinical signs of disease. We have achieved a complete remission. This is had a good clinical efficacy of continuous use hypoallergenic medical care creams dry and atopic skin. Using these creams had no adverse effects.

Table The algorithm of treatment of children with atopic dry skin	
1. An elimination events, room temperature - 20°C, humidity – 50-70 %.	
2. Hypoallergenic diet.	
3. I. generation antihistamines (if itching), II-III generation antihistamines (without itching) 7–10 days, then mast cell stabilizer, such as «Ketotifen» up to 3 months.	
4. Sorbents – 7 days.	
5. Topical corticosteroids. In atopic dermatitis, mild or moderate activity (e.g., «Elokim») or strong activity (for example, «Lokoid», «Cutivate») 1 – 2 times a day for only the affected skin from 3 to 14 days. In secondary skin infection - combined with external means antifungal and antimicrobial activity (for example, «Triderm»).	
6. Care cream dry and atopic skin, such as series, for example, «AVENE», «A-DERMA», 2 times a day – constantly on the entire surface of the skin. Shower every day using hypoallergenic shampoos and gels on the basis of soapless bathing with elements of hardening (decrease in water temperature to +28°C).	

For the prevention of atopic dermatitis in children of Zaporozhye region need to actively implement methods of early diagnosis and preventive measures. Hypoallergenic diet, an elimination event, hardening, constant hydration of the skin increases the resistance of children to adverse environmental factors.

Conclusions

1. An important factor in the development of the disease were chemicals allergens-haptens Zoharconc tex 47 – 66,23 %, Sodium Laurul Sulphate 92 % – 71,43 %, an antioxidant – a plasticizer for soap – 77.92 %.

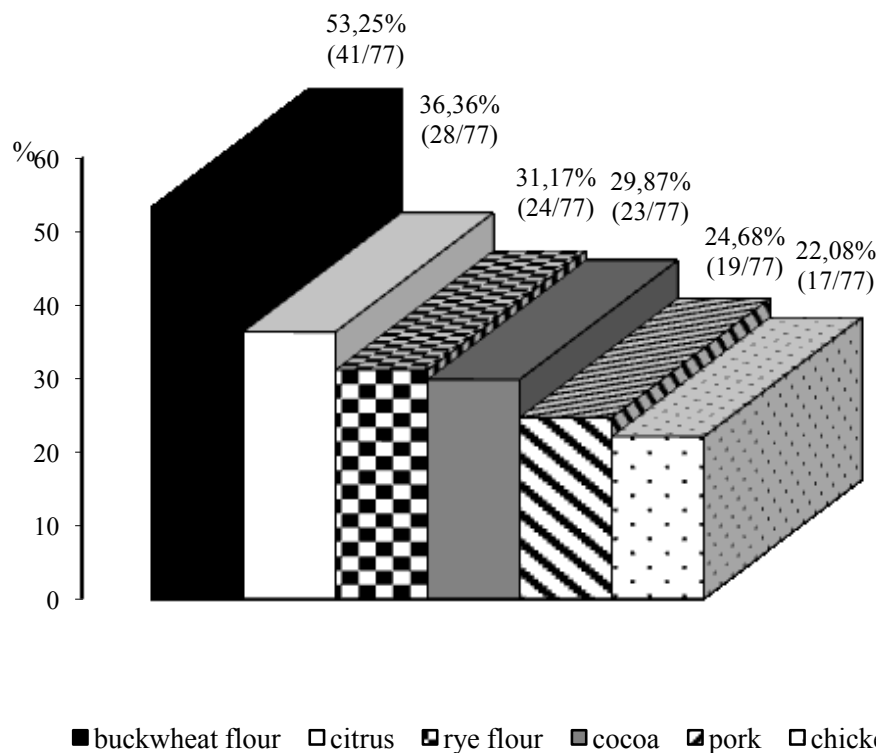


Figure 1. The results of skin testing with food allergens

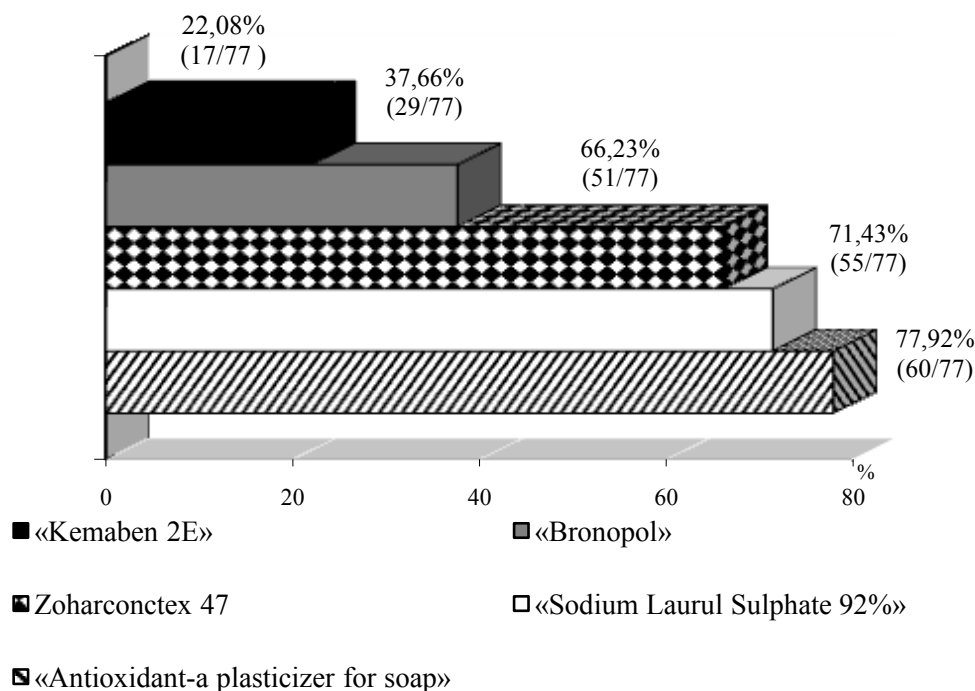


Figure 2. The results of patch test allergens-haptens chemicals

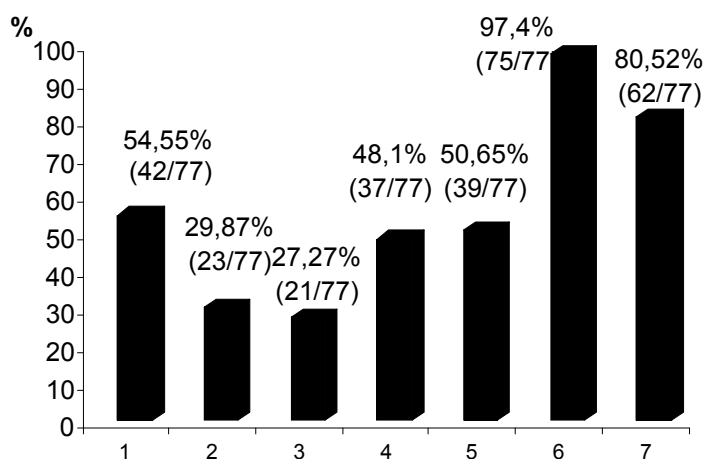


Figure 3. Clinical signs of atopic dermatitis: 1 – erythema; 2 – edema / papules / pustule; 3 – crusts / moisture; 4 – excoriation; 5 – lichenificatio; 6 – dry; 7 – itching

2. The main clinical symptoms of atopic dermatitis in children were dry (97.4 %), itchy skin 80.52 %, erythema 54.55 %.

3. Selection of hypoallergenic cosmetics for daily care of atopic skin and all recommendations contributes to complete clinical remission and social adaptation of patients, increases the body's resistance to adverse environmental factors.

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ОСНОВНЫЕ АСПЕКТЫ АЛЛЕРГОДИАГНОСТИКИ И ЛЕЧЕНИЯ ДЕТЕЙ С АТОПИЧЕСКИМ ДЕРМАТИТОМ, ЖИТЕЛЕЙ ПРОМЫШЛЕННОГО РЕГИОНА

Т. Е. Шумная

Резюме. Atopический дерматит (АД) — самое распространенное заболевание кожи у детей. Поэтому целью данного исследования было определение наиболее доступных информативных методов диагностики и эффективных лечебных мероприятий для своевременного выявления и профилактики АД у детей.

В данной работе представлены результаты обследования 77 детей с АД в возрасте 6–17 лет, жителей промышленного Запорожского региона. Как основные критерии диагностики использовались: сбор анамнеза; клинический осмотр; кожные тесты с алергенами (прик-тесты, патч-тесты); определение общего IgE и при необходимости — специфических IgE-антител к алергенам.

Проведенное исследование показало, что кроме пищевых и бытовых алергенов, важным фактором развития заболевания были и алергены-гаптены к химическим веществам Zoharconc tex 47 (пенообразователь, применяемый в качестве основы при производстве чистящих и моющих средств) — 66,23 %, Sodium Laurul

Sulphate 92 % (пенообразователь, применяемый при производстве зубных паст, шампуней, гелей для душа) — 71,43 %, антиоксиданту-пластификатору для мыла — 77,92 %. Основными клиническими проявлениями АД у детей были сухость (97,4 %), зуд кожи (80,52 %), эритема (54,55 %). Подбор гипоаллергенных косметических средств для ежедневного ухода за сухой кожей у детей и выполнение всех рекомендаций способствует достижению полной клинической ремиссии и предупреждению формирования косметических дефектов кожи, улучшает терапевтический комплаенс, социальную психадаптацию пациентов и повышает сопротивляемость организма детей к воздействию неблагоприятных факторов окружающей среды.

Ключевые слова: atopический дерматит, сенсибилизация, алергены, дети.

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Т. Е. Шумная

доцент кафедры факультетской педиатрии ЗГМУ,

ДГМБ № 5,

ул. Новгородская, 28, г. Запорожье, 69121

тел. (061) 224-94-07; моб. (097) 854-18-09

HIGHLIGHTS OF DIAGNOSIS AND TREATMENT FOR CHILDREN WITH ATOPIC DERMATITIS, OF INDUSTRIAL REGION

Т. Е. Shoomnaya

Abstract. Atopie dermatitis — this is a common skin disease in children. The purpose of the study was to make a definition of diagnostic methods and effective therapeutic measures atopie dermatitis in children.

In a study we examined 77 children with atopie dermatitis at the age of 6–17 years, residents of the industrial region. Basic diagnostic criteria used: history; clinical examination; skin tests with allergens (prick-tests, patch-tests), common IgE, specific IgE.

The research that an important factor in the development of the disease were chemicals allergens-haptens Zoharconc tex 47 — 66,23 %, Sodium Laurul Sulphate 92 % — 71,43 %, an antioxidant — a plasticizer for soap — 77.92 %. The main clinical symptoms of atopie dermatitis in children were dry (97.4 %), itchy skin (80.52 %), erythema (54.55 %). Selection of hypoallergenic cosmetics for daily care of atopie skin and all recommendations contributes to complete clinical remission and social adaptation of patients, improves therapeutic compliance, and increases resistance to adverse environmental factors.

Key words: atopie dermatitis, sensitization, allergens, children.

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Т. Е. Shoomnaya, Associate Professor,

Zaporozhye state medical university,

Department of Pediatrics,

Hospital № 5,

Novgorodskaya, 28 street, Zaporozhye, 69121

tel. (061) 224-94-07;

mob. (097) 854-18-09