



ATOPIC DERMATITIS IN CHILDREN

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✓ *Resume*

The problem of atopic dermatitis in children takes on special significance in contemporary medicine. Within structure of allergic diseases in children, atopic dermatitis possesses one of the leading places by its prevalence. Yet, many issues of this problem remain unsolved. The present paper reviews references of home and foreign authors who generalize contemporary notion of the classification, approaches to treatment and prevention of atopic dermatitis.

Key words: atopic dermatitis, children, diagnostic criteria, local and general therapy.

АТОПИЧЕСКИЙ ДЕРМАТИТ У ДЕТЕЙ

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✓ *Резюме*

Проблема атопического дерматита приобретает все большее значение в современной медицине. В структуре аллергических болезней у детей атопический дерматит занимает одно из ведущих мест по своей распространенности. Однако многие вопросы этой проблемы до настоящего времени остаются не решенными. В статье представлен обзор литературы отечественных и зарубежных авторов, обобщающих современные представления о классификации, подходах к лечению и профилактике атопического дерматита.

Ключевые слова: атопический дерматит, дети, диагностические критерии, местная и общая терапия.

BOLALARDA ATOPIK DERMATIT

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✓ *Rezyume*

Zamonaviy tibbiyotda atopik dermatit muammosi tobora muhim ahamiyat kasb etmoqda. Bolalardagi allergik kasalliklar tarkibida atopik dermatit uning tarqalishida etakchi o'rinlardan birini egallaydi. Biroq, bu muammoning ko'plab masalalari hali ham hal etilmagan. Maqolada atopik dermatitni tasniflash, davolash va oldini olish bo'yicha yondashuvlar haqidagi zamonaviy g'oyalarni umumlashtirgan holda mahalliy va xorijiy mualliflarning adabiyotlarini ko'rib chiqish keltirilgan.

Kalit so'zlar: atopik dermatit, bolalar, diagnostika mezonlari, mahalliy va umumiy terapiya.

Introduction

The problem of allergic skin lesions in children is currently one of the most relevant in the practice of a pediatrician. Among allergic skin diseases in children, one of the leading places is occupied by atopic dermatitis, the prevalence of which, according to epidemiological studies, ranges from 17 to 25% [1].

A large number of epidemiological studies indicate a higher incidence of allergic diseases in cities than in rural areas, as well as in economically developed countries compared to countries with developing economies.

The high prevalence of atopic dermatitis in the child population, the further growth of its severe forms, the tendency to chronic course, insufficiently studied medical, biological and socio-hygienic factors of development determine the relevance of this problem [2].

Atopic dermatitis is a chronic allergic disease that develops in individuals with a genetic predisposition to atopy, has a relapsing course with age-related clinical manifestations and is characterized by exudative and (or) lichenoid rashes, increased serum IgE levels and hypersensitivity to specific and nonspecific stimuli. In the development of atopic dermatitis in children, endogenous and exogenous risk factors should be distinguished:

I. Endogenous:

- 1) heredity;
- 2) atopy;
- 3) skin hyperreactivity.

II. Exogenous:

- 1) triggers:
 - non-allergenic (psycho-emotional stress, weather changes, tobacco smoke, food additives, pollutants, xenobiotics);
 - allergens (food, household, epidermal, fungal, bacterial, vaccinal);
- 2) aggravating factors for triggers:
 - climate;
 - Violation of the nature of nutrition;
 - violation of the rules of skin care;
 - vaccination;
 - psycho-emotional stress;
 - acute respiratory viral infections.

Hereditary predisposition is the main factor in the formation of atopic diseases. It has been proven that atopic dermatitis develops in 81% of children in whom both parents suffer from atopic disease, and in 56% if one of the parents (especially the mother) is ill [2].

A number of factors can predispose to the development of atopic dermatitis, starting from the antenatal period of fetal development. Thus, a high level of allergenic exposure of the mother and fetus, an infection (usually viral) during pregnancy, a complicated course of pregnancy and an increase in the permeability of the placental barrier for antigens associated with it, occupational hazards and smoking contribute to the implementation of genetically programmed differentiation of Th0 cells into Th2 lymphocytes. with subsequent hyperproduction of Ig E. The contribution of functional disorders of the central nervous system is pathogenetically significant.

In these patients, weakness and pathological inertia of the irritable and inhibitory processes are expressed, as well as a decrease in the mobility of cortical processes. At the same time, there is a direct relationship between the severity of the skin process and functional disorders of the nervous system [3,4]. In early childhood, malnutrition, digestion and absorption are of great importance. Sensitization to food allergens is facilitated by the anatomical and physiological characteristics of the child's body: functional immaturity of the digestive organs, well-developed vascularization of the mucous membrane of the gastrointestinal tract, lack of local immunity - all this contributes to the penetration of unsplit macromolecules into the child's bloodstream. Recognition of the allergic (immunological) concept of the development of atopic dermatitis was the reason for a comprehensive study of its immune mechanisms, especially IgE-mediated reactions.

The study of the concentrations of total and specific IgE antibodies in children with atopic dermatitis showed that in 85.5% of them the levels of total IgE significantly exceeded those of healthy children. Thus, in the pathogenesis of atopic dermatitis, an important place belongs to immunological mechanisms, changes in regulation at the level of cytokines, which determine the specificity of the mechanisms for the development of this disease and, therefore, studies aimed at elucidating the degree of these disorders and searching for methods of drug correction of the observed changes are of particular relevance. Currently, there is no officially recognized classification of atopic dermatitis. Based on many years of clinical observations, study of etiology and available morphological data,

V.A. Revyakina, I.I. Balabolkin, L.S. Namazova et al. (1998) developed a working classification of atopic dermatitis in children [1].

Working classification of atopic dermatitis in children

I. According to the clinical and morphological form:

- 1) exudative;
- 2) proliferative;
- 3) mixed.

II. Shape according to age:

- 1) infant - from 2 months to 3 years;
- 2) children - from 3 to 12 years;
- 3) teenage - from 12 years old.

III. According to the clinical and etiological variant:

- 1) with food allergies;
- 2) with household sensitization;
- 3) with tick-borne allergy;
- 4) with fungal allergy;
- 5) with pollen sensitization;
- 6) with polyvalent sensitization.

IV. By prevalence:

- 1) common;
- 2) local.

V. By stage of development:

- 1) initial;
- 2) the formation of pathological skin changes;
- 3) remission (recovery).

VI. According to the severity of the flow:

- 1) lung;
- 2) average;
- 3) heavy.

VII. According to the period of the disease:

- 1) acute;
- 2) subacute;
- 3) remission.

VIII. Associated manifestations:

- 1) skin;
- 2) extradermal.

The initial stage of the disease is reversible, provided that treatment is started in a timely manner with appropriate elimination measures and the appointment of a hypoallergenic diet. It is at this stage of the disease that it is easiest to achieve the reverse development of skin rashes. Untimely and inadequate treatment of skin manifestations leads to the transition of the initial stage of the disease to the stage of pronounced pathological changes on the skin with typical morphological elements. Clinical manifestations of atopic dermatitis at this stage are quite diverse, which is reflected in a more detailed (compared to the above) classification [5].

The exudative form is characterized by flushing of the face, swelling, exudation (weeping), and the formation of crusts. In the future, rashes can occur on the skin of the outer surface of the legs, forearms, on the trunk, buttocks. Red or mixed dermographism is characteristic. There is itching of the skin of varying intensity. This form is more common in children of the first year of life. The erythematous-squamous form is characterized by hyperemia and slight swelling of the skin, the appearance of itchy nodules, small vesicles, erosions, peeling and scratching. Exudation is not typical for this form.

Erythematous - squamous form of atopic dermatitis is more often detected in children aged 2–3 to 10–12 years.

The erythematous-squamous form with lichenification is manifested by erythematous-squamous lesions with the presence of small flat and follicular papules. The skin is lichenified, with a lot of scratching and small-lamellar scales. Skin rashes occur mainly on the flexor surface of the limbs, the anterior and lateral surfaces of the neck, and the rear of the hands. White persistent or mixed dermographism is characteristic. This form of atopic dermatitis is typical for children from 2 to 12 years old.

The lichenoid form of atopic dermatitis is more often observed in adolescents and is characterized by dryness and an accentuated pattern of the skin, swelling and infiltration. Against the background of erythema, large confluent foci of skin lichenification are found [7]. Various clinical manifestations of atopic dermatitis can be combined in different combinations and vary in each case, and therefore it is advisable to distinguish three main clinical and morphological forms of this disease: exudative, proliferative and mixed.

All clinical manifestations of atopic dermatitis, occurring with exudation, are referred to the exudative form, and skin manifestations with foci of infiltration and lichenification are referred to the proliferative form. The simultaneous presence of foci of exudation, infiltration, lichenification in patients is considered as a mixed form of atopic dermatitis. Based on the anamnesis of the disease, the characteristics of the clinical course and the results of an allergological examination, etiological variants of atopic dermatitis associated with food, tick, fungal allergies, household, pollen, polyvalent sensitization are distinguished. The prevalence of the skin process is estimated by the location of lesions on the skin. If skin rashes are noted on the face, trunk, limbs and (or) in the area of the folds of large and medium joints, then atopic dermatitis is regarded as common. If the skin process is limited only to the face and neck area or the folds of large and medium joints, or is localized around the wrists or shins, This is localized atopic dermatitis [3,8,10]. When assessing the severity of atopic dermatitis, the severity of inflammatory manifestations on the skin, the intensity of itching, swollen lymph nodes, the frequency of exacerbations and the duration of remission are taken into account [23].

The mild course of atopic dermatitis is characterized by small skin rashes in the form of mild hyperemia, exudation, slight peeling, single papulo-vesicular elements, mild itching of the skin, and an increase in lymph nodes up to 3–4 mm. The frequency of exacerbations is 1-2 times a year. The duration of remission is 6-8 months. In moderate to severe course, there are multiple lesions on the skin with fairly pronounced exudation, infiltration, lichenification, excoriations and crusts. Itching is moderate or severe. Lymph nodes are enlarged up to 5–8 mm. The frequency of exacerbations is 3-4 times a year. The duration of remission is 2-3 months [9,21]. The severe course of atopic dermatitis is characterized by multiple and extensive lesions with severe exudation, persistent infiltration and lichenification, with deep linear cracks and erosions. The itching is intense and constant. The frequency of exacerbations is more than 5 times a year. The duration of remission is 1–1.5 months [10].

In most cases, children with atopic dermatitis have concomitant manifestations: skin (dry skin, periorbital shadows, palmar hyperliarity) and extracutaneous (allergic conjunctivitis, allergic rhinitis, bronchial asthma). In patients with atopic dermatitis, comorbidities are often detected: diseases of the gastrointestinal tract (80–97%), nervous system (55–60%), pathology of the ENT organs (50–60%), respiratory diseases (30–40%). %, urinary system (20–30%), protozoan-parasitic invasion (18–20%). The critical periods for the development of atopic dermatitis in children are the age of the child up to 3 years (during this period, it is possible with the maximum probability to achieve interruption of atopy by effective elimination measures), 6–7 years and 12–14 years [4].

The prognosis of atopic dermatitis depends on the presence of atopy in relatives, the characteristics of the course of pregnancy and childbirth, the time of appearance of the first manifestations of the disease, comorbidity, the state of the patient's mentality, and the adequacy of therapy. The diagnosis of atopic dermatitis in typical cases does not present significant difficulties. Due to the lack of pathognomonic tests and criteria for atopic dermatitis, this diagnosis is in most cases made on the basis of the main and additional diagnostic criteria, proposed by JM Hanifin, G. Rajka, KD Cooper in 1986 [8, 9].

The main diagnostic criteria for atopic dermatitis include: itching of the skin, typical morphology and location of the rash, a tendency to a chronic relapsing course, personal and family history of atopic disease, white dermographism.

Additional diagnostic criteria for atopic dermatitis include: xerosis, ichthyosis, palmar hyperlinearity, cheilitis, seizures, Keratosis pilaris, Pityriasis alba, facial pallor, periorbital shadows. A different combination of diagnostic criteria (three main and three additional) is sufficient to make a diagnosis of atopic dermatitis. However, some domestic and foreign scientists believe that the diagnosis, especially in the early stages and with a latent course, it is necessary to put on the basis of minimal signs and confirm it with modern methods of laboratory diagnostics, the most important of which include a specific allergological examination, an examination of the immune status, and a fecal analysis for dysbacteriosis. Most patients with atopic dermatitis are sensitized to a wide range of allergens. Skin tests allow you to identify the alleged allergen and carry out preventive measures. However, the involvement of the skin in the pathological process does not always allow for this examination. Serum IgE concentration is elevated in more than 80% of patients with atopic dermatitis and is more often higher than in patients with respiratory

diseases. The degree of increase in total IgE correlates with the severity of skin disease. It should be noted, that 20% of patients with typical manifestations of atopic dermatitis have a normal level of IgE. Thus, the determination of total IgE in the blood serum helps in the diagnosis, but it cannot be fully guided in the diagnosis, prognosis and management of patients with atopic dermatitis. In addition, in recent years, RAST, MAST, and ELISA methods have been widely used to determine the content of specific IgE antibodies in vitro [5].

Modern therapy of atopic dermatitis is pathogenetic and is aimed at eliminating pathological disorders in organs and systems, as well as preventing exacerbations of the disease. It includes elimination measures, drug therapy, local therapy and rehabilitation measures. Therapy should be strictly individual, taking into account the clinical form, stage and period of the disease, associated pathological conditions and complications [7].

Among the elimination measures, the leading place is occupied by the exclusion of causally significant food allergens with the use of specialized diets, the effectiveness of which depends on the completeness of the identification and exclusion of all allergenic products from the diet. At the same time, an indispensable condition is their replacement with food products of equal nutritional value and calorie content. Specialized diets have not only therapeutic, but also diagnostic and preventive capabilities. It is advisable to record reactions to food based on the analysis of the food diary before prescribing an elimination diet to the child. At the beginning of the examination of the child, until the results of a specific diagnosis are obtained, a diet is used, from which the alleged food allergens, obligate allergens (milk, eggs, fish, coffee, cocoa, chocolate, honey, nuts, vegetables and fruits containing red, yellow pigments, etc.), as well as foods that can cause nonspecific histamine release (cheese, sauerkraut, legumes, spinach, etc.) [28].

Since cow's milk proteins are a cause-significant allergen in the development of allergies in young children, the main principle of diet therapy is the exclusion of milk formulas and their replacement with mixtures based on soy protein isolate. However, a large number of children with intolerance to cow's milk proteins also develop intolerance to soy proteins. For the nutrition of such patients, hypoallergenic mixtures based on milk protein hydrolysates with a small degree of hydrolysis have recently been developed, which are used for non-severe food allergies, as well as, if necessary, transfer to artificial feeding of children with aggravated allergic anamnesis. In such mixtures, the fat and carbohydrate components are similar to those in conventional adapted mixtures; the amino acid set of the protein component is close to the composition of human milk. These mixtures are complete and balanced, enriched with vitamins, microelements, taurine [6].

Along with the elimination diet, patients with atopic dermatitis are prescribed drug therapy: drugs that have antihistamine and antiserotonin effects, agents that inhibit the release of biologically active substances from mast cells, drugs that normalize the functional state of the gastrointestinal tract, sorbents, sedatives and immunomodulators. Of the antihistamines, preference should be given to second-generation drugs (claritin, hismanal, trexil, zyrtec, kestin, etc.), which selectively act on peripheral H1 receptors, have less neurotoxicity and a sedative effect, and are increasingly used in the treatment of atopic dermatitis. These drugs can stop acute manifestations of allergies. With prolonged use of second-generation antihistamines (up to 2-3 months), there is a decrease in exacerbation episodes and clinical remission is achieved. In the treatment of atopic dermatitis, drugs are used whose action is aimed at inhibiting the secretion of allergy mediators (zaditen, ketotifen, nalcrom). These drugs are used for prophylactic treatment with a long course (at least 2-3 months). Drugs that normalize the function of the digestive system, are prescribed to improve the processes of splitting allergic food substances and correct enzymatic disorders. For this purpose, abomin, festal, digestal, panzinorm, creon, hilak-forte are used. The duration of the course of treatment should not exceed 2-3 weeks. According to some authors, in the acute phase of the disease, it is advisable to prescribe enterosorbents: carbolene, activated charcoal, polyphapan, bilignin, etc. (short course up to 5-7 days) [12,14].

In atopic dermatitis, as a rule, the intestinal biocenosis is disturbed. In order to eliminate it, eubiotics are used. Depending on the severity of neurovegetative disorders, it is necessary to use sedative therapy that has a regulatory effect on the central nervous system (valerian extract, motherwort, peony tincture). In some cases, it is necessary to resort to the appointment of tranquilizers (rudotel, diazepam, meproamate). The course of atopic dermatitis can be aggravated by hypovitaminosis A. Therefore, it is advisable to prescribe an oil solution of vitamin A at an age dosage (1000 IU per 1 year of a child's life) [25]. In young children, in order to avoid overdose, it is preferable to use an aqueous solution of vitamin A. In atopic dermatitis that occurs with signs of immune deficiency, immunomodulating agents can be effective. It is believed that the use of thymalin, taktivin, vilozen helps to reduce the symptoms of allergies and reduce the level of total Ig E in blood serum. Local therapy in children with atopic dermatitis is differentiated taking

into account the condition of the skin and is aimed at eliminating and resolving inflammatory changes that have developed on the skin. Local treatment includes ointments, creams, solutions, lotions. Lead water, copper sulphate solution, potassium permanganate solution, freshly brewed black tea solution have an astringent effect. 1% solution of methylene blue, Castellani liquid, fucorcin dry the skin and have an antimicrobial effect. A 1% solution of menthol, a 20% aqueous solution of glycerin, and mashes containing zinc have a drying and antipruritic effect. 5% salicylic ointment, Unna cream, zinc-naftalan ointment, birch tar, ichthyol contribute to the elimination of infiltration and lichenification. In recent years, topical glucocorticosteroids have taken an important place in the treatment of atopic dermatitis. Most of them have side effects, the risk of which depends on the age of the patient [17].

Among modern non-fluorinated corticosteroid drugs for external use, advantan deserves special attention. It has a pronounced biological activity and a high degree of safety. The drug has a variety of dosage forms (emulsion, cream, ointment, fatty ointment) and can be used in young children (starting from 1-2 months). The emulsion is recommended to be prescribed for exacerbation of skin inflammation, weeping of the skin, with damage to the skin of the face and scalp. It is advisable to prescribe the cream for acute and subacute processes on the skin, including on the face and skin folds. Ointment should be used for subacute and chronic dermatitis. Fatty ointment is effective in the chronic course of the disease with increased dryness of the skin. Advantan is a diester with a high lipophilicity, which allows it to quickly and deeply penetrate the stratum corneum of the skin and enter the bloodstream, while being quickly inactivated. Active connection with skin receptors ensures its prolonged effect and makes it possible to use the drug once a day. The course of treatment, as a rule, does not exceed 14 days. Physiotherapy is an important stage in the system of staged therapy of atopic dermatitis. In complex treatment, physiotherapeutic procedures are used that have a local and systemic effect: variable \hat{A} Advantan is a diester with a high lipophilicity, which allows it to quickly and deeply penetrate the stratum corneum of the skin and enter the bloodstream, while being quickly inactivated. Active connection with skin receptors ensures its prolonged effect and makes it possible to use the drug once a day. The course of treatment, as a rule, does not exceed 14 days. Physiotherapy is an important stage in the system of staged therapy of atopic dermatitis. In complex treatment, physiotherapeutic procedures are used that have a local and systemic effect: variable \hat{A} Advantan is a diester with a high lipophilicity, which allows it to quickly and deeply penetrate the stratum corneum of the skin and enter the bloodstream, while being quickly inactivated. Active connection with skin receptors ensures its prolonged effect and makes it possible to use the drug once a day. The course of treatment, as a rule, does not exceed 14 days. Physiotherapy is an important stage in the system of staged therapy of atopic dermatitis. In complex treatment, physiotherapeutic procedures are used that have a local and systemic effect: variable \hat{A} does not exceed 14 days. Physiotherapy is an important stage in the system of staged therapy of atopic dermatitis. In complex treatment, physiotherapeutic procedures are used that have a local and systemic effect: variable [21,24]

\hat{A} does not exceed 14 days. Physiotherapy is an important stage in the system of staged therapy of atopic dermatitis. In complex treatment, physiotherapeutic procedures are used that have a local and systemic effect: variable \hat{A} magnetic field, ultrasound treatment, electrosleep, polarized light, laser therapy, acupuncture. These factors are used strictly individually, taking into account the form and period of the disease, the severity of the disease and the presence of concomitant diseases. Prevention of atopic dermatitis should be carried out even before the birth of the child. Pregnant women and nursing mothers are prescribed a hypoallergenic diet, especially those who suffer from allergic diseases. Children at risk for the development of allergic diseases are recommended to breastfeed as long as possible [19].

Conclusion

A review of the literature data allows us to conclude that the problem of atopic dermatitis in children is relevant and requires further research in order to develop diagnostic criteria for the disease and more effective methods of treatment.

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