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Morpho-Functional Aspects of Atopic Dermatitis (Literature Review)

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Abstract: Atopic dermatitis(AD) is a skin disease characterized by severe itching, chronic recurrent course, predominance of urticary and papular elements in the clinical picture in combination with signs of atopy. Atopy is understood as a hereditary predisposition to allergic reactions in response to sensitization by certain antigens.

Keywords: Atopic dermatitis, follicular hyperkeratosis, hyperesthesia, Quincke's edema, lichenification.

The term “neurodermatitis” was first proposed in 1891 by L. Brocq and L. Jacquet and is applicable to a skin disease that appeared as a result of scratching at the sites of primary itching without signs of hereditary predisposition. As for terminology, previously, a disease with a characteristic clinical picture in childhood was proposed to be called atopic dermatitis, while an adult was diagnosed with neurodermatitis.

To make a diagnosis of ATOPIC DERMATITIS, it is necessary to have 3 mandatory and 3 additional diagnostic signs. According to some authors, the list of additional criteria can be expanded, others believe that some of them are questionable and are often present in healthy people.

Epidemiology

ATOPIC DERMATITISoccurs in all countries, in people of both sexes and in different age groups. There is no exact data on the population frequency. The incidence, according to various authors, ranges from 6 to 15 per 1000 population. Women are more likely to get sick (65%), men are less likely (35%), and the incidence of ATOPIC DERMATITIS in cities is higher than in rural areas. There is an increase in morbidity all over the world, which is associated with environmental pollution, the allergizing effect of certain foods, shortening of breastfeeding periods, vaccination and other reasons.

Etiopathogenesis and risk factors

The mechanisms involved in the development of the pathological process in ATOPIC DERMATITIS are diverse. The leading role in the etiology and pathogenesis of ATOPIC DERMATITIS of atopic dermatitislies in hereditary predisposition. ATOPIC DERMATITIS develops in 81% of children if both parents of stratopic dermatitishave this disease and in 56% of children if only one parent is ill, and the risk increases if the mother is ill with ATOPIC DERMATITIS. In patients with ATOPIC DERMATITIS, 28% of relatives of stratopic dermatitishave atopy of the respiratory tract. In children with a family history of ATOPIC DERMATITIS, it is more severe: the onset is characteristic at the age of 3-4 years, short

remissions, frequent relapses, pronounced dryness of the skin in combination with follicular hyperkeratosis.

Functional disorders of the nervous system and features of vascular regulation play a significant role in the etiology and pathogenesis of ATOPIC DERMATITIS. Vegetative-vascular dystonia in patients with ATOPIC DERMATITIS is clinically manifested in the form of white dermographism, increased vascular spasms in the cold, dryness and pallor of the skin, decreased sweating, hyperhidrosis of latopic dermatitis, frequent acrocyanosis are also characteristic. A patient with ATOPIC DERMATITIS has some neurotic character traits: a tendency to alienation, emotional lability, a feeling of depression, tension, anxiety, sometimes depression and hypochondria. At the same time, many authors note that the intelligence of patients with ATOPIC DERMATITIS is usually above average.

Exogenous factors

Exogenous factors can provoke the occurrence of ATOPIC DERMATITIS and exacerbation of the disease in genetically predisposed individuals. The most important are food substances, inhalation allergens, physical external stimuli, contact allergens of animal and plant origin, stress factors.

Among inhaled allergens, exacerbations of the disease are most often caused by house dust, pollen of flowering plants, mold, dandruff of humans and pets, odors of food products, especially fish and citrus fruits. In 70% of cases, there is an allergy to house dust, as it may contain many of the listed allergens. The main allergen of house dust is the Dermatophagoides pteronyssinus mite and its excrement. The exacerbation of the disease is associated not only with the inhalation of tick-borne allergens, but also with their contact effect on the skin. Inhaled allergens in some cases lead to Quincke's edema and asthma attacks.

Among contact irritants and allergens, wool, synthetic fibers, detergents, disinfectants, nickel, cobalt, lanolin, latex, antibiotics, as well as physical irritants – cold, wind, high temperature should be noted. Sensitivity to these factors is associated with increased reactivity of the skin of patients with ATOPIC DERMATITIS, characterized by dryness and hyperesthesia.

Sex hormones play a certain role, since the process usually changes during pregnancy or lactation (relapses or, conversely, persistent clinical remissions are possible).

Meteorological factors, insolation can cause both exacerbation of the disease and persistent remission. It is known that one of the features of ATOPIC DERMATITIS is its seasonal course with exacerbations in spring and autumn, and with the obligatory improvement or complete disappearance of rashes in summer.

The role of food allergy/intolerance in the occurrence and development of the skin process in ATOPIC DERMATITIS is undeniable. So, on average, 76% of children with stratopic dermatitisand ATOPIC DERMATITIS have an exacerbation when certain foods are included in the diet. Children of the first three years of life most often have lactalbumin intolerance to whole cow's milk. The second most common allergenic product is chicken eggs.

The presence of food intolerance in children older than 7 years is a prognostic sign of a severe course of the disease and the possibility of developing respiratory atopy.

Food intolerance develops against the background of congenital fermentopathy of the digestive tract, which creates conditions for the development of dysbiosis, biliary dyskinesia, which lead to disorders of fermentation and absorption.

Clinic

Currently, the division of ATOPIC DERMATITIS into 3 age periods is accepted. The first age period. The first signs of ATOPIC DERMATITIS in 63-82% occur in the first year of a child's life, and, according to F.A. Zverkova (1975), the disease usually begins after 3-4 months of age. The initial manifestations are localized almost always on the face: foci of bright erythema and

wetness occur on the cheeks, leaving the nasolabial triangle unaffected, in the future the process extends to the forehead, behind the ear, collar area, scalp, trunk. The early localization of rashes on the outer surface of the shins is also characteristic. At the age of mlatopic dermatitis, exudation processes occur in the clinical picture of preoblatopic dermatitis: hyperemia, puffiness, wetness, layering of serous crusts, the so-called milk scab (milk crusts) appears. Erythematous foci have a shiny surface, hot to the touch. Gradually, the processes of exudation become less pronounced, and in the second year of life of preoblatopic dermatitis, areas of infiltration and peeling disappear. Polygonal papules appear on the forehead, the outer surfaces of the shins, then weak lichenification develops. Despite the fact that the rashes are mostly still located on the extensor and flexor surfaces of the extremities, by the end of the second year of life there is a tendency to localize them in the sclatopic dermatitis, the process subsides on the face. This is how the second age period begins.

In the second age period from 2 years to puberty, the disease has the character of chronic inflammation. Rashes are mainly localized in the ulnar and popliteal sclatopic dermatitis, on the zatopic dermatitisof the neck surface, on the flexor surfaces of the ankle and wrist joints, in the posterior region. The skin is dry, dull in appearance, infiltrated, there is latent or bran-like peeling, dyschromia phenomena are pronounced, due to severe itching, many excoriations appear. The patient's face has a grayish tint, often with pronounced hyperpigmentation around the eyes, lower eyelids with emphasized sclatopic dermatitis, which gives the face a tired look. Some patients with ATOPIC DERMATITIS have an additional sclatopic dermatitison the lower eyelid, “Morgan's sclatopic dermatitis”, named after the author who described it. On the back surface of the brushes, you can often see stagnant hyperemia, cracks, peeling, infiltration of the skin. Such changes are called nonspecific dermatitis of the hands. In this period, hypersensitivity to food allergens decreases, there is a tendency to a wave-like flow, there are manifestations of vegetative-vascular dystonia.

The third age period (older children and adults) is characterized by preoblatopic dermatitis, excoriation, lichenoid papules, foci of lichenization and infiltration of the skin. The color of the rash is stagnant-cyanotic, characterized by diffuse lesions of the skin of the face, neck, upper trunk, upper extremities. All rashes are accompanied by excruciating itching. Eczema and wetness occur only with relapses. The seasonality of the course and the reaction to allergenic stimuli are less pronounced. Some patients retain the characteristic signs of an “atopic face".

Complications

Often, especially with severe ATOPIC DERMATITIS and immunodeficiency, a secondary infection joins ATOPIC DERMATITIS. Pustular elements, bubbles and larger bubbles with serous contents appear, which gradually becomes cloudy and becomes purulent, gradually the bubbles shrink into purulent crusts. The process is accompanied by an increase in body temperature, general malaise. Often, chronic recurrent furunculosis occurs against the background of ATOPIC DERMATITIS.

The second formidable complication is Kaposi's herpetiform eczema. This disease affects children of early childhood, stratopic dermatitisand ATOPIC DERMATITIS. The causative agent of the disease is the herpes simplex virus, and the source of infection is a patient with herpes simplex. The disease begins acutely with an increase in body temperature to 39-40 ° C, a general severe condition. 1-2 days after the prodromal period, small grouped bubbles with an umbilical depression in the center with serous, purulent or hemorrhagic contents appear. Basically, bubbles and pustules are localized on the face, scalp, but they can affect the mucous membranes of the oral cavity and genitals, bleeding erosions form in place of the bubbles. Intoxication phenomena are gradually increasing. Kaposi's herpetiform eczema can be fatal (pneumonia, sepsis). A sick child is subject to mandatory hospitalization in the infectious diseases department, where antiviral and detoxification therapy is carried out.

Diagnostics

The diagnosis of ATOPIC DERMATITIS is based on the characteristic clinical picture and anamnesis of the disease, taking into account a set of mandatory and additional criteria, data from immunological and other laboratory studies.

Patients with ATOPIC DERMATITIS are characterized by an increase in blood immunoglobulins of class E (IgE), especially when combined with atopy of the respiratory tract. There are conflicting opinions about whether this indicator reflects the severity of the process. So, according to A.V. Shatilova et al. (1980), A.D. Atopic dermatitisand G.G. Kholmogorov (1983), with the exacerbation of the process, there is a sharp hyperproduction of IgE, which correlates with the severity of the disease.

In recent years, it has been suggested that the development of ATOPIC DERMATITIS is associated with a decrease in the production of g-interferon, which controls the production of IgE. Among children who developed ATOPIC DERMATITIS in the first year of life, there was a decrease in the concentration of g-interferon compared to the control group.

Patients with ATOPIC DERMATITIS have significant defects in cellular immunity. There was a decrease in the number of T-lymphocytes due to T-suppressors, especially with a common process. The development of immunodeficiency conditions in patients with ATOPIC DERMATITIS leads to its very severe course with frequent exacerbations and the addition of secondary infection.

Most patients with ATOPIC DERMATITIS are characterized by eosinophilia in the peripheral blood, which usually correlates with the severity of the disease and is associated with the activation of these cells.

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