

CLINICAL AND IMMUNOLOGICAL FEATURES OF PSORIASIS

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Abstract. Psoriasis is a polymorphic genetically mediated disease of the immune nature. The provoking factor in the onset of the disease may be the fact of transferring a viral infection - Varicella (chickenpox). Diagnostics includes both general examinations and specific differential tests. Treatment of psoriasis at the moment is multifaceted, however, any treatment methods are symptomatic.

Keywords: psoriasis, types of psoriasis, etiology of psoriasis, pathogenesis of psoriasis, diagnosis of psoriasis, treatment of psoriasis

Introduction

Psoriasis is a genetically determined skin disease that first appears and manifests itself during periods of exposure to provoking environmental factors. Psoriasis is one of the most common skin diseases that occurs in all latitudes of the globe with an uneven frequency of 0.1 to 3%, often occurs at the age of 10 to 25 years, but can first appear at any age [13, p. 302]. Psoriasis is equally manifested in men and women, but among children it is more common in girls, and among adults - in men (60-65%) [13, p. 302].

Characteristics of psoriasis. Definition and classification .

Psoriasis, or psoriasis, is a chronic , non-infectious disease that affects the skin, in advanced cases, the joints and internal organs [2, p. 190]. The characteristic signs of the disease are inflamed papules and conglomerates covered with a dense layer of silver scales [2, p. 13-14]. All types of psoriasis have a similar clinical picture: clearly defined plaque boundaries, thickening and swelling of the affected areas, hyperemia, itching and, in some cases, pain [10, p. 9-11, 2, p. 13-14].

According to the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10 L40), there are several types of psoriasis [10, p. 8].

- 1) L40.0 Ordinary (vulgar) - the most common form of squamous lichen, in which there are no complications. This group includes plaque and coin-like psoriasis.
- 2) L40.1 Generalized pustular - a severe form of the disease, complicated by a secondary infection . It affects several zones at the same time. Includes Zumbusch syndrome and impetigo herpetiformis.
- 3) L40.2 Persistent acrodermatitis (Crocker's dermatitis, Setton's dermatitis) - the contents of the pustules are sterile, there is no secondary infection. The main affected areas are fingers and nails.

4) L40.3 Pustulosis palmar and plantar (pustular bacterium) - affects the feet and palms of the doni. It manifests itself as pustules with sterile contents , which gradually increase in area.

5) L40.4 Teardrop-shaped - separately located papules that do not merge into plaques. The most commonly affected areas are the legs, hips, back, forearms, chest and neck.

6) L40.5-7 Arthropathic - clinical course resembles rheumatic arthritis.

7) L40.8 Other psoriasis (reverse) - conglomerates are localized in the armpits, in the inguinal and other natural folds. This type includes inverse flexion psoriasis.

8) L40.9 Unspecified psoriasis - combines several types of the disease, the clinical picture is quite wide.

Categories of psoriasis according to clinical classification .

1) By localization [10, p. 9-11].

- Palms and soles (pustular bacteria) .
- Joints (psoriatic arthritis).
- Mucous membranes (oral cavity, conjunctiva , genital mucosa).
- Nails (psoriatic onychodystrophy). Indentations and grooves on the surface of the nails, dullness of the nail plate, peeling, crumbling , translucence of capillaries, itching near the cuticle.

•The scalp (seborrheic psoriasis). It can spread to the area of the auricles and to the neck.

•Large skin folds (intertriginous psoriasis). Plaques form between the fingers, in the groin, in the armpits, under the breasts in women.

•Body surface (erythroderma). Severe form, the skin loses its main functions: temperature regulation, barrier, etc.

•Systemic defeat. It is dangerous because it combines several types of psoriasis at once.

2) According to the clinical picture (by manifestations) [10, p. 10]: common (vulgar), exudative , pustular , arthropathic , erythroderma .

3) According to the stage of development [10, p. 9].

•Progressive. It is characterized by the formation of papules, itching, an inflammatory reaction after irritation (scratching, attempts to pierce with a needle, etc.), the onset of peeling.

•Stationary. New papules do not form , old plaques do not increase in size, and desquamation is moderate.

•Retrogressive. The plaque heals, a white depigmented spot forms in its place, which no longer causes discomfort.

4) According to the seasonality of exacerbation [12, p. 2]: summer is

aggravated by the action of sunlight; winter develops due to intense cold affecting the skin; with non-seasonal psoriasis, there are no periods of remission, the disease proceeds year-round.

5) According to the area of skin lesions [12, p. 2]: limited - occupies less than 20% of the skin of the body; widespread - more than 20%; generalized - the entire skin is affected.

Etiology and pathogenesis. To date, the involvement of the immune system in the pathogenesis of psoriasis is widely recognized [6, p. 779-798, 5, p. 45-56]. Cells of the immune system that normally respond to antigens begin to attack healthy cells, usually skin cells. As a result of this process, the cells of the epidermal layer divide faster than usual. [14, p. 13]. They do not have time to mature, which is why strong ties are not established between them. Cells, coming to the surface, form protruding plaques with silvery scales.

Whole genome scanning for psoriasis-associated genes has identified immune-associated genes that provide a mechanical link between genetics and immunity [1, p. 201-209].

The disease mechanism includes crosstalk between the innate and adaptive parts of the immune system, as well as the action of TNF- α (tumor necrosis factor- α), the effect of interleukin-23 (IL-23) on the differentiation of T-helpers 1 and 17 (Th1 and Th17) and immune responses to other cells in the skin [8, p. 9-10].

Differentiation of Th1 and Th17 cells is stimulated by dendritic cells via IL-23. Pathogenic cells of the adaptive (T-cells) and innate (macrophages, mast cells, granulocytes) immune system produce several mediators that cause and maintain the characteristic features of psoriasis in both the dermis and epidermis. The latter, in turn, contribute to the maintenance of the inflammatory response through their mediators. The DNA complexes of decaying keratinocytes and the antimicrobial peptide LL-37 (cathelicidin) produced by the epidermis stimulate dermal dendritic cells to produce interferon- α [4, p. 135143]. In psoriasis, activated dendritic cells produce TNF- α and interleukin-23. TNF- α is a pro-inflammatory cytokine that enhances inflammation. It induces the appearance of secondary mediators and adhesion molecules that are involved in the pathogenesis of psoriasis [3, p. 487-501]. There are diseases that have similar symptoms. There is a need for **differential diagnosis**. For this purpose, [9, p. 9]: biopsy - pinching off a piece of skin with subsequent histological examination - (figure); laboratory diagnostics - often used to distinguish psoriasis from papular syphilis; blood tests for other latent infections for a better selection of antibiotics.

Instrumental diagnostic methods are mainly used in complicated forms of psoriasis associated with damage to the joints and internal organs. These include: X-ray of the joints, ultrasound of the heart, kidneys and bladder [14, p. 270].

Treatment. To date, psoriasis is an incurable disease, but can be treated

symptomatically. Knowing the pathogenesis, you can individually choose a method of treatment. Some of them are aimed at eliminating skin manifestations (reducing plaques, eliminating dryness and itching), others are aimed at keeping the immune system from “attacking” healthy cells [11, p. 9].

Treatment depends on the severity of the disease and the location of the lesions.

Topical glucocorticosteroid agents are used in all forms of psoriasis as monotherapy or in combination with other agents. They exist in the form of various dosage forms - ointments, creams or lotions [11, p. eleven]. Preparations containing analogs of vitamin D3 are applied to the affected areas of the skin, if the prevalence does not exceed 30% of the body surface [11, p. 14]. Preparations containing activated zinc pyrithione are used in the form of an aerosol, cream, and shampoo for the scalp, etc. [11, p. 16].

Types of phototherapy and their brief description

Phototherapy	Characteristic
selective phototherapy	Wavelength 280-320 nm. Initial radiation dose: 50-70% of MED. (0.01-0.03 J/cm ²). Mode: 3-5 times a week. In the absence of erythema, a single dose is increased every 2-3rd procedure by 5-30%. Course: 15-35 procedures.
Narrow Band Medium Wave Therapy	Wavelength 311 nm. Initial dose: 50-70% of MED (0.1-0.3 J/cm ²). Mode: 3-4 times a week. In the absence of erythema, a single dose is increased each procedure or through the procedure by 5-30%. Course: 15-35 procedures.
Therapy with excimer UV light	It is indicated for limited forms with a lesion area of no more than 10% of the body surface. Initial dose: 1 to 3 MED. An increase in a single dose of radiation is carried out every procedure or every 2nd procedure by 1 MED, or 25% of the previous dose. Mode: 2-3 times a week. Course: 15-35 procedures.
PUVA therapy with oral use of photosensitizers.	Dose of the drug: 0.6-0.8 mg per 1 kg of body weight before irradiation with long- wave UV light. Initial dose: 50-70% of MFD. Mode: 2-4 times a week. In the absence of erythema, a single dose is increased every 2nd procedure by a maximum of 30%. Course: 15-35 procedures.
PUVA therapy with external application of photosensitivity congestion	Photosensitizers are applied to lesions before irradiation. Initial dose: 20-30% of MFD. Mode: 2-4 times a week. In the absence of erythema, a single dose is increased every 2-3rd procedure by a maximum of 30%. Course: 20-50 procedures.

PUVA baths	Carry out with an aqueous solution of ammifurin . Irradiation - with long-wave UV light is carried out immediately after the bath. Initial dose: 20-30% of MFD, or 0.3-0.6 J/cm ² . Mode: 2-4 times a week. In the absence of erythema, a single dose is increased every 2nd procedure by a maximum of 30%. Course: 15-35 procedures.
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Relapses occur in the autumn-winter period (winter psoriasis). Exacerbation is facilitated by stress and certain foods (citrus fruits, sour berries, sweets in large quantities).

The first appointment with a dermatologist took place at the age of 10, with a diagnosis. Prescriptions consisted of preparations for external use : spray and Skincap cream (later Zinocap , Kartalin ointment). At subsequent appointments, Psoriaten ointment , Sulsen paste and shampoo , and a non-strict diet were prescribed. The last appointment with a dermatologist took place at the age of 12.

The patient indicates that in adolescence , psoriasis did not cause much discomfort, she thought about serious treatment as a student, as she had previously taken the disease for granted. The decision to control the disease was influenced by the ethical dimension and some of the references to psoriasis in various medical disciplines. The patient reports that she used only drugs prescribed by the doctor. It seems that psoriasis is difficult to remove from the scalp, however, drying agents cause even more peeling, and emollients, on the contrary, help to reduce it. She also notes that treatment during the period of remission (810 months between exacerbations) is more effective than during the period of exacerbation (2-4 months). The patient says that non-pharmacological treatment also contributes to remission, such as sanatorium treatment (sea water helps to reduce plaques), being outside in sunny weather (natural radiation), stress control, dieting.

Conclusion: Psoriasis is well enough studied to keep its course under control, relieve symptoms . However, the multifactorial nature of the genesis of this disease has not yet been taken into account in full to eradicate the disease as such. The patient can temporarily completely heal the skin, but since psoriasis is recurrent, plaques can appear at any time in life, especially in stressful conditions.

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