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Atopic Dermatitis and Mental Disorders Psychosomatic Relationships

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Abstract Atopic dermatitis (AD) is a hereditary, immunoneuroallergic, chronic recurrent inflammatory skin disease caused by atopy, manifested by intense itching, sympathetic skin reaction (white dermographism), mainly erythematous lichenoid rashes, in combination with other signs of atopy.

Keywords Atopic dermatitis, Chronic itchy dermatoses, Depression, Tension, Anxiety and aggressiveness, Systematics psychodermatological disorders, Quality of life of patients

1. Introduction

Atopic dermatitis (AD) is a hereditary, immunoneuroallergic, chronic, recurrent inflammatory disease of the skin caused by atopy, manifested in combination with severe itching, sympathetic skin reaction (white dermography), mainly erythematous lichenoid rash, and other symptoms of atopy. In 1923 American allergologists Coca A. F. and Cooke R. A. wanted to describe an unusual type of hypersensitivity to various environmental substances that occurs only in humans and is often found in families whose sensitivity was not previously clear, so they turned to philologist Perry from Columbia University for help. It was he who suggested that scientists use the term "atopy", which means "out of place" or "strange" [11].

Atopy is understood as a hereditary predisposition to allergic reactions in response to certain antigens. For the first time in the literature, the emperor Octavius Augustus was described as "atopic", in whom signs of severe itching, seasonal rhinitis and shortness of breath were observed. In addition, his family anamnesis was also described in detail: his grandson Emperor Claudius suffered from nasal symptoms of conjunctivitis, and his great-nephew suffered from an allergy to the epithelium of British horses [15]. For more than 80 years, the term "atopia" has been used worldwide, although this is sometimes debated.

AD is a very common and often severe suppressive dermatosis. Its incidence rates among skin diseases are variously cited in different sources, ranging from 20 to 40%. Results from epidemiological studies show that AD is more common among young people than in adults. Both sexes are equally ill, but cases are more common in women. AD is found in people around the world and in all races. In recent decades, the prevalence of the disease has increased significantly. For example, in Denmark, twins under the age of 7 born in 1960-1964 had a total incidence of 3%. For twins born from 1970 to 1974, this figure has already risen to 10%. The occurrence and chronic course of AD is due to genetic predisposition, leading to functional disorders of the nervous system, the influence of unfavorable environmental conditions, psycho-emotional disorders and pathologies of internal organs, metabolic, neurohumoral, neuromuscular diseases, allergic diseases, malnutrition, and various intoxication [16].

Clinical manifestations of AD are diverse but very specific and well-studied. The disease usually begins in early childhood, often in the second half of a child's life. It can last for many years, characterized mainly by remissions in the summer and relapses in spring or autumn. Over time, the morbidity of the disease weakens, and by the age of 30-40 most patients recover on their own. Three stages are distinguished in the development of the disease: infancy (usually from 7-8 weeks to 3 years), childhood (from 3 to 7 years) and adulthood.

In infancy and childhood stages, focal erythematous squamous rash with a tendency to exudation (vesiculation, hydration) is more common on the skin of the face, buttocks and limbs. In the adult stage, itchy erythematous lichenoid rash predominates on the bending surfaces of the limbs, with the development of lichenification on the neck (the skin thickens, roughens, skin patterns are detected). The degree of fluidity and spread of the process can be different, from limited (perioral) rash to large-scale skin lesions like erythrodermia. An indispensable sign of AD, regardless of the stage or clinical variant of withdrawal, is strong, tormenting itching, aggravating the course of the disease and deteriorating

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the patient's quality of life [6,11,14].

According to the clinical classification of Sergeev Y.V. [16], five forms of AD have been isolated: lichenoid, erythematous -squamous, pruriginous, eczematous, and atypical ones.

The diagnosis of AD by Hanifin a. Rajka's so-called criteria are based on the set of diagnostic signs of AD (1980) [15]. Diagnosis of AD requires the presence of at least three of the four major criteria and three minor criteria. To objectively assess the severity, prevalence and severity of itching of the skin process in AD, a group of researchers at the European Center for the study of AD developed a single scale of AD symptoms (SCORAD), a scale consisting of multi-parameter scores of AD severity assessment that can be used as the most objective (golden) standard in scientific research [17].

The exacerbation of the disease was considered to be psychogenically triggered by AD introduced into classical psychosomatic disorders by Franz Alexander in 1950 [18]. Since then, a large number of local [5,6,7,8,9,10,11,12,13,18] and foreign [10,17,12,18] studies have been devoted to the study of mental disorders in patients with AD, as well as the role of psychogenic effects on the factors leading to AD strain. Using the AD model, it seems possible to study mental disorders that develop in patients with chronic itchy dermatoses. The location of rashes in visible areas of the skin and severe itching lead not only to a decrease in the quality of life, but also to the development of pathological mental reactions to the disease, which significantly affects the patient's susceptibility to treatment and aggravates the condition of patients.

According to studies conducted, AD often intensifies after psychogenic effects and is often accompanied by mental disorders [12,13,15]. Thus, the association of AD and depressive disorders is established in the study of comorbidity of dermatosis and affective pathology was discussed. According to a cohort study conducted by Timonen M., 30% of patients with AD had episodes of depression during their lifetimes [14], which is significantly higher (5% to 10%) than the general population [16]. In studies by other authors, depression was found in 23-80% of patients with AD [1,5,11,12,14]. Almost half of the patients reported memory disorders and comorbidity of AD [6,17].

There is evidence that the psychological profile of atopy is characterized by depression, tension, concern and aggression [13,15,18]. However, the frequent development of mental disorders is usually explained by the nature of the skin disease (chronic course, intensity, including night itching and the location of rashes on visible areas of the skin). At the same time, psychosomatic studies conducted in patients with AD are largely based on the use of formulated psychometric diagnostic methods or psychological counseling, which does not allow assessing the share of real nosogenic mental deviations and the share of developed diseases independent of AD. In recent years a system of psychodermatological disorders has been created. According to this classification AD on the one hand, belongs to the group of psychosomatic diseases, and on the other hand, as chronic dermatosis, it can cause the formation of nosogenic reactions and pathological developments. However, studies have not been conducted on the characteristics of mental disorders in AD in these positions.

The purpose of this study is the complex study of psychosomatic disorders in AD cases and the determination of whether these changes depend on the clinical characteristics and course of skin diseases.

2. Materials and Methods of the Research

The research covered 97 patients (73 girls and 23 boys; the average age was 16.9±10.2 years old). Inclusion criteria for the study were those of J. M. Hanifin and g. Rajka's diagnosis of AD, approved in accordance with international diagnostic criteria [17], and the age of patients between 8 and 18 years old. Exclusion criteria are as follows: manifestation of schizophrenic/schizoaffective/affective psychosis, organic damage to CNS, dementia, psychophaolic substance addiction, exacerbation or periods of decompensation of other severe somatic disorders.

The study was carried out using a clinical method that provides a comprehensive dermatological and psychopathological examination. Dermatological examination included analysis of anamnestic and clinical indications, confirmation of the diagnosis of AD. The degree of severity and prevalence of the process in the skin in all patients was assessed using the SCORAD index (a method recommended by the European Working Group on AD) [12], which took into account the prevalence of rashes, the nature of rashes (erythema, swelling, hydration, excoriation, lichenification, dryness) and the degree of latency of subjective symptoms such as itching, insomnia. Psychopathological examinations of borderline mental pathology and psychosomatic disorders were carried out by the staff using special tests.

3. Results

A dermatological examination found that the disease in patients lasted an average of 10.99 ± 12.04 years. In terms of incidence, patients were distributed as follows: mild AD was diagnosed in 37 patients (38.1%), moderate AD in 30 patients (31%), severe in 19 patients (19.6%), and acute one in 11 patients (11.3%). Patients with different forms of unclassified studies of AD included 72 (74.2%) patients diagnosed with an erythematous-squamous form of AD, 17 (17.5%) with eczematous, 7 (7.2%) lichenoid, and 1 (1.1%) with prurigoid form of AD. Of these, 37 (38.1%) had a chronic skin disease at the time of examination and 60 (61.9%) had AD exacerbation.

A psychopathological examination found a number of mental disorders in 52 patients (53.6%), these disorders developed not only at the expense of the effects of dermatological pathologies (nosogenic reaction and personality development), but also not directly related to AD. The examination revealed many mental disorders that included

nosogenic reactions, hypochondric pathocharacterological developments, affective disorders, and slow-moving schizophrenia (a number of patients had multiple mental disorders at once).

Anticipating the clinical features of nosogenic reactions, it should be noted that in patients with AD, their manifestation is not only a course of skin disease (often strain the disease without a clear reason for the patient, the location of rashes in visible places), it is determined by infectious nature of skin diseases in the population, and is also associated with interstitial anomalies (personality disorders), which are responsible for the predisposition to the formation of pathological reactions and significantly affect the symptoms.

The formation of sensitive nozogenic reactions (n = 12.12.4%) is dominated by social phobic events associated with a cosmetic defect observed in AD, while physical discomforts associated with skin disease affect patients at an imperceptible level. Social phobia is expressed in the fear that others will detach it for fear of infection, mainly due to dissatisfaction and rash on visible areas of the body. Pathological fears are accompanied by incorrect, unsystematic and not reaching the imaginary level of ideas: it seems to patients that those around them (on the street, in transport) are looking at them with pity, or look at the patient, whom they deliberately withdraw or move away from, discuss with each other whispering the fear of being infected, and protest at the presence of a patient.

According to the plot of the prevailing fear, the following pathological avoidance behavior is formed: before going out in front of people, patients mask their skin with cosmetics, choose the most closed clothes, and often completely refuse to enter among many.

Premorbid characteristics of patients with this type of nosogenesis are expressed schizoid and hysterical, regardless of the age of AD manifestation.

When assessing the demographic characteristics of the clinical picture, the average age should first be noted, which was 10.3±12.7 years old in the group of sensitive reactions and was 3 years less than the average age in the sample. The second distinguishing feature of this group of patients was the SCORAD indicator, which was 34±3.5, lower than the average of the total sample (40.5±7.07). According to a dermatological investigation, the group of sensitive nozogenic reactions was dominated by the erythematous-squamous form of AD, with this form of AD dominant in all of the samples studied (only one patient had an eczematous form).

These data suggest that the development of sensitive nozogenic reactions is characteristic of younger patients with relatively mild AD levels. Anxiety and hypochondric nozogenic reactions (n = 16.16.5%) developed in adults who were observed in childhood and then had long-term complete clinical remission, with AD debut as adults. Signs of nosophobia come to the force, expressed by the fear of turning the disease into a chronic form, damage to internal organs, and constant stationary treatment. In order to achieve a complete recovery from AD, patients resort to repeated treatment, hospitalization, seek to undergo all kinds of available examinations to determine the underlying cause of AD and appropriate therapy, and also study the available literature on AD diagnostics and treatment.

Premorbid personality traits involved in the formation of the type under consideration of nozogenic reactions are expressed by the interstitial anomalies of the anxiety circle, mainly obsessive-compulsive personality disorder and Schizoid one.

Analysis of dermatological examination data showed that the specificity of the anxious hypochondrial nozogen reaction in patients with AD, primarily its average duration (7±5.3) was the shortest compared to other nozogenic reactions, and secondly, the severity of AD in SCORAD (54±19.1) was the highest, unlike other nozogenic reactions. It should be noted that indicators of the clinical dynamics of somatic pathology such as rapid development and severe degree of symptoms are traditionally considered among the factors contributing to the formation of alarming nosogenic reactions. In addition, the average age of patients with this type of reaction was 34±5.1 years old, more than those with sensitive nozogenic reactions. Summarizing the characteristics of AD in a group of patients with various nosogenic reactions, it can be noted that the clinical course of AD is usually characterized by the reoccurrence of rash after the completion of the infancy stage of AD, followed by a complete or almost complete clinical remission, and later, by adolescence, reactions within the dynamics of personality disorders. Unlike anxious hypochondrial reactions found in adult patients (34±5.1), sensitive nozogenic reactions were observed in young people (23.3±3.1). The average SCORAD was lowest (34) in patients with sensitive reactions and highest (47) in patients with anxious hypochondrial nozogenic reactions. Thus, the development of certain nozogenic reactions may be related to age, severity, duration of AD, but not to its clinical form.

In cases where the exacerbation period of AD is often accompanied by observed relapses and there are almost no complete clinical remission periods, deeper and more stable signs of the dynamics of premorbid features of personality disorder within hypochondric development (HD) have been identified.

Clinical analyses have identified 4 following types of HD in ATD: paranoid, aberrant hypochondria, masked hypochondria, and neurotic hypochondria.

Paranoid HD [2] (n = 3) was expressed by inventive ideas related to the belief in the possibility of an independent complete cure of skin disease. Patients seek to develop self-medicated paramedical treatments, sometimes accompanied by autodestructive (harmful or dangerous to health) actions (ingesting crushed stones, metal powders prepared by themselves). This type of development is formed in patients with a paranoid circle (a tendency to form overestimated ideas in combination with suspicion and distrust of others, which are often perceived as potential sources of threat to the realization of their aspirations).

The manifestation of skin diseases in these patients is observed at the age of 10-18 years old and is characterized by severe rejection. Erythrodermia was found in all patients with paranoid development with diffuse AD (erythematous

-squamous form, n=2) or with pronounced dry skin accompanied by sub-febrile fever and lymphadenopathy (n=1) and with dandruff of the skin lining. Only in one case AD was exacerbated by psychogenic exposure (after the patient lost his place of work).

Aberrant development by type of hypochondria [11] (n = 6) is characterized by an insufficient assessment of the severity of the general condition (lack of emotional reaction to the threatening meaning of the diagnosis), a desire to minimize ideas about the possibility of severe somatic disease. Signs of skin cover pathology are interpreted only as a slight deviation from the norm. In some cases, this type of hypochondria is accompanied by misbehavior, which is often manifested by rejection of medical care and medical procedures. The dermatological condition of this group of patients is characterized by a mild to moderately severe course of AD, the location of the rash mainly in closed areas of the skin. Premorbid characteristics of patients with this type of development are expressed by accentuation by the type of segmental depersonalization acting within the hyperthymic type [12].

Development according to the type of masked hypochondria [10] (n = 17) is manifested in a systematic step-by-step adaptation to the manifestation of the disease as a typical, inevitable companion and mandatory component of everyday life. With masked hypochondria phenomena patients establish a "partnership" relationship with the disease, following medical recommendations with the regular implementation of the necessary therapeutic and preventive measures. On the other hand, they continue to lead an active lifestyle without discounts due to health. In the case of masked hypochondria, HD proprioceptive diathesis is formed in people with accentuation type. The following features of the course of dermatological diseases are noted: AD or 1) manifested in early childhood, and rash persisted throughout life, with varying course and severity of the disease, from limited episodic residualizing erythematous-squamous rashes to widespread lichenoid foci reaching tortiberitrodermia levels, which did not achieve clinical remission for many years either; 2) or the development of this dermatosis was noted after 15-20 years, but the disease continued in a mild form (limited rashes occur only occasionally and are fully regressed in the warm season).

Development by neurotic hypochondria type [16] (n = 7) is followed by the predominance of clinically somatized anxiety manifestations and increase in actual symptoms of AD due to somatoform disorders (the appearance of itching as part of somatoform disorder, followed by increase in itching scars). Patients show a clear tendency to create a frugal lifestyle (a protective regime that significantly limits household and official workloads), and any attempts by medical personnel and relatives to activate the patient are repelled by indifference and accusations of lack of understanding.

In the case of neurotic hypochondria type, development is detected in individuals with neuropathic constitutions within the schizoid type. This type of development is mainly observed in patients with AD of mild to moderate degree, subject to conventional therapy, but often open areas of the skin are damaged.

Seasonal depression has been frequently identified in patients with affective disorders identified during the examination (35.3% of all the patients with depression). The second most common in terms of prevalence is psychogenically triggered depression (in 29.4% of cases). Endogenous depressions are slightly less pronounced (17.6% of patients with depression). Nozogenic depression was diagnosed in only 11.6% of the patients and ranked only fourth in the prevalence in the sample studied. Postpartum depression has been found in 5.9% of depressed atopics.

In a dermatological status analysis, patients with depression at the time of examination were found to have a slightly higher average SCORAD (46.4) than patients who did not have a single episode of affective disorders during their lifetime (38.1) and were above the average SCORAD in all studied samples (40.6).

However, these differences did not have statistical significance, and this condition was attributed to the low number of patients with depression in the sample examined. In the group of patients with depression observed, rashes were more localized on the face, which corresponds to the data presented in the literature [7,17]. It was also found that the highest value in a subjective assessment of the intensity of itching according to SCORAD (10 points) is characteristic of the patients with nosogenic depression. When comparing the recurrence rate of AD in a group of patients with depression to a group of patients with no life-time affective disorders, it was found that the development of depression was not dependent on the recurrence rate of skin diseases. Thus, according to anamnesis or examination, patients with depression had an average of 10.6 relapses during life, while patients without episodes of affective disorders had an average of 11.2 relapses of AD.

In patients with slow-onset schizophrenia, the average duration of AD (18.3 years) did not differ significantly from that in patients without mental illness (10.1 years). The average number of AD relapses observed in patients with SCS (17.1) did not differ significantly from those in other patients (15.2). At the same time, patients diagnosed with slow-onset schizophrenia had a lower average of SCORAD than the rest of the patients examined (40.9 points compared to 36.6). In 10 patients (81%) on the examination, the erythematous-squamous form of AD was diagnosed, and in one case only it was eczematous type (9%). Comparison of treatment and control groups has shown that prescription of complex psychopharmacotherapy not only leads to a decrease in psychopathological symptoms compared to the control group, but also contributes to the faster loss of rashes and itching, which are the main signs of atopic dermatitis.

Thus, the study confirmed data from previous studies on the high prevalence of mental disorders in patients with AD identified in 53.6% of the patients. A psychopathological examination revealed a wide range of AD psychiatric pathology, represented by nosogenic reactions, hypochondrial development of the individual, affective disorders and slow-developing

schizophrenia.

At the same time, it was found that mental disorders in patients with AD are not only associated with a decrease in the quality of life of the patients, but also lead to a significant decrease in patients' susceptibility to conventional dermatotropic therapy. The information obtained indicates the need for adequate psychiatric care for patients in this group. The effective treatment of mental disorders that are comorbid with AD requires a comparative approach, taking into account clinical typology of psychopathological disorders.

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