The Causes of Clinical Polymorphism in Psoriasis

Psoriasis is considered as multifactorial disease, when in 350 patients there were studied different hereditary (HLA system) and environmental (immunological, biochemical and others) factors which had contributed to the development of the predominant form of the psoriatic process. The performed investigations showed that treatment of patients with psoriasis, especially its severe forms, should be complex because various changes in different body systems underlie its nature.

Keywords: Psoriasis, hereditary and environmental factors, clinical forms

UDC: 616.517:575

Introduction

Psoriasis is a skin multi-factorial disease widespread all over the world. According to many authors 2-7% of population are suffering from this disease in the various countries. (Baker, 2001; Elberg, 1997; Langley et al., 2005; Mordovtsev et al., 2001; Rakhmatov and Rakhmatov, 2001; Shilov, 2001). Psoriasis is defined as not isolated dermatosis but systemic disease with dominating expressions on the skin (Baker, 2001; Belyaev, 2005; Mordovtsev et al., 2001; Rakhmatov and Rakhmatov, 2001). Frequently the expanded skin lesions and/or severe forms of the arthropathy syndrome result in disability of the patients, that, consequently, requires to consider psoriasis as a serious medical-social problem requiring significant costs for treatment and rehabilitation of the patients (Ayzatullov and Yukhimenko, 2001; Belyaev, 2005; Rakhmatov and Rakhmatov, 2001).

The psoriasis manifests with the signs of metabolic syndrome which are responsible for processes of hyperproliferation and differentiation of the keratinocytes which are basis for morphological changes in this dermatosis. The various disorders revealed in the endocrine system (frequent development of diabetes mellitus), cardiovascular system (strokes and infarctions), liver functional disorders resulting in development of dyslipidemia as well as other features of homeostasis (immune and cytokine system) present the general conception of multifactorial nature of psoriasis (Griffits and Barker, 2007; Langley et al., 2005; Rakhmatov and Rakhmatov, 2001; Wakkee et al., 2007). On the basis of this the methods of complex treatment for patients with psoriasis including methods of anti-cytokine therapy using biological agents, blockers of some cytokines allowing the tactics of treatment to be changed cardinaly, particularly for the dramatically severe forms of dermatosis (Terletskiy, 2007; Smith and Baker, 2006).

Materials and methods

On the basis of Medical center of Z.B.Keshileva (Almati-city) during the period from 2002 to 2010 there was performed clinical-laboratory examination of 350 patients with psoriasis (199 males and 151 females) at the age from 18 to 65 years. Among the random selection in 253 (72.3%) patients the common form of disease was established, exudative form – in 48 (13.3%) patients, arthropathic - in 27 (7.7%), and erythrodermic form of dermatosis – in 22 (6.3%).

There were carried out neurophysiological, immunogenic, immunological, immunoenzymatic, biochemical and psychological methods of examination allowing
identification of trigger factors, involving in the development and progressing psoriatic process as well as choice of appropriate correcting therapy for individual patient.

**Results**

In Kazakh patients with psoriasis there was revealed association with such antigens of histocompatibility as HLA-A1, HLA-A9, HLA-B13, HLA-B17 and HLA-Cw3 and in some clinical forms of dermatosis there were identified special haplotypes from above-mentioned antigens.

The hyperlipoproteinemia type IV significantly exceeding population threshold was found in 9.6% of patients with psoriasis, moreover there were established not only increased values of the low-density lipoprotein contents, but significant accumulation of phospholipids lysoforms in the various biological objects (blood serum, erythrocyte and thrombocyte membranes) that indicates about adaptation-compensation disorders in the patients with psoriasis.

The considerable disorders of both cellular and humoral immunity indicating state of secondary immunodeficiency induced, first of all, by increase in suppressive activity that partially confirmed by parameters CD95+lymphocytes, responsible for apoptosis more changing in the patients with psoriasis, particularly in its severe forms. This immunological picture, reduction of immunological control, consequently, results in development of endogenous intoxication which, in its turn, can have strong effect on the general progressing of psoriatic process and induce torpidity of the treatment performed.

The investigations of neurophysiological characteristics (electroencephalogram and others) in 303 patients with various forms of psoriasis revealed special diffusive changes without identified locality with equivalents indicating about increased evoked cortex and activity of the structures of oral site of the brain stem (cortex, diencephalic area) in 83.5% of cases. Moreover, these disorders were correlated with psychological structure of the individuum evaluated by MMPI test.

It is naturally that prolonged development of psoriasis, poor efficacy of therapy performed in some cases results in psychic troubled in the patients that, in its turn, forms unfavorable psychoemotional state that effect on the clinical course of the main disease. Therefore adequate therapy for patients with psoriasis demands understanding psychological structure of the patients.

The use of MMPI test allowed to characterize the state of patients with psoriasis as to be neurotic. The patients with unstable emotional state and increased anxiety prevailed. The disease aggravated premorbid state of the personality that made difficult interpersonal relations and resulted in the further social isolation.

Between genetic and environmental factors there was established heterogenous connection which explained many various forms of clinical pictures of psoriasis, etiological causes of occurrence of severe forms of dermatosis. The studies showed that presence of antigen HLA-B13 was accompanied by disorders of bioelectric activity of the brain, for patients there were characteristic neurotic and psychotic profiles of MMPI test, the significant immunologic disorders, particularly of cytokine status, as well as appearance of the syndrome of endogenous intoxication were revealed.

The clinical features of psoriasis with identified risk factors of dermatosis were carefully compared and analyzed in each patient. On the basis of the results of complex study of different immunogenetic, immunologic, biochemical and neurophysiological factors and guided by clinical signs of disease we identified special, scientifically-based groups for further correcting therapy.

Thus, 253 patients with the common form of psoriasis were divided into V groups. Group 1 included 81 (32.0%) patients with presence of large-plaque elements of different localization for which marked disorders of liver function were characteristic and neurotic
scales of MMPI test prevailed. Group II (59-23.3%) consisted of patients with presence of small-plaque elements, among which there were predominant patients with psychotic profiles of MMPI test, with disorders of neurophysiological parameters, and in rare cases there were found functional disorders of the liver and immune status. Group III (29-11.5%) comprised patients with psoriasis guttata who had correlation (r=0.89) with immune and cytokine status (IL-4, TNF-α). Antigen HLA-B8 prevailed more than 2.5 times in this group. Group IV (48-18.9%) with common form of psoriasis there were included patients with eruptions on the hairy part of head (sebopsoriasis) accompanied by intensive skin pruritus. Among these patients there were predominant neurotic and psychotic profiles of MMPI test, dyslipidemia was observed as well as with higher frequency antigens HLA-A11, HLA-B13, HLA-Cw3. Group 5 (37-14.6%) had patients with psoriasis with predominant lesions of palmers and plants among which there was noted state of secondary immunodeficiency and functional liver disorders. Among this group of patients the neurotic scales of MMPI test prevailed. Frequency of HLA antigens distribution in patients of group V was equal with those in common form of psoriasis.

The studied 48 patients with exudative form of psoriasis were divided into two groups: Group I (12 patients) was characterized by presence of exudative component on the psoriatic focuses of any localization, among which there were revealed significant immunologic and functional liver disorders. Among the antigens of HLA system HLA-A3, HLA-B8, HLA-Cw6 prevailed; group II (36 patients) were characterized by eruptions in the area of large skin folds (intertrigo-like form), among which the immunologic disorders and significant increase in TNF-alpha were most important. Frequency of HLA antigens were similar those in group I of exudative psoriasis.

The patients with arthropathic form of psoriasis were divided into II groups in relation to distribution of the skin expressions of dermatosis. Clinical picture in 18 patients (group I) with arthropathic form of psoriasis was characterized by damage of digital joints of hands and feet and multiple small- and large-plaque eruptions. Among these patients there were revealed significant neurophysiological changes type II and III, immunologic and biochemical disorders, as well as changes in parameters of cytokine status (TNF-alpha). Antigen of HLA system, such as HLA-B8, HLA-B35, prevailed. In group II (9 patients) the patients with signs of convulsive syndrome but minimal skin manifestations of dermatosis were studied. The disorders of immune and cytokine status, biochemical and neurophysiological parameters were similar those in group 1, however in group II the patients were prevailed with presence of antigen HLA-B27.

The patients with psoriatic erythroderma were also divided into 2 groups: Group I (15 patients) was characterized by universal skin process including lesions of the face, palms and plants and in these patients all studied trigger factors were changed very much; Group II (7 patients) was interesting by association of psoriatic erythroderma and arthropathy not only of digital joints of palms and plants but also by spinal cord. In this patients there were noted most disorders in the cytokine system that is the basis for use of biological agents especially in this form of psoriasis. Antigens HLA-Cw1, HLA-Cw6 and haplotype HLA-A11+HLA-B13+HLA-Cw1 prevailed among the most met antigens of HLA system.

**Conclusion**

Multifactorial nature of psoriasis presumes polymorphism of clinical manifestations of dermatosis, when there is genetic determination from one side and effect of various environmental factors from other side (Mordovtsev et al., 2001; Terletskiy, 2007). Considering psoriasis as systemic disease (Rakhmatov and Rakhmatov, 2001) we can suggest functional disorders in many systems and organs which result in change of homeostasis and should be taking into account in development of pathogenically based therapy of this dermatosis (Smith and Baker, 2006). Of course, the progress of immunological examinations, particularly, capacities of immune-enzymatic analysis,
allowed study of special cytokines, particularly proinflammatory cytokine THF-alpha that resulted in appearance of biological preparations (infliximab). The investigations performed showed that treatment of patients with psoriasis, especially its severe forms, should be complex because various changes in different body systems underlie its nature.

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