

Psoriasis Is Followed by Increased Level of Endogenous Intoxication

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ABSTRACT

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Introduction

Psoriasis is a chronic immune-mediated inflammatory skin disease. About 2 – 3 % of people in the world are suffering from psoriasis. There are about 14 million of people in the Europe affected with psoriasis. Etiology of the disease is unknown, but there are a lot of factors that can induce the appearance and aggravation of psoriasis. In the mild course of psoriasis there are used the topical treatment. In the moderate-to-severe forms of the disease there are recommended the use of phototherapy and basic system therapy in combination with topical agents. Biological therapy is used in the cases when basic therapy is ineffective, under severe somatic pathology. In Russian Federation about 60 % of patients are used only topical therapy, 33% – topical treatment in combination with basic system therapy and only 2 % - biological therapy [1]. Endogenous intoxication (endotoxycosis) is a pathophysiological process that is characterized by the formation and accumulation in organism's tissues and body fluids of different substances and metabolites, endotoxins in excessive concentrations or in forms that are not characteristic for the normal metabolism. Destructive processes, impairments in membrane functions, disturbances of detoxification processes and activation of catabolic reactions are the main causes of the development of endotoxycosis that leads to the impairments of homeostasis. Endogenous intoxication accompanies practically all diseases and plays an important role in their pathogenetic mechanisms [2].

It is necessary to indicate that middle-mass endotoxic molecules (MMEM) are served as an integral parameter of endogenous intoxication. MMEM represents a fraction of different blood plasma substances with the molecular mass of 300 - 8000

Dalton. Later there were found elevation of MMEM content in plasma in different somatic, nervous and mental diseases [3]. It is considered that increased MMEM level in the blood is the reflection of the aggravation of the degree of endotoxycosis [4]. It is necessary to mean that in normal condition MMEM fraction mainly reflects the catabolic processes whereas in pathological conditions MMEM fraction reflects combination of catabolic, destructive and distorted metabolic processes that take place in the organism. The aim of the study was to estimate MMEM concentration in blood serum of patients with psoriasis and discuss the possible role of these substances in pathogenetic mechanisms of psoriasis.

Materials and Methods

There were clinically investigated 23 patients, 11 of them were investigated biochemically. All patients suffered with prevalent psoriasis vulgaris of moderate-to-severe forms in progressive phase; average age – 46.3±12.7 years. None of the patients received any systemic therapy for 2 months and topical treatment for 1 month before inclusion in the study. The rash was represented by scaly papules and squamous plaques with disseminated characters. Average value of PASI index was 12.6 ± 1.9. MMEM concentration in serum was estimated according to Nikolaichik V et al. [5]. Statistical significance was calculated using Mann-Whitney U-test. The difference was considered as significant at p<0.05.

Results and Discussion

Our investigation had shown that psoriasis was followed by significant increase of MMEM concentration in the blood serum. It was found that MMEM concentration in blood of patients was 0.426

± 0.015 mg of MMEM/ml of serum that was significantly higher, for 15.9 %, in comparison with control group (0.365 ± 0.013 015 mg of MMEM/ml of serum; $p < 0.01$). Thus our results have shown that psoriasis is followed by increased level of MMEM concentration in blood serum. There are views in the literature that MMEM level is one of the criteria of expression of endotoxicities. It is possible that under the diseased state there are accelerate the catabolic processes and, in particular, the proteolytic processes that lead to the increase of concentration of peptides with different molecular masses. There is an opinion in the literature that MMEM can block different receptors, inhibit the activity of different enzymes, negatively influence on energy, immune and hormonal processes in organism of patients [6]. So, it is possible to think that in patients with psoriasis can take place the accumulation of "pathological" components of MMEM fraction that ultimately induced the development of endotoxycosis.

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