

On The Results Of Microbiological Studies Of The Skin In Patients With Psoriasis.

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Resume

In dermatological practice, in the pathogenesis of chronic dermatoses, much attention is paid to the state of the skin microbiome. According to research, the role of superantigens – protein substances – bacterial toxins of staphylococcal, streptococcal nature, as well as fungi of the genus *Candida*, takes place in the pathogenesis of psoriasis.

Key words : psoriasis, skin microbiome, staphylococcus spp., colonization.

The purpose of our research was to assess the state of the skin microbiome in patients with psoriasis.

Research materials and methods. We examined 94 patients with psoriasis aged 12 to 69 years who received inpatient treatment at the dermatological department of the Research dermatology center of clinic of the Ministry of Health of the Republic of Uzbekistan. Taking into account gender, 40 patients were male and 54 were female. Clinical, biochemical, microbiological and statistical studies were conducted in all patients. The control group consisted of 72 healthy individuals of the appropriate age.

The results of the study. Microbiological studies of the skin in patients with psoriasis have shown a high detectability of opportunistic microorganisms of the Micrococaceae family - staphylococcus spp., which amounted to 62.7% of cases. Taking into account the clinical course of dermatosis, frequent seeding of opportunistic microflora was noted in the progressive stage - 72.8%, whereas in the stationary stage - 27.1%, respectively. According to the species identification of staphylococci in the examined patients, *St.epidermidis* was most often sown - *St.epidermidis* was most often sown - 32.2% and *St.haemoliticus* – 27.1%, *St. aureus* – 23.7% of cases. cases with increased colonization, which caused the development of the syndrome of colonization resistance of opportunistic microorganisms.

Conclusion: Thus, the results obtained indicate that the role of opportunistic microorganisms in the clinical course of psoriasis is of clinical importance, the degree of colonization plays an important role in the pathogenesis of psoriasis, causing the development of the syndrome of colonization resistance of opportunistic microorganisms on the skin of patients.

Recently, in dermatological practice, more attention has been paid to the state of the skin microbiome in the pathogenesis of chronic dermatoses. [1, 11, 13, 14,16] According to studies, superantigens play a role in the pathogenesis of psoriasis - protein substances - bacterial toxins of staphylococcal, streptococcal nature, as well as fungi of the genus *Candida*, which bind to the products of class II HLA genes and components of various T-cell receptors, stimulating the proliferation and number of lymphocytes. [5,6,16] Research on the state of the skin microbiome in patients with psoriasis is important, since the severity of the skin pathological process, the development of cracks, intense itching, most often accompanied by the progressive-stationary stage of psoriasis leaves its mark on the state of the skin microbiota.

The aim of our research was to assess the state of the skin microbiome in patients with psoriasis.

Material and methods of the study. We examined 94 patients with psoriasis aged from 12 to 69 years, who received inpatient treatment in the dermatology department of the clinic of the Republican Specialized Scientific and Practical Medical Center of Dermatovenereology and Cosmetology of the Ministry of Health of the Republic of Uzbekistan. Taking into account gender, 40 patients were male and 54 were female. All patients underwent clinical, biochemical, microbiological and statistical studies. The control group consisted of 72 healthy individuals of the corresponding age.

Results of the study. According to the clinical form, among 94 patients with psoriasis, the vulgar form was - 64 patients (65.3%), seborrheic form - 2 (2.1%), palmar-plantar - 23 (24.5%) and psoriatic erythroderma - 5 (5.3%), respectively. Taking into account the clinical course, among 94 patients, 68 (72.3%) patients had a progressive dermatosis and 26 (27.6%) had a stationary course. According to the clinical course, the progressive stage was diagnosed - in 69 (73.4%) and the stationary stage - in 25, which amounted to 26.6%. The results of bacteriological studies showed that among the examined 94 patients, opportunistic microorganisms of the Micrococacceae family - staphylococcus spp. were cultured in 59, which amounted to 62.7% of cases. It should be noted that bacterial skin tests were performed during an exacerbation of the skin disease. Moreover, among 59 patients with psoriasis with positive culture tests, 43 (72.8%) were in the progressive stage and 16 (27.1%) were in the stationary stage.

Table 1. Species identification of Staphylococcus spp. in patients with skin diseases (%)

group	St. aureus	St. epidermidis	St. saprophyticus	St. Haemoliticus
Patients with psoriasis n=49	14*	19*	10	16
Control group, N=72	2	7		

Note: * reliability indicator in relation to the healthy control group ($P < 0.05$)

As follows from the table, the examined patients with psoriasis have an increased seeding of staphylococcal flora. According to species identification, st. epidermidis was most often seeded - in 19 (32.2%) and st. haemoliticus - 16 (27.1%), st. aureus - in 14, which amounted to 23.7% of cases. While St. saprophyticus was seeded - in 10 patients, which amounted to 16.9% of cases, respectively. Moreover, in 7 (7.4%) patients, simultaneous seeding of two types of staphylococcal flora was noted - st. epidermidis + St. saprophyticus - in 3 patients and st. epidermidis + st. Aureus - in 4, which caused mixed bacterial contamination involved in the exacerbation of the skin process.

To assess the state of the skin microbiota, great importance was attached to the degree of colonization of staphylococcal flora in the lesions of patients with psoriasis. (Table 2)

Table 2. The nature of colonization of Staphylococcus spp. in the examined patients (CFU/cm²)

группа	St. aureus	St. epidermidis	St. saprophyticus	St. Haemoliticus
Patients with psoriasis n=59	65,6 $\pm$ 0,9*	36,8 $\pm$ 1,1*	33,3 $\pm$ 1,4	48,6 $\pm$ 0,9

Control group, N=72	3,5 $\pm$ 0,1	6,6 $\pm$ 0,4		

Note: * - reliability indicator in relation to the indicators of healthy individuals ($P < 0.05$)

As can be seen from the table, the examined patients have an increased colonization of staphylococcal flora on the skin of the lesions, exceeding 18.7 times compared to the indicators of healthy individuals and were statistically significant. ($P < 0.05$).

The analysis of the obtained results indicates that in patients with psoriasis, on the skin lesions in the acute stage of the disease, there is a high detection rate of opportunistic microorganisms of staphylococcal flora with high colonization, which may be one of the provoking factors for the development of not only exacerbations, but also resistance to external therapy.

Thus, the obtained results indicate that the role of opportunistic microorganisms in the clinical course of psoriasis has clinical significance, the degree of colonization plays an important role in the pathogenesis of psoriasis, causing the development of the syndrome of colonization resistance of opportunistic microorganisms on the skin of patients. In this regard, the assessment of the degree of contamination of opportunistic microorganisms can be an indicative criterion for laboratory diagnostics of the state of the skin microbiota in patients with psoriasis and the development of new therapeutic interventions.

Conclusions:

1. In patients with psoriasis, there is a high detection rate of opportunistic microorganisms of the Micrococacea family - staphylococcus spp., which amounted to 62.7% of cases.
2. Taking into account the clinical course of dermatosis, the highest seeding of opportunistic microflora was noted in the progressive stage - 72.8%, while in the stationary stage - 27.1%, respectively.
3. According to the species identification of staphylococci, st. epidermidis was most often seeded in the examined patients - st. epidermidis was most often seeded - 32.2% and st. haemolyticus - 27.1%, st. aureus - 23.7% of cases. cases with increased colonization, which caused the development of colonization resistance syndrome of opportunistic microorganisms.

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