

CONDITION OF CYTOKINS STATUS AT PATIENTS OF SEBORRHOEIC DERMATITIS

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✓ Resume

To articles are presented a condition of cytokins status of immune system at 32 sick of seborrhoeic dermatitis. Results of research have shown that one of the pathogenetic mechanisms of a clinical current of the chronic form of disease is the inconsistency of system of cellular reactance of the organism, characterized by decrease about - (FNO-ALPHA) and anti-inflammatory (ИЛ-4) cytokins that promotes development microbic contamination on the skin at patients of seborrhoeic dermatitis.

Key words: seborrheic dermatitis, clinical features, skin, skin scales, erythema, papular rash, microflora, cytokines, immune status.

СОСТОЯНИЕ ЦИТОКИНОВОГО СТАТУСА У БОЛЬНЫХ СЕБОРЕЙНЫМ ДЕРМАТИТОМ

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✓ Резюме

В этой статье был исследован цитокиновый статус (ИЛ-4, ФНО-альфа) иммунной системы больных с себорейным дерматитом. Результаты научно-исследовательских работ показывают, что одним из патогенетических механизмов хронического течения заболевания является несогласованность реактивности клеточной системы организма, то есть достоверное снижение уровня цитокинов (ИЛ-4, ФНО-альфа) связанное с воспалением. Что в свою очередь привело к развитию микробного заражения у пациентов с себорейным дерматитом.

Ключевые слова: себорейный дерматит, особенности клиники, кожа, кожные чешуйки, эритема, папулезные высыпания, микрофлора, цитокины, иммунный статус

СЕБОРЕЯЛИ ДЕРМАТИТ БИЛАН КАСАЛЛАНГАН БЕМОРЛАРДА ЦИТОКИН ТИЗИМИНИНГ ХОЛАТИ

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Ушбу мақолада себорея дерматит билан касалланган 32 та беморларда иммун тизимининг цитокин статуси (ИЛ-4, ФНО-альфа) ўрганилди. Олиб борилган илмий –тадқиқот натижалар шуни кўрсатдики, касалликнинг сурункали кечишидаги патогенетик механизмларидан бири бу организмнинг хужайравий тизимининг реактивлигини ўзлаштирилмаганлиги, яъни яллигланишга алоқадор цитокинлар (FNO- а, Ил-4) кўрсаткичларини ишончли камайганлигидан далолат берди. Бу эса ўз навбатида себорея дерматитли беморларда микробли контаминацияни ривожлантиришга олиб келди.

Калит сўзлар: себореяли дерматит, клиник кечиш хусусиятлари, тери, тери кипикчалари, эритема, тугунчали тошмалар, микрофлораси, цитокинлар, иммун ҳолат.

Relevance

Seborrheic dermatitis (DM) is a chronic relapsing disease characterized by lesions of skin areas rich in glands. Diabetes is more common in

people aged 20 to 40. In the etiology of diabetes, a hereditary, infectious, allergic factor and the immune status of the body play a role [1,2,3,4].

In the genesis of the pathogen, the role is assigned to the similar fungi *Pityrosporum ovale*, which saprophyte on the scalp (ACH), however, under certain conditions (hormonal imbalance, metabolic disorders, pathology / s of the gastrointestinal tract, nervous system, immunodeficiencies) can acquire pathogenic properties, participating in the development or aggravation of the pathological process [1,2,3,4,5,6,7].

Currently, in many countries, a steady upward trend in the number of patients with seborrheic dermatitis is recorded. [1,2,3,6,8] Chronization, frequent relapse, prevalence, persistent skin pathological process, resistance to therapy requires a deep approach to the study of the pathogenesis of this dermatosis.

According to the literature, in the pathogenesis of seborrheic dermatitis, great importance is attached to endocrinopathy, disorders of the gastrointestinal tract, etc. [2,3,4].

It should be said that recently in the etiopathogenesis of this dermatosis, an important role is played by yeast-like - lipophilic fungi of the genus *Malassezia*, which saprophytes on the scalp, however, under certain conditions - against the background of hormonal, metabolic disorders, drug allergies, diseases of the nervous system, gastrointestinal tract, quantitative and qualitative changes in the secretion of the sebaceous glands can acquire pathogenic properties [1,2,3,6,8].

The central role in the pathogenesis of skin diseases with a chronic course and frequent recurrence is assigned to the immune system [2,3,5,6,7]. According to modern concepts of the pathogenesis of seborrheic dermatitis, the leading place in the functioning of the immune system is given to the indicators of the cellular link of immunity - T cells with helper activity, producing cytokines of pro - and anti-inflammatory nature [5,6,7,8].

Purpose of work

The aim of our research was to study the indicators of the cytokine profile: IL4 and TNF- α in patients with seborrheic dermatitis.

Material and methods

32 patients aged 14 to 65 years were under observation. Among the males there were 18 patients, the female - 14. Clinical, microbiological and immunological research methods were carried out in all patients.

The study of the duration of the disease showed that 9 patients suffered from seborrheic dermatitis - up to 1 year, from 1 to 5 years - 19 and more than 5 years - 4 patients. The skin-pathological process was characterized by hyperemia, infiltration of the skin in the lesions of the "milk crust" type, pityriasis peeling was noted and was located only on the scalp - in 17 patients, on the skin of the trunk and scalp - in 9 and on the scalp parts of the head and face - in 6 patients. In terms of severity, 5 (15.6%) patients were diagnosed with mild severity, 21 (65.6%) with moderate and 6 (18.7%) with severe severity of the disease.

To assess the cytokine link of immunity, enzyme-linked immunosorbent assay was used using standard sets of test systems "Vector-Best" (Novosibirsk). The content of cytokines in blood serum was studied. Microbiological studies were characterized by bacterial inoculation of skin scales on nutrient media Sabouraud, 5% blood agar, endo, Levin to determine myco- and microflora. Statistical processing of the obtained material was carried out by the method of variation statistics. For statistical calculations, we used a PC of the Pentium - 4 type, standard (MS Excel - 2000, Statistica 6.0) and specially developed programs that ensure the effective use of statistical analysis methods. The results were considered reliable at $P < 0.05$.

Result and discussion

The results of the study of the content of cytokines in patients with seborrheic dermatitis are presented in table No. 1.

Table № 1. Content of IL4 and TNF- α cytokines in patients with seborrheic dermatitis (pg / ml)

Indicators	Control healthy group N=20	Sick N=32
IL4 pg/ml	2,5 $\pm$ 0,08	1,7 $\pm$ 0,2*
TNF- α pg/ml	4.01 $\pm$ 0,31	2,6 $\pm$ 0,3*

* - indicator of reliability in relation to the indicators of the healthy control group ($P < 0.05$)

As can be seen from table No. 1, in the blood serum of patients with seborrheic dermatitis, there

is a significant decrease in the level of IL-4 and TNF- α ($p < 0.05$) compared with the indicators of

the control healthy group and on average it was 1.7 ± 0.2 pg / ml and 2.6 ± 0.3 pg / ml, respectively, at 2.5 ± 0.08 pg / ml and 4.01 ± 0.31 pg / ml, respectively, in the control.

The results of the study indicate that in patients with seborrheic dermatitis, an imbalance of the

cytokine status is observed in the blood, expressed by a deficiency of IL-4 and TNF- α . The decrease in the level of IL-4 and TNF- α in the blood reflects the development of the failure of the body's defense system.

Table 2. Indicators of cytokine status in patients with seborrheic dermatitis depending on the duration of the disease (pg / ml)

Indicators	Control healthy group N=20	Sick N=32	Up to 1 year N=7	1-5 years old N=18	More than 5 years N=7
IL4 pg/ml	2.5 ± 0.08	$1.7 \pm 0.2^*$	2.3 ± 0.5	$1.8 \pm 0.2^*$	2.3 ± 0.2
TNF- α pg/ml	4.01 ± 0.31	$2.6 \pm 0.3^*$	$2.3 \pm 0.5^*$	3.5 ± 0.6	3.5 ± 0.8

* - indicator of reliability in relation to the indicators of the healthy control group ($P < 0.05$)

The study of the state of IL-4 and TNF- α , depending on the duration of the disease, indicates a multidirectional imbalance of the cytokine status in patients with seborrheic dermatitis (Table 2). The concentration of IL-4 with a disease duration of up to 1 year was on average 2.3 ± 0.5 pg / ml, which corresponded to the indicators of the healthy control group, while with an increase in the duration of the disease - 1-5 years, the concentration of IL-4 decreased by 1, 5 times compared with the control group and 1.3 times compared to 1 year old, which was statistically significant ($P < 0.05$).

Whereas the pro-inflammatory cytokine TNF- α with a disease duration of up to 1 year decreased by 1.7 times and had a statistically significant character ($P < 0.05$). And with an increase in the duration of the disease, this indicator tended to decrease, however, having a statistically unreliable character. It should be pointed out that TNF- α - as a mediator of inflammation, is involved in the activation of the functional activity of phagocytes, neutrophils, carries out the growth and differentiation of endothelial cells and is involved in antimicrobial immunity.

Thus, a decrease in IL-4 and TNF- α indicates a decrease in the cellular response of the body's immune system to foreign antigens of a bacterial or fungal nature. According to numerous authors, as well as our own observations, it is shown that seborrheic dermatitis is associated with fungal flora - *M. furfur* and other bacterial microflora.

Thus, microbiological studies of the scalp skin of lesions in 36 patients with seborrheic dermatitis

showed an increase in *M. furfur* in 7 out of 36 (19.4%), *st. aureus* - in 14 (38.8%), *st. Haemolyticus* - in 8 (22.2%), *st. saprophyticus* - in 9 (25%). Whereas on the skin of the trunk, *M. furfur* was noted in 2 (5.5%), *st. aureus* - in 11 (30.5%), *st. Haemolyticus* - in 3 (8.3%) and *st. saprophyticus* - in 13 (36.1%) patients.

It should be noted that the colonization of representatives of the Micrococcaceae family in the lesions statistically significantly exceeded the microflora indicators in healthy individuals ($P < 0.05$), which averaged 1221.5 ± 215.6 CFU / cm². The data obtained indicate a high contamination of the pathogenic flora of *stafylococcus* spp. on the skin of patients with seborrheic dermatitis, which, in our opinion, plays an important role in the clinical course of this dermatosis. At the same time, a decrease in the concentration of TNF- α helps to reduce the stimulation of endothelium and macrophages to release "pathological" nitric oxide, which leads to a decrease in neutrophil adhesion, which contributes to the development of a favorable environment for the growth of pathogenic microorganisms.

Findings

Thus, the data obtained indicate that one of the pathogenetic mechanism of the clinical course of the chronic form of morbidity is the failure of the body's cellular reactivity system, characterized by a decrease in pro- (TNF-alpha) and anti-inflammatory (IL-4) cytokines, which contributes to the development of microbial contamination on the skin in patients with seborrheic dermatitis.

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