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**Determination of some immunological indicators in patients with acne during complex treatment that included combined laser therapy**

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**Introduction & Objectives:** A high incidence of acne, tendency to a chronic course with the formation of resistance to treatment and frequent development of deep forms determine the important medical and social significance of the problem. Acne is one of the most important problems in modern dermatology, being a common cause for cicatricial skin changes, loss of performance capability and social activity and negatively affects in the psycho-emotional state of patients. The topicality of the disease is due to the high degree of its proliferation, chronic and recurrent course, and resistance to existing therapies. The development of acne is due to the combined effect of endogenous and exogenous factors, including the important role played by the changes of immunological reactivity, justifying the administration of immunotropic techniques and drugs in their comprehensive treatment.

Reducing the effectiveness of skin diseases treatment, including that of acne, at present, is associated with developing resistance to drugs, which causes the use of non-drug methods in dermatology nowadays., including low-intensity (with capacity of 1-20 mV) laser therapy, which possesses an anti-inflammatory, antibacterial or bacteriostatic action, stimulates the immune system factors , without causing any side effects or complications.

**Objective.** To increase the effectiveness of treatment of acne during complex treatment that included combined laser therapy with consideration for indicators of systemic immunity.

**Materials & Methods:** 72 patients (aged 18-25) with acne were observed; among which in 29 (40.28 %) patients mild acne were diagnosed, in 30 (41.76%) – moderate, in 13 (18,06 %) persons – severe. The control group consisted of 26 healthy individuals (donors) of the similar age. In all patients systemic immunity indicators were assessed. In the course of treatment patients were divided into two groups: the first (comparative) – received standard therapy, according to the protocols, using immunotropic medication, the second (main) - secondary to the standard therapy the immunotropic medication and combined laser therapy (percutaneous laser irradiation of blood and differentiated external laser therapy) was administrated.

**Results:** In patients from the first treatment group there was detected probable positive dynamics of individual systemic immunity indicators: increase of CD3+ on 15,3%, ( $p<0,001$ ), CD4+ on 20,7%, ( $p<0,001$ ), CD8+ on 9,1%, ( $p<0,05$ ), and diminishing of CD19+ on 16,4%, ( $p<0,01$ ). But the significant positive dynamics of immune parameters was in patients from the second (main) group: increase of CD3+ on 25,0% ( $p<0,001$ ), CD4+ on 35,5% ( $p<0,001$ ), CD8+ on 19,8%, ( $p<0,001$ ) and diminishing of CD19+ on 19,4% ( $p<0,001$ ). Thus proving the efficacy of complex therapy by immunotropic medication and combined laser therapy in patients with acne.

**Conclusion:** The administration of immunotropic medication and combined laser therapy helps to normalize or establish the tendency to the normalization of systemic immunity and may be recommended in complex treatment for the patients with acne.

