Effect of Some Drugs on Interferon and Phagocytic Systems in Patients with Lichen Planus

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It is shown that in patients with lichen planus claritin and immunoferon alleviate itching, delay the development of pathological process, boost interferon production by leukocytes and lymphocytes, and activate serum opsonins.

Key Words: *interferon; phagocytosis; lichen planus*

Lichen planus (LP) is now considered to be a multifactorial skin disease induced by various exogenous and endogenous agents and genetic abnormalities [2,4]. There is evidence that nonspecific defense factors are involved in the pathogenesis of LP [6,7].

Vague etiology, complex pathological mechanisms of LP, and the tendency to recur prompt the search for new ways of combating this disease.

Bearing in mind the hypothesis of viral genesis of LP, some researchers have beneficially applied antiviral drugs such as interferon, deoxyribonuclease, and methysazon for the treatment of LP [1]. They reported a reduction of itching, and alleviation or disappearance of clinical symptoms during treatment.

Since the allergic component is involved in the pathogenesis of LP, antihistamine agents have also been used in LP therapy.

Claritin (loratidine), a nonsedating antihistamine and H_1-histamine receptor blocker without anticholinesterase activity, so far has not been applied to the treatment of LP.

Immunoferon (IF, glycoprotein), an immunomodulator recommended for the treatment of immunodeficient states, has also not been used for the treatment of LP.

The aim of the present study was a clinical and laboratory investigation of the dynamics of the interferon and phagocytosis systems in the course of claritin and IF therapy of LP.

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MATERIALS AND METHODS

A total of 35 patients were examined, 10 of them received claritin and IF, and 25 patients received conventional therapy (diazoline, calcium gluconate). The patients were of ages 16 to 70 (49±2.5 in the group treated with claritin and IF and 50±2 in the group receiving conventional therapy, the history of LP being 2±0.6 and 1.5±0.5 years, respectively). The most common intercurrent pathology was gastritis, diabetes mellitus, and essential hypertension.

The patients received 10 mg claritin (1 tablet) once daily until itching disappeared, and then they were also given IF (2 capsules, once daily for 10 days).

All patients passed physical examination before and after the treatment. It included evaluation of the patient's complains, nature of skin rash, and course of the disease.

Laboratory examination was directed toward evaluation of the immunity system. Cell and humoral components of neutrophil phagocytosis were assessed by analyzing the functional state of neutrophils and serum opsonin activity using a chemiluminescent method developed at the Central Research Institute of Skin and Venereal Diseases [3]. The data of luminol-dependent chemiluminescent analysis were expressed as the following coefficients: coefficient of stimulation was obtained by dividing the peak of

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TABLE 1. Parameters of Interferon and Phagocytosis Systems during Treatment of Patients with LP (*M±m*)

Parameters	Routine therapy		Claritin and IF	
	before	after	before	after
Production of				
α-interferon, U/ml	55.0±14.5	100.0±27.0	80.0±18.4	128.0±10.0*
γ-interferon, U/ml	25.0±3.5	41.0±7.8	36.0±11.6	64.0±0.1*
serum interferon, U/ml	5.0±1.1	2.2±0.3*	6.0±3.9	1.7±0.18*
Spontaneous chemiluminescence	1.2±0.04	1.0±0.03*	1.5±0.2	1.0±0.04*
Stimulation coefficient	1.9±0.2	1.8±0.09	1.7±0.3	1.8±0.1
Activity of serum opsonins	1.4±0.1	1.6±0.2	1.3±0.07	1.5±0.07*

Note. *$p<0.05$ in comparison with respective parameters before treatment.

stimulated chemiluminescence by spontaneous neutrophil chemiluminescence measured at the same time point; spontaneous and opsonin activity of the serum were obtained by dividing the maximum chemiluminescence by the background values.

The effect of the therapy on the interferon system was analyzed by measuring serum interferon level and interferon-synthesizing activity of leukocytes (judged from α-interferon production induced *in vitro* by viral inducers) and lymphocytes (by γ-interferon production induced *in vitro* by mitogens). The interferon-producing ability of leukocytes and lymphocytes was assayed and titration of interferon was carried out as described elsewhere [5].

RESULTS

Itching, which bothered all the patients before treatment disappeared one week after single administration of claritin and did not appear again throughout the treatment, while routine therapy just alleviated this symptom. A 2-week course of diazoline stopped itching in 4 patients.

In 5 out of 10 patients treated with IF, a marked positive dynamics was observed (small papules became pale, some of them disappeared, and no new ones appeared).

In patients receiving no IF, the nature of skin eruption remained unchanged but no new papules were seen.

The dynamics of paraclinical parameters suggests that claritin and IF improve the interferon and phagocyte systems. This primarily concerns the level of α- and γ-interferons and serum opsonin activity. In patients receiving claritin and IF, a tendency towards a rise of stimulated chemiluminescence of neutrophils was noted (Table 1).

It can be concluded that in patients with LP claritin and IF more rapidly alleviate itching, delay the development of pathological process, boost interferon production by leukocytes and lymphocytes, and activate serum opsonins.

The results obtained allow us to recommend claritin and IF in the therapy of patients with LP.

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