

## Clinical - Immunological Aspects of the Effectiveness of "Unguentum Rhodopesum 5,0%" during the Herpetic Stomatitis

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### ABSTRACT

Has been studied effect of the preparation "Unguentum Rhodopesum 5,0%" on the immune competency of patients with stomatological herpes. Recurrence of herpes was characterized by decrease in all immunological parameters, the dynamics of which was less depended on the gravity of the disease process. In case of etiotropic therapy (aciclovir) the tendency of improvement of these data was observed, however without normalization. In case of treatment with "Unguentum Rhodopesum 5,0%", the more active dynamics of investigated parameters was expressed, than in the previous group. Significantly were improved indices of interferon and phagocytosis. Along with that, the strong correlation between immunological homeostasis and treatment results (rate of symptoms arrest and duration of remission). Has been proved and suggested recommendation for "Unguentum Rhodopesum 5,0%" application in case of stomatological herpes.

**KEYWORDS:** *unguentum rhodopesum, herpes simplex, stomatitis, aciklovir*

At present, the virus infections are one of the most topical problems in modern medicine, among them the herpes simplex is of especial importance. Selective ability towards initial invasion in epidermal cells and external mucous layers that are lesser protected by immune system, provides the virus with high virulence. Along with that, if we take into consideration ubiquitous spread of the herpes simplex (air-born, droplet, contact, sexual and placental ways of transmission), and ability of virus to produce persistent infection after initial invasion, no doubt that herpes heads the list of human virus infections.

Possibility of transfer into the latent state is the unique way of adaptation, common for limited number of microorganisms allowing them to parasite. Formation of developmental mechanisms of virus persistency is possible during virus transfer into the state of intracellular integration, when the virus is not available for immune system [1,13].

Initial invasion is the triggering mechanism at the beginning of formation of anti-herpetic immunity. If the control of immunity upon the latent state of virus is sufficient, the clinical manifestations of herpes are absent, but when the insufficiency of immune protectiveness is obvious, and the provoker gains ability of activation and replication, the disease exacerbates, so recurrences of herpes simplex display. Frequency and intensity of clinical manifestations directly depends on the rate of immune deficiency [15,2].

The great regulative and stabilizing role of immune system (especially its local factors) in preserving of normal homeostasis in the skin and mucous layers is

well known and generally recognized. Talking exactly about oral cavity, the immune system plays the immediate role in etio-pathogenesis of various stomatological diseases. Along with entire the protective mechanisms, common for immune system, the local immuno-pathological mechanisms are able to induce serious disorders of parodontal tissue and even resist reparative processes [5].

Coming from the fact that herpes infections are characterized by dysbalance and various directionalities of immune factors, the question about immune therapy for treatment of even light forms of herpes is considered as reasonable. However, an important regulative role of immune system in alternation of recurrent and remission periods of herpes, promotes and confirms the opinion of most specialists to support the complex treatment of herpes with immuno-modulative remedies.

### MATERIAL AND METHODS

The "Unguentum Rhodopesum 5,0%" first has been suggested by us, for treatment, whose active component is sum of phenol compounds extracted from the *Rhododendron ungeni* [12].

The preparation has shown high anti-virus activity, and expressed keratoplastic effect during stomatological herpes [6]. In order to explain and clarify the mechanisms of "Unguentum Rhodopesum 5,0%" therapeutic effect, we decided to study its immunotropy in these patients, so detect the state of immune indices during the treatment process.

No	The groups of patients	N	Tc %	Ta %	Th %	Ts %	Ii	B %	IgM g/l	IgG g/l	IgA g/l	CPN %	PI	CP %	IF- $\alpha$ unit/ml	IF- $\gamma$ unit/ml
1	Control	30	51,2	32,8	36,6	14,6	2,51	24,5	1,22	12,5	1,84	75,5	6,30	72,6	43,4	31,8
2	Herpes "0"	49	48,6	21,8	30,4	18,2	1,66	22,1	0,97	11,9	1,38	59,7	2,57	56,3	16,9	7,1
	Light form	17	48,9	22,7	30,8	18,1	1,69	22,9	1,04	12,9	1,42	61,8	2,83	58,2	18,4	7,5
	Moderate form	21	49,4	22,5	30,6	18,6	1,64	22,6	0,97	12,6	1,38	60,2	2,61	56,2	18,2	7,2
	Severe form	11	47,7	20,3	29,7	18,0	1,65	20,7	0,91	10,4	1,35	57,1	2,26	54,7	14,2	6,8
3	Herpes "A"	25	49,4	23,7	32,5	16,9	1,91	22,7	1,06	11,6	1,44	61,6	3,07	58,5	20,4	10,3
	Herpes "B"	24	50,6	26,5	33,7	16,8	2,01	23,9	1,27	11,8	1,54	64,1	4,14	62,8	26,7	15,2
	2/1	p<	-	0,01	0,05	-	0,001	-	-	-	0,05	0,05	0,001	0,05	0,001	0,001
	3/1	p<	-	0,02	-	-	0,05	-	-	-	0,1	0,05	0,02	0,05	0,001	0,001
	4/1	p<	-	0,1	-	-	0,05	-	-	-	0,1	0,1	0,1	0,1	0,02	0,01
	3/2	p<	-	-	-	-	0,1	-	-	-	-	-	-	-	0,1	0,1
	4/2	p<	-	0,05	0,1	-	0,05-	-	-	-	-	0,1	0,02	0,05	0,05	0,01
	4/3	p<	-	0,1	-	-	-	-	-	-	-	0,1	0,05	0,1	0,05	0,05

The group - O: admission of patients; The group - A: after etiotropic therapy; The group - B: after treatment with unguentum rhodopesum

**Tab.1** Distribution of absolute indices of clinical symptoms.

The preparation was applied on disordered parts of the oral cavity's mucous layer and the red border of the lips, 3 to 4 times a day (duration of exposure 15 to 20 minute), during 5-6 days. The immune status was assessed using the following parameters: percentage of T and B-lymphocytes and their subpopulations [11], concentration of immunoglobulins - M, G and A [14], phagocytosing activity of neutrophils [4], and system of interferon [9].

The blood for testing was taken before (49 patients) and after treatment (on the 10-15 day). The patients were subdivided into two major groups: etiotropic therapy with aciklovir (25 patients - the group A) and the treatment only with unguentum rhodopesum (24 patients - the group B).

### RESULTS AND DISCUSSION

Analysis of the results presented on the table N1 revealed serious oppression of immune competency of organism in patients with stomatological herpes, mainly oppression of nonspecific factors of protection.

Decrease in T-lymphocytes active fraction's percentage was statistically significant (21,8%, control - 32,6%,  $p < 0,01$ ). At the expense of significantly decreased percentage of T-helpers ( $p < 0,05$ ), the index of immunoregulation was decreased - 1,66 significantly as well (control - 2,51,  $p < 0,001$ ).

All indices of phagocytosis were sharply reduced: concentration of phagocytosing neutrophils (CPN) - 59,7% (control - 75,4%,  $p < 0,05$ ), index of phagocytosis (PI) - 2,57 (6,33,  $p < 0,001$ ), and completion of phagocytosis (CP) - 56,3% (72,6%,  $p < 0,05$ ). The system of interferon underwent most of the severe depressions and its immune type in particular, so the  $\gamma$ -interferon (IF- $\gamma$ ) - 7,1 unit/ml (control- 31,8 unit,  $p < 0,001$ ); activity of  $\alpha$ -interferon (IF- $\alpha$ ) was 16,9 unit/ml (43,4 unit/ml,  $p < 0,001$ ). As for humoral indices, only decrease

tendency in B-lymphocytes and immunoglobulins of all classes has been stated.

The above-mentioned data are characteristic for latent virus infections in common, and for herpes simplex in particular [1.16]. It is well known that recurrence of herpes is accompanied with greatest disorders of phagocytic system, decreased concentration of natural cytotoxic cells and oppressed activity of one of the major regulators of organism's immune competency -  $\gamma$ -interferon [7].

During distribution of obtained data, depended on severity of herpes infection, we could not detect significant differences in these parameters, which clearly correlate in case of other infections, for instance, in case of influenza [3]. The more or less acceptable explanation of the mentioned fact could be considered the similarity of clinical and laboratory symptoms (immunological as well) during recurrences of herpes [10]. That's why; in case of herpes infections the number of recurrences are the major determinants of gravity of exacerbation during one year. According to the aforesaid classification, 1-2 recurrences a year is considered as the light form of herpes, 3-5 recurrences - as moderate form, and 6 and more recurrences - as severe form.

The results of immunological analysis in case of two different schemes of herpes treatment - etiotropic (the group A), and with the use of unguentum rhodopesum (the group B) are presented on the same table.

The results have shown that the arrest of herpetic process was accompanied by improvement of all investigated parameters in both groups compared to initial numbers, so the strong tendency of normalization of these parameters was obvious. However, it must be mentioned that none of these parameters did not reach the control level. On this background, more optimistic results revealed the "Unguentum Rhodopesum 5,0%",

so the group B: activity of  $\alpha$ -interferon was significantly higher than initial numbers - (26,7 unit/ml) and  $\gamma$ -interferon (15,2 unit/ml), the phagocytic index (4,14) and the index of immuno-regulation (2,01).

The received data correlates with the results of other investigators suggested the delayed dynamics of patients in the periods of recurrences and normalization of immunological indices during the period of one month after resorption of morphological elements of herpes infections [8].

For us the most important is the expressed immunotropicity of the "Unguentum Rhodopesum 5,0%", which is detected on the background of the rapid arrest of the process, so it was in correlation with treatment quality of herpes. In addition to the aforesaid, it must be mentioned that the more prolonged course of remission was expressed exactly in the patients of this

group (1,5 to 2,5 months and more, than in the group A).

On the basis of the latter data could be suggested one more practical conclusion: the rapid and intensive activation of the interferon and phagocytes systems, active fraction of T-lymphocytes and immuno-regulatory index was observed only in such patients, who were treated successfully. So, immunological indices could be used for prognosis of remission terms.

#### **CONCLUSION**

Thus, according to the results of our investigations it is obvious that "Unguentum Rhodopesum 5,0%" has well expressed immune stimulating effect, which could be belonged to one of the mechanisms of protection in case of herpes. That's why; an active application of "Unguentum Rhodopesum 5,0%" is of great value in case of recurrent herpes infections.

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## **Клинико-иммунологические аспекты эффективности "Unguentum Rhodopesum 5,0%" при герпетическом стоматите**

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### **Р Е З Ю М Е**

Изучено воздействие препарата "Unguentum Rhodopesum 5,0%" на показатели иммунокомпетентности пациентов при стоматологическом герпесе. Обострение герпеса характеризовалось снижением почти всех иммунологических параметров, динамика которых мало зависило от тяжести процесса. При этиотропном лечении (ацикловир) наблюдалась тенденция к улучшению этих показателей, однако без нормализации. При лечении мазью "Unguentum Rhodopesum 5,0%" выявлена более активная динамика изучаемых параметров, чем в предидущей группе, причем достоверно – интерферона и фагоцитарного индекса. Зафиксировано также четкая корреляция между состоянием иммунного гомеостаза и результатами лечения (скорость купирования симптоматики и продолжительность ремиссии). Обосновывается целесообразность использования "Unguentum Rhodopesum 5,0%" при лечении стоматологического герпеса.

**КЛЮЧЕВЫЕ СЛОВА:** *unguentum rhodopesum, герпес, стоматит, ацикловир*