

Clinical and diagnostic criteria for the effectiveness of treatment of acute herpetic stomatitis in children using a dental gel based on GanodermaLucidum.

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Abstract. This article describes the possibility of using biologically active substances based on GanodermaLucidum in the treatment of acute herpetic stomatitis in children. It has been shown that GanodermaLucidum improves the activation of nonspecific and specific immunity due to the activation of T-helpers, T-killers and NK-cells. Also in this article, the positive aspects of the treatment of GanodermaLutsidum compared with traditional methods of treatment (acyclovir). Also, GanodermaLucidum reduces the treatment time for acute herpetic stomatitis and, more importantly, does not cause side effects, which is especially important in pediatric practice. There are suggestions that the effectiveness of GanodermaLucidum is associated with triterpenes and polyglucans, which are part of it, which, thanks to the harmonious amino acid sequence, improve the state of cellular and humoral immunity.

Key words: acute herpetic stomatitis, GanodermaLucidum, immunity, children.

Relevance. Herpes infection is one of the leading places among viral diseases. This is due to the widespread spread of the herpes simplex virus, the variety of clinical manifestations of the disease, the chronic course, as well as the different ways of transmission of the pathogen.

According to the WHO, diseases caused by the herpes simplex virus rank second (15.8%) after the flu (35.8%) as the cause of death from viral infections. Universal susceptibility. Antibodies to herpes simplex virus (HSV) are detected in 80-90% of adults.

In this regard, I would like to note that not all traditional local preparations give a persistent clinical effect and do not give a relapse. Therefore, as an alternative to traditional methods of treatment, there are non-traditional methods of treatment, which include biologically active additives. Since the time of the Ming dynasty (China, 300 BC) [6], some species of fungi have been known that have been used

to treat many pathologies of the gastrointestinal tract, cardiovascular system, biliary tract, and many others. And among the higher fungi used in Chinese medicine, it is *GanodermaLucidum* that was and remains the number one mushroom, the so-called highest among the highest ones.

In clinical practice, for the treatment of acute catarrhal gingivitis [1], we have already used biologically active substances based on *GanodermaLucidum*, also used for the prevention of dental diseases in schoolchildren [2], and we saw some of the advantages of *GanodermaLucidum* over traditional therapy, in particular the increase in RANTES protein products related to β -chemokines [5] that says about the improvement of nonspecific resistance of the organism, but at the same time we did not meet the work devoted to the treatment of acute herpetic stomatitis in children, so the problem of diseases of the oral mucosa in children remains relevant today.

Purpose of the study. To conduct a comparative clinical and instrumental study of the use of biologically active substances based on *GanodermaLucidum* in the treatment of acute herpetic stomatitis in children.

Materials and research methods. The Department of Pediatric Dentistry of the Tashkent Pediatric Medical Institute examined 58 children aged from 6 months to 6 years. Depending on the form of acute herpetic stomatitis, all children were divided into 3 groups: 1 group - main group - 25 children, where biologically active substances based on *GanodermaLucidum* were used as treatment and group 2 - control group - 21 children, where as treatment used traditional treatment (Acyclovir), group 3 - the comparison group - 12 children, absolutely healthy children. In tab. 1 shows the distribution of children in groups depending on the form of acute herpetic stomatitis.

Table 1. The distribution of children in groups depending on the form of AHS

Distribution Children in groups depending on the form of AHS	Themaingroup - 25 children	Controlgroup - 21 children	Comparisongroup - 12 children
Easyform	13 children, average age 3 ± 1.2 years	11 children, average age 4 ± 2.4 years	

Mediumheavy	12 children, averageage 2 ± 1.5 years	10 children, averageage 3 ± 2.3 years	
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AHS occurs equally often among both boys and girls, so we will not divide children by sex.

The following research methods were used.

1. Clinical
2. Histological
3. Microbiological.

Histological methods of research included the study of the morphological features of the epithelium of the oral mucosa by taking smears prints characterizing different stages of the disease of acute herpetic stomatitis. The material for the study was obtained by smears-prints and a thin layer was distributed on a glass slide, dried and stained with 1% aqueous methylene blue solution, washed, dried and examined under an immersion microscope under a 7X90 magnification.

Cytological studies included:

1. Fixation - which was that the material taken by biopsy was immersed in a 10% formalin solution with further embedding in paraffin.
2. Then sections were made 5-7 μm thick, which were stained with hematoxylin-eosin and then examined in a light-optical microscope.
3. Microbiological research.

To do this, oral fluid was collected from all examined children during the examination period 2 hours after ingestion in sterile tubes. From the obtained material, serial dilutions were prepared in the laboratory, in the subsequent of which a certain volume was sown on the surface of differential diagnostic nutrient media: agar for anaerobes, Endo medium, milk salt agar, Kalina medium, blood agar, MPC-4 medium, Saburo medium and others.

Crops on blood agar, Endo, milk-salt agar, Saburo were cultivated under normal conditions for 18-24 hours, at a temperature of 37 ° C, and cultivation of crops for the isolation of anaerobes was carried out by the method of "sealed" plastic bags filled with main natural gas. Cups with crops on MPC-4 were placed in a

desiccator with a candle in a thermostat at 37 ° C for 24-48 hours. Packages filled with gas with crops on “Blaurokko” were placed in a thermostat at 37 ° C for 3-5 days. After the indicated periods, the seeded cups were taken out of the thermostat, the grown colonies were counted, the group and species affiliation of the isolated microorganisms was determined based on the smear data of Gram-stained microscopy, growth pattern on selective and differential diagnostic media. Belonging to the family of Micrococcaceae was determined by morphological features and the presence of catalase.

It should be noted that, since 2004, the Microbiology Laboratory (TMA) has been using new highly selective nutrient media, obtained from the company HiMedia, which opened the Uzbek-American joint venture Phoenix International in Uzbekistan.

Results of research.

1. The results of clinical studies.

As a result of clinical studies and assessment of the severity of acute herpetic stomatitis caused by the herpes simplex type 1 virus, it was found that itching, pain, tingling at the sites of eruptions, the lesion area was more than 4 cm² and the number of lesions was more than 2. All children noted an increase in temperature (more than 38.5 ° C), which was characterized by weakness, malaise, headache, and an increase in lymph nodes.

The manifestation of herpes infection was observed in children aged 1.7 ± 0.7 years, including the development of acute herpetic stomatitis in 90.6% of cases. The disease mainly occurs in mild form (41.3%) and medium-severe form (43.7%). The development of vivid symptomatology with the formation of intoxication (83.6%) and lymphadenopathic (75.5%) syndrome was characteristic of the primary infection.

Hypothermia in 61% of cases, insolation in 9%, SARS in 57.8%, mechanical injury in 7.3% caused provoking factors for the development of acute herpetic stomatitis.

The results of histological studies.

The results of histochemical studies showed that the content of the DNA nuclei of the cells of the basal layer of the normal epithelium corresponds to the ploidy classes 2n-4c, and the spinous - does not exceed 2n, which characterizes the division of all cells with a pair of chromosomes during the transition from the basal

to the spinous. The appearance of a 2n ploidy in the spinous layer indicates an increase in the DNA content due to the pathological process, as well as the presence of a normal epithelium in the spinous layer compared to the basal epithelium.

During cytological examination, 74% of patients found 1-2 smears of imprints in the field of view, mast cells, multinucleated cells, indicating a viral etiology of this disease.

Figure 2 shows the smear imprint of acute herpetic stomatitis.

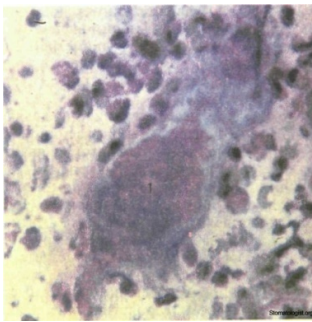
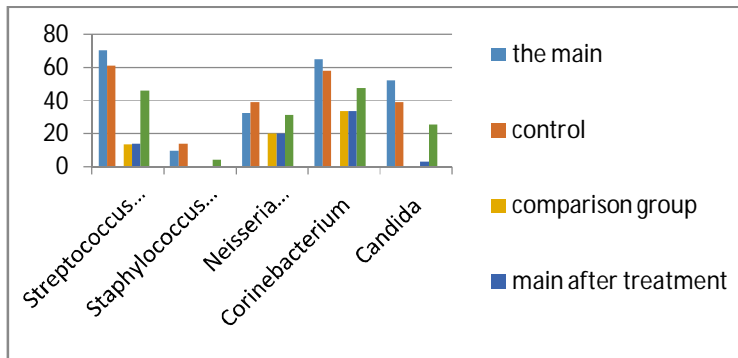


Fig. 2 Acute herpetic stomatitis in a child of 4 years. Smear imprint under the microscope.

H&E staining, immersion increase 7X90.

9 children of the first group with mild and use of GanodermaLutsidum moodiness, lethargy were held on the second day, the children freely took their food also from the second day. Epithelization of the elements began at 2.5-3 days, which consisted in reducing the hyperemic rim around the aft, aphthae became less painful when touched, decreased in size. Full recovery occurred after 3.6 ± 0.19 days. With mild severity after Gano-therapy, bacteriological examination of St. aureus was inoculated in 50% of cases lg 2.77 CFU / ml, Str. Salivaris at 66.6% lg 3.84 CFU / ml. The average microbial number was lg 3.24 + 0.3 lg CFU / ml, which is 70 times less bacterial contamination at admission.

Figure 5. Dynamics of the oral microbiocenosis of children with AHS before and after treatment.



3. The results of immunological studies

To study the indicators of local immunity of the oral cavity, we studied the dynamics of changes in the content in the saliva of indicators of local protection - secretory immunoglobulin A and total protein.

Mixed saliva in children was collected before and after the application of the iSpring dental gel, porridge and Kordi Gold by introducing the catheter into the large and small salivary glands. The resulting saliva volume of 2 ml for 6 min, which is then stored at a temperature of t-20 °. Immunological studies were carried out at the Department of Microbiology of the Tashkent State Dental Institute.

Table 4. The state of cellular immunity after treatment in children with AHS in the dynamics of two-year observation.

Indicator	Before treatment	After treatment	After 3 month	After 6 month	After 12 month	After 24 month

Leucocyte X10 ⁹ g/l	7,1±0,4*	5,5±0,3*	5,7±0,4	6,0±0,3	5,6±0,4*	5,5±0,8
EosinophilsX10 ⁹ /l	2,0±0,3	1,3±0,3	1,5±0,3	1,7±0,4	1,2±0,7	1,3±0,3
Monocytes X10 ⁹ /l	7,4±0,4*	5,8±0,5*	6,2±0,7	5,5±0,4*	5,7±0,8	5,8±0,5
NeutrophilsX10 ⁹ /l	54,5±1,6	56,6±1,6	56,0±1,8	55,5±1,2	56,0±1,2	56,6±1,8
LymphocytesX10 ⁹ /l	35,9±1,3	36,2±1,8	36,0±1,4	36,1±1,6	36,4±1,5	36,2±1,2
CD3+X10 ⁹ /l	80,9±1,1*	70,0±1,3*	72,5±1,4	75,5±1,6	71,5±1,7	70,0±1,2
CD4+X10 ⁹ /l	53,8±1,6***	42,0±1,1	45,0±1,2	47,5±1,7	43,0±1,2	42,0±1,0
CD8+X10 ⁹ /l	21,8±1,6***	27,1±0,8	28,0±1,2	26,5±1,8	26,8±0,5	27,1±0,8
CD(16+56)+X10 ⁹ /l	11,9±1,1	9,7±0,6	10,0±0,8	8,9±0,6	9,2±0,7	9,7±0,9
CD19+X10 ⁹ /l	9,4±0,9**	9,5±0,6**	9,44±0,2	9,42±0,4	9,46±0,5	9,5±0,7
IgM g/l	1,2±0,1**	1,5±0,1	1,3±0,1**	1,4±0,2	1,6±0,3	1,5±0,2
IgG g/l	12,1±0,5**	11,4±0,2	11,6±0,7	10,8±0,5	11,2±0,8	11,4±0,4

*-p< 0,01

**-p< 0,005

***-p< 0,001

In the course of 2 years of follow-up of AHS treatment in children with medium-severe form, a positive trend was observed, which is apparently due to the immunomodulatory properties of Ganoderma, such as T-helper, CT-lymphocyte and macrophage activation several times, and activation of tumor necrosis factor α interleukins 1 and 6, which leads to the activation of systemic immunity and eventually to recovery. The state of local immunity also increases, in particular, secretory immunoglobulin A and total protein are reduced.

The authors confirms that he has no conflict of interest.

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