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Modern Approaches To Improving The Effectiveness Of Treatment For Ulcerative-Necrotic Gingivostomatitis

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Abstract: The article is devoted to the urgent problem of treatment of patients with ulcerative-necrotic gingivostomatitis. The aim of the study was to increase the efficiency of treatment of ulcerative-necrotic gingivostomatitis. The study involved 46 patients with ulcerative-necrotic gingivostomatitis who were treated in the polyclinic of therapeutic dentistry at TSMU. The results of the study demonstrate the possibility of significantly increasing the efficiency of treatment of ulcerative-necrotic gingivostomatitis by optimizing therapeutic regimens and an individual approach to treatment.

Keywords: Necrosis, gingivitis, irrigator, Metralin Denta.

Introduction: Ulcerative-necrotic gingivostomatitis (UNGS) is a serious oral disease characterized by inflammation of the gums with the formation of necrotic tissue areas [1]. The main pathogenetic factor of UNGS includes several key stages: the penetration of pathogenic microorganisms into gingival tissues, the development of an inflammatory reaction, and the damage and necrosis of gingival tissues. In patients, these processes are exacerbated by a disruption of local immunity and a decrease in tissue regenerative capacity. Soft dental plaque, the cause of which lies in poor oral hygiene associated with imperfect manual skills and insufficient control over the frequency and quality of cleaning. [1,2]. Dental plaque, which is a conglomerate of microorganisms, constantly peeling epithelial cells, leukocytes, a mixture of salivary proteins and lipids with or without food particles, leads to a qualitative change in the microflora, imbalance, and an increase in the number of microorganisms, thereby negatively affecting the oral mucosa and periodontal tissues. [1.5]. Clinically, gingival swelling can manifest as swelling or an increase in tissue volume in the form of hyperemia, bleeding, as well as ulceration with necrotic masses of gray or yellow color.

Purpose of the study: To increase the effectiveness of treatment of ulcerative-necrotic gingivostomatitis.

METHODS

A comprehensive examination of 46 patients with ulcerative-necrotic gingivostomatitis, who were treated at the therapeutic stomatology polyclinic under the Tashkent State Medical University, was conducted. To assess the nonspecific resistance of oral mucosa, the microorganism adsorption reaction (MAR) was determined by counting the number of bacteria adsorbed on the surface of each epithelial cell (calculation was performed per 100 cells) according to the method of T.A. Belenchuk (1987) modified by S.I. Tokmakova et al. (2002) [1].

Microbiological examination included the quantitative determination of oral mucosa microflora. A smear for microbiological examination was taken in the morning on an empty stomach using a sterile cotton swab from the lesion elements. In the microbiological laboratory of the Department of Microbiology of Tashkent State University, the following were carried out: inoculation of material onto standard microbiological media and isolation of a pure culture of microorganisms, determination of morphological and tinctorial traits of strains, assessment of biochemical activity, identification according to binary nomenclature with

determination of the amount of isolated strain in the material.

The patients were examined under the conditions of the Tashkent State Medical University's hospital therapeutic polyclinic. The patients' condition at the time of examination was satisfactory. The studied patients with ulcerative-necrotic gingivostomatitis were divided into 2 groups for subsequent evaluation of treatment effectiveness. In the first group (23 patients), standard treatment of Metralin Denta was administered without irrigator as a local therapy, and in the second group (23 patients), irrigator with antiseptic in combination with Metralin Denta as a local therapy was used for 10 days.

Table 1
Local treatment of patients with ulcerative-necrotic gingivostomatitis

Local treatment first group	Local treatment second group
Local anesthesia of the lesion with 10% lidocaine aerosol, Antiseptic treatment 0.05% p/p Chlorhexidine, Applying Metralin Denta gel to the treated area 2-3 times a day.	Local anesthesia of the lesion with 10% lidocaine aerosol, Antiseptic treatment 0.05% p/p Chlorhexidine, Applying Metralin Denta gel to the treated area 2-3 times a day. Oral mucosa is treated with a special antiseptic rinsing agent using a mouth irrigator 2 times a day.

During the study, clinical indicators of the oral cavity were assessed, including the level of inflammation, the presence of tissue necrosis, gingival pain, and bleeding.

Medicinal product, "Metralin Denta," a combined antimicrobial drug, the effectiveness of which is due to the presence of two antibacterial components in its composition:

metronidazole - nitroimidazole derivative - has antiprotozoic and antibacterial effects against anaerobic protozoa and anaerobic bacteria that cause periodontitis: Porphyromonas gingivalis, Prevotella intermedia, Prevotella denticola, Fusobacterium fusiformis, Eikenella corrodens, Bacteroides melanogenicus. The mechanism of action of metronidazole is based on the biochemical reduction of the 5-nitro group of metronidazole by intracellular transport proteins of anaerobic microorganisms and protozoa.

chlorhexidine is a disinfectant, active against a wide range of vegetative forms of gram-negative and gram-positive microorganisms, yeast,. The bactericidal effect of chlorhexidine is due to the binding of cations (the result of the dissociation of chlorhexidine salt in the physiological environment) with negatively charged walls of bacterial cells and extra-microbial complexes.

Upon examination, a large number of supra- and subgingival deposits were observed. The average value of the Green-Vermilion hygiene index was 3.87 ± 0.52. Poor and very poor hygiene was most frequently observed in 68.3%. The average value of the PMA index was 53.34 ± 8.91%, with a severe degree observed in 56.1% of patients, and in the absence of inflammation - in 9.8%.

When examining the oral mucosa in 100% of patients, its anemic color and swelling were noted.

The appearance and course of necrotic elements in the oral cavity were accompanied by pain of varying severity. On the first day of developing necrotizing gingivitis, 83% of patients noted significant pain during eating, talking, and at rest; 17% noted slight painfulness, which can be explained by adaptation to irritating factors and the choice of a diet and lifestyle.

Fig 1. Allayorova D. 39 years old before treatment

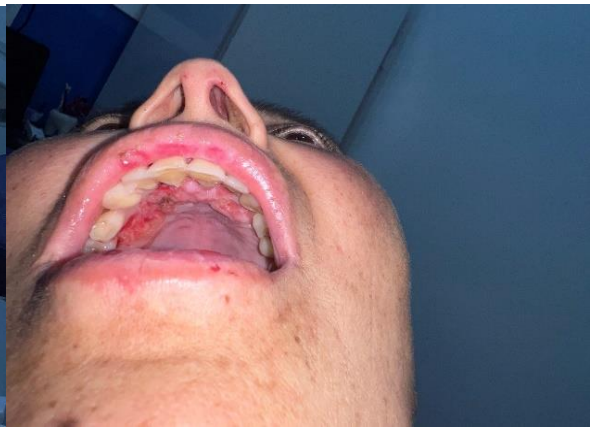

Fig 1.2 Alloyorova D. 39 years old After antiseptic treatment with an irrigator and application of the Metralin Denta gel

Patients underwent an examination of the oral mucosa and periodontal status: clinical index OHI-S (Green-Vermilion method), OHI-S - simplified oral hygiene index (Oral Hygiene Indices - Simplified). Also, laboratory tests: general blood analysis (lymphocytes, leukocytes, basophils).

When studying the microflora of the oral fluid of patients with UNGS, it was established that the average value of microbial contamination was 5.34± 0.41 ×106 CFU/ml. The microbial composition was characterized by an increase in the cultures of conditionally pathogenic and pathogenic flora against the background of a decrease in normal representatives. A decrease in the frequency of isolating representatives of the resident flora of seeds was revealed. Streptococcaceae and a significant decrease in the frequency of isolation of family representatives. Lactobacterium. Simultaneously, an increase in the frequency of Micrococcus luteus germination to 4.43 ± 0.05 ×104 CFU/ml was observed. Among the gram-positive coccal flora, staphylococci occupied a significant place - 8.63 ± 0.32 ×104 CFU/ml. The emergence of family representatives was noted. Enterobacteriaceae in titers of 104 CFU/ml. Klebsiella were most commonly found. In addition, it should be noted that Candida genus fungi are highly cultured in titers of 104 CFU/ml (Table 2). Most often, patients exhibited an association of 5-6 types of microorganisms. When analyzing the structural organization of oral microflora, the diagnosis of dysbacteriosis was made in 100% of patients with UNGS.

Table 2

Condition of oral fluid in patients with ulcerative-necrotic gingivostomatitis

Species of microorganisms		Detection frequency, %
Lactobacteria		33,33 ± 10,28
Streptococci	Str. Mitis	33,33 ± 10,28
	Str.mutans	19,05 ± 8,56
	Str. Salivarius	28,57 ± 9,86
	Str. Sanguis	38,09 ± 10,60
	Str. Pyogenes	14,28 ± 7,64
Micrococcus luteus		61,90 ± 10,60
Staphylococci	St. Epidermidis	33,33 ± 10,28
	St. Saprophiticus	42,86 ± 10,79
	St. Aureus	28,57 ± 9,86
Neisseria		57,14 ± 10,80
Candida		71,43 ± 9,86
Enterobacteria	Escherichia	28,57 ± 9,86
	Klebsiella	76,19 ± 9,29
	Proteus	23,81 ± 9,29

Assessment of the initial severity of clinical manifestations and the dynamics of the process during treatment, the therapeutic effectiveness of the studied drugs, and the severity of symptoms were assessed before and after 10 days of treatment.

Summarizing the obtained research results and analyzing them, it was revealed that already on the 3rd visit, patients noted the absence of pain sensations in the area of treated periodontal pockets. The smell from the mouth stopped. Gingival bleeding did not occur during probing. After the completion of the therapy course, improvement was noted in patients of all groups: thickening of the gingival margin, decrease in bleeding. It was established that patients' drug tolerance was equally satisfactory. During treatment, no apparent side effects or allergic reactions were observed, except for minor transient changes. It is well known that in periodontal diseases, there is a distinct shift towards the predominance of anaerobic flora. During inflammation in the periodontal pockets, the number of anaerobic bacterial strains increases to

70-80%, while normally, the number of anaerobes does not exceed 20-30%. Pharmacological elimination of inflammation is one of the most complex problems in treating periodontal diseases. An enormous number of pharmacological agents, having a different chemical structure, affecting various pathogenetic links of inflammation, belong to the group of anti-inflammatory drugs.

This explains the expediency of the local use of anaerobic drugs in the treatment of inflammatory diseases of the periodontium. Today, the gold standard in periodontology is metronidazole. Especially in combination with chlorhexidine, it has a targeted effect on periodontopathogenic microorganisms. The periodontal status of patients in the experimental group (sum of points) before and after treatment was

Table 3

Dynamics of changes in the periodontal status indicator

Values	**First group**		**Second group**	
	Total score indicator (points)			
	Before treatment	*After treatment*	*Before treatment*	*After treatment*
Mcp	**7,3**	**0,7**	**6,8**	**0,7**
m	0,19	0,09	0,35	0,12
%	**90,8**		**89,7**	
P	*< 0,01*		*< 0,01*	

The study of the mucosal microflora of the affected area was conducted before and after treatment and revealed the following results. The spectrum of identified microorganisms is diverse and indicates the development of conditionally pathogenic microflora, which also indicates the occurrence of dysbiocenosis in the oral cavity in UNGS. In patients of the main group, the following microorganisms were initially isolated, which are presented in the diagram (Fig.2).

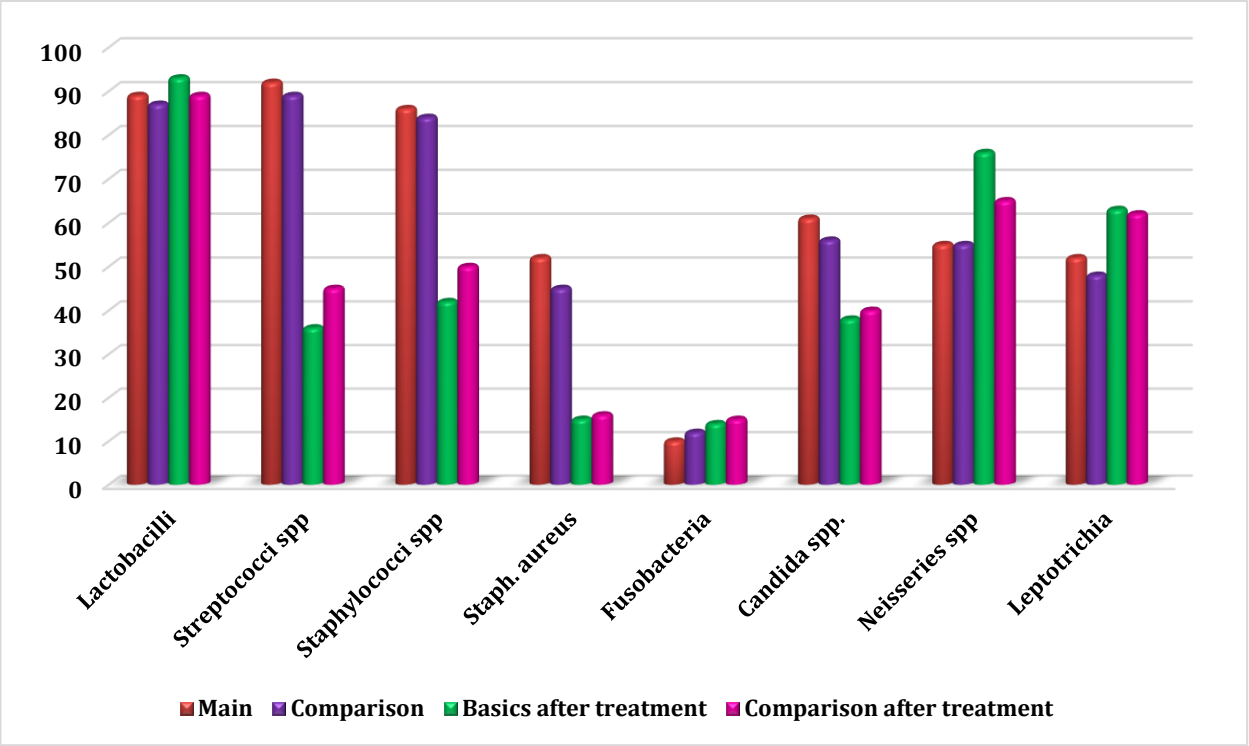

Figure 2. The nature of the microbiocenosis in the subjects.

Based on the data, the following conclusion can be drawn: in patients with UNGS, a natural imbalance of the oral microbiocenosis is observed with frequent growth of opportunistic flora, in particular, yeast-like Candida fungi.

After the treatment, a decrease in the titer of conditionally pathogenic microorganisms was noted in the main and comparison groups, respectively, by 3.1 and 2.4 times, which led to the normalization of the oral microflora. After 10 days of using the drugs, the average periodontal status indicator in the experimental group decreased to 0.7±0.09, in the control group to 0.7±0.12, which indicates an improvement of 90.8 and 89.7% of the assessed parameters from their initial level. A significant portion of the patients (experimental patients and control group patients) showed complete recovery.

Fig.3

Fig. 3.1. Abduvakhobova Sh. 14 years old before treatment

Fig.3.2. Abduvakhobova Sh. 14 years After antiseptic treatment by the irrigator and application of the Metralin Denta gel

Based on the obtained clinical, laboratory, and microbiological data, it can be concluded that the use of an irrigator in combination with Metralin Denta significantly improves clinical indicators compared to the group receiving only Metralin Denta. Patients who used the irrigator demonstrated faster and more stable improvements, including a decrease in inflammation, a reduction in gingival pain and bleeding, and a reduction

in tissue necrosis.

Thus, when studying the combined antimicrobial drug for the complex treatment and prevention of infectious and inflammatory diseases, it was determined that the use of the "Metralin Denta" gel increases the effectiveness of treatment of ulcerative-necrotic gingivostomatitis by enhancing the regenerative capacity of the mucous membrane and the immune response. Based on the data obtained, it can be concluded that the drug "Metralin Denta" (metronidazole+chlorhexidine), Uzbekistan, is an effective antibacterial, anti-inflammatory, and restorative agent in the treatment of patients with ulcerative-necrotic gingivostomatitis.

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