

**Substantiation of miramistin application and hydrolaser therapy at treatment
of a painful syndrome in dentistry practice**
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**Обоснование применения мирамистина и гидролазерной терапии
при лечении болевого синдрома в стоматологической практике**
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Abstract: *adequate treatment, the individual program of professional hygiene, which will allow stopping a acute painful syndrome and to warn display of a chronic painful syndrome. Without complications, the maximum intensity of a painful syndrome dies away in the first 3-5 days. It is necessary to stop effectively, as full elimination of pain after invasive treatment methods in dentistry practice is impossible as a rule.*

Аннотация: *адекватное лечение, индивидуальная программа профессиональной гигиены, которые позволят купировать острый болевой синдром и предупредить проявление хронического болевого синдрома. Без осложнений максимальная интенсивность болевого синдрома угасает в первые 3-5 суток. Необходимо эффективно купировать, поскольку полное устранение, как правило, невозможно, вследствие проявления боли после инвазивных методов лечения в стоматологической практике.*

Keywords: *a painful syndrome, prophylaxis, treatment, physiotherapy.*

Ключевые слова: *болевого синдром, профилактика, лечение, физиотерапия.*

Actuality of a problem. The problem of dental implantations takes an important place among dentistry reconstructive operations. The aggressive microbiological environment can lead to the acute inflammations demanding invasive forms of treatment [6, 7, 13]. Any of slowly current chronic inflammatory processes can become exacerbated, getting lines of acute inflammatory process. Thus as the exacerbation factor the infectious agent can act. The beginning of acute inflammation is connected with overcoming of the «system of restriction of disease severity», which is activated in the answer to cellular stress [5, 14]. At creation of stressful situation cellular mechanisms of adaptation are joined. Cellular stress under the influence of factors physical, chemical nature causes metabolic shifts with formation of AFK, spatially changed proteins and nucleic acids. The stress forms a small amount of these changes which will be neutralized without destruction of cells [5, 13, 14, 19].

Researches of last years have shown that the infectious inflammation can proceed without activator revealing in the subsequent. Action of a microbic component considerably strengthens severity of disease at the expense of inflammation factors. The chronic inflammation is considered as a basis of many systemic diseases, such diseases are based on metabolic disturbances in bodies and tissues, it is not rare at advanced age, atherosclerosis and also at tumor growth [6, 13, 14, 15]. Antioxidants application has prophylactic action at diseases of a chronic inflammation type. Now there is a formation of new representation about known inflammation for a long time as reactions of congenital immunity in norm and pathology [14, 15, 16]. Questions of pathogenesis, clinics, therapy and prophylaxis of parodontium inflammatory diseases continue to remain actual because of widely spreading in the whole world, they represent an economic and social problem. It is known that all inflammatory processes proceeding in an organism occur to alteration and reparation alternation [7, 13, 19]. These processes are regulated by immune system, but disturbance of processes and reparative regenerations of tissues that can lead to inflammation generalization with formation of the foci destruction of born tissue it is under certain conditions possible. According to researchers in development and progressing of these diseases great value has activation of processes lipids

peroxide oxidation, cross sensitization in reply to microbic invasion on the background of disturbances and also tissue hypoxia, directly causing disturbance of reparative regenerations processes [5, 6, 7, 15, 16].

Chronic parodontitis meets more often than caries by WHO data and is a principal cause of teeth loss. Chronic generalized parodontitis (CGX) seldom develops separately, as a rule, it serves as display of other chronic pathological process proceeding in an organism [1, 3, 9, 13]. It allows assume that at the base of disease the somatic pathology can lay. At patients with heavy forms of illness clinical symptoms in a kind of torpidity to standard therapy, suppuration from periodontal pockets, mobility of teeth, private exacerbation, presence of accompanying chronic pathology correlate 45 % of cases with immunograms, which show presence of slow inflammatory processes [1, 2, 4, 13]. Studying of cellular structure of a mucous membrane of a gum at CGP in different degree is expressed under the clinical data finds out distinction in quantitative and qualitative structure cellular infiltrate. Four multiple reduction of a middle lobe of lymphocytes in comparison with norm is revealed. It is established at liquid research of a periodontal pocket that CGP is accompanied by increase as a part of cells of liquid number lymphocytes.

Informations about the general and local immunometabolic disturbances at CGP are diverse and frequently inconsistent [5, 7, 13, 17]. Even in the presence of an indisputable fact of participation of immune mechanisms in development and progressing of parodontium diseases this problem remains opened for studying and is far from the decision, however the majority of authors specifies in necessity to differentiate immunorehabilitation of such patients [5, 6, 13, 16, 17, 19]. In classical parodontology supporting systemic or local antibiotic therapy usually is recommended. However it should be spent in strict conformity with indications owing to the possible systemic side-effects in particular including development, hypersensitivity and resistance even at the lowered levels of dosages [5, 7, 13]. Medicamental therapy is complicated at increased allergization the population. And combinations do not allow to receive desirable result with occurrence of side-effects on an organism of the patient in whole [4, 9, 10, 18]. Earlier various alternative methods including photodynamic or photothermal therapy have been offered. Antimicrobial photodynamic therapy (aPDT) till now has no wide application in parodontology. The low-level laser irradiation promotes to regeneration of tissues thanks to photobiological effect and in addition helps to stabilize a situation in parodontium tissues, an oral cavity of mucous membrane [2, 13]. Surgical operations (at odontogenic maxillary sinusitis, dental implantations, curettage of periodontal pockets) according to the literature in 35-40 % of clinical monitoring patients complain on displays of a painful syndrome of light or middle degree, for each of which exists a number of recommendations, medicamental treatment. However, algorithm of treatment of a severe painful syndrome (SPS), a chronic painful syndrome (CPS) in stomatologic practice and adjacent specializations is absent [11, 15, 19]. On the background of deterioration of an ecological situation, increase of allergic diseases, there is actual a search of new methods of therapy [1, 3, 4, 8, 9, 11, 18]. Algorithm of treatment of periimplantitis means mechanical clearance, decontamination, antiseptic processing of implantate, orthopedic designs, periimplantitis tissues. A traditional way of decontamination at use of the device and suspension structure «Vector-abrosive-fluide» can damage a surface of impantate forming retensional points for penetration of microorganisms [2, 9, 13]. Application of hydrolaser therapy in a combination to medical preparations is warned inflammatory reactions in parodontium tissues, periodontium, an oral cavity of mucous membrane (OCMM), soft tissues. A composition, which included the ozonized mineral water, natural adsorbent «Benta» bentonite clay - UA\10383\0101) - montmorillonite, provides cytoprotective effect reduce pains to subjectively transferable level, without preventing to carry out the patient habitual daily activity. Absence of individual professional leaving in patients behind an oral cavity after out-patient invasive interventions is frequent (curettage, implantations, extractions of teeth) in the period of wound stabilization, prolong terms of regeneration and increase probability recontamination. Distinguish three phases of a wound healing: an inflammation phase, a formation phase granulated tissue, a phase of maturing and remodeling granulated tissue. Last phase can last from some weeks till one month. However wound healing on a site of parodontium tissues is much more difficult: the gum edge adjoins with without vessel, hyperemic, firm surface of a root, thereof soon there is a defeat of a clot of fibrin. Proliferation of epithelium in an apical direction disturbs regeneration of a periodontium, cement of a root and an alveolar process. Above designated reasons motivate experts on a choice of adequate treatment, drawing up of the individual screening program of professional hygiene, which will allow stopping an acute painful syndrome, and to warn display of a chronic painful syndrome. Without complications, the maximum intensity of a painful syndrome dies away in the first 3-5 days, it is necessary to stop effectively, as full elimination of a pain during this period is impossible, as a rule. This aspect remains actual, despite efficiency of local anesthetics, analgesics, is preventive and till full elimination of a painful syndrome. For antiseptic processing of the basic group we applied 0,01-0,05 % a solution of miramistin in a composition with «Benta» (3,0 gr to dissolve on 100 ml. of thermal O3 water 36-38° C, till receipt of emulsion) in a combination of a hydromassage, laser phoresis on an oral cavity tissues. «Benta» the high-quality natural material consisting from 95 % dioctaedric smectitis. It is extracted on the Kudrinsky deposit of Crimea. It possesses by high ionited, adsorptive (from 80 to 200 and even 800 м 2 on 1 gr, depending on maternal breed), detoxicatinal, renders anti-inflammatory, immunomodulating effect. At intake course of treatment 10-12 procedures a preparation considerably reduction intensity of a painful syndrome during 4-5 days. Ozonization of thermal water reached by means of a multifunctional ozonizer of a model «Ozon-80» (ФЦ3 № 2010/07192 from 24.06.2010) a mode established by the instruction of the manufacturer for concentration of ozone (10,0-80,0 mg/l) in addition before and post operational period an irrigation of an oral cavity pass of 0,01-0,05 % by a solution of miramistin 2-3 times during a day 10-15 minutes from 500-1000 ml. by a course of 5-10 days.

The aim of the research undertaken by us is increase of efficiency of treatment and priorities of dentistry preventive distributions of local or systemic contamination of an oral cavity.

Materials and research methods

Please 48 patients, under clinical observation there were 45 persons (23 women, 22 men), at the age from 21 till 55 years, which have been divided into two groups, proceeding from the used methods of the organization of means for carrying out of treatment-and-prophylactic stomatologic mesures. In the 1st basic group have entered (24 people), in the 2nd control group (22 people). In 45 patients with indications to invasive methods took smear from an oral cavity (gingival sulcus, alveole) and identified sowed microorganisms. There are revealed golden in (56 %) and epidermal (20 %) staphylococci, hemolytic streptococcus (15 %) and fungi of sort Candida (9 %) in 45 examined. In associative communications the revealed organisms were defined in the basic group in 8 examined (33,3 %), and in control – in 7 patients (35,0 %). With the examined groups the structure of the found out microflora was almost identical. To patients of control group carried out standard treatment, local antiseptic processing by 0,2 % solution of chlorhexidine bigluconate, hydrolaser therapy, length of a wave of a red range with density of capacity from 0,87 to 0,91 microns, the going out intencity 10mVt with frequency 1,5 kHz in a pulse mode on 3 fields on length of an alveolar process of the maxilla for 2 minutes on the field spent. Then it is similar – on the mandible. The maximum total time of one session has made 12 minutes, to patients of the basic group – hydrolaser therapy with the ozonized composition of 0,01-0,05 % of miramistin. In 7-10 days after operation the microflora from an oral cavity in the basic group was sowed in 6 patients from 23 examine (25,0 %), and in control – in 15 from 22 examined (75,0 %). Through (1 month) after operation pathogenic microorganisms were sowed in the basic group in 2 examined (8,3 %), and in control – in 6 (30,0 %), (fig. 1). In patients of the first (basic) group of observation painful sensations (fig. 2) of the expressed character have been revealed in 1 from 23 examined (3,7 %), moderated – in 3 (11,1 %) and insignificant character – in 22 patients (85,2 %). In control group of observation the expressed painful sensations are noted in one from 22 examined (4,6 %), pains of moderate character – in 2 (9.1 %), pains of insignificant character – in 19 patients (86,3 %). In 3-4 days after operation painful sensations in the basic group (that people who treated with application of Miramistin) were in 3 (11,1 %), pains of moderate character – in 15 from 24 examined (55,6 %), and insignificant character – in 9 patients (33,3 %). In control group (with use of 0,2 % of solution chlorhexidine bigluconate) the expressed pains were in 7 patients (31,8 %), pains of moderate character – in 12 from 22 patients (80,0 %) and insignificant – in 3 (13,6 %), in 7-8 days (fig. 2).At home patients were given no steroid anti-inflammatory drugs - Ibuprom, and for strengthening therapy - Calici D3 Nycomed.

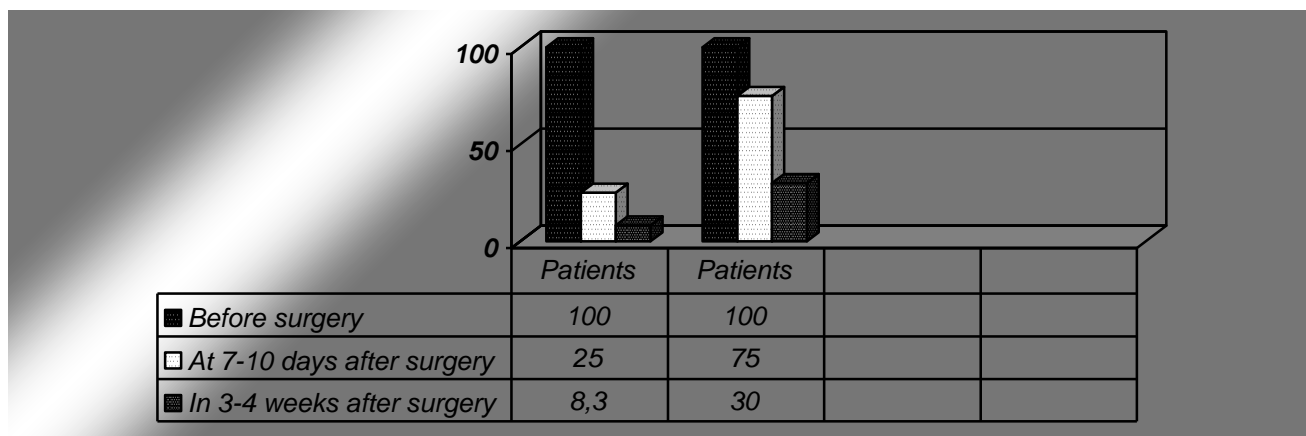


Fig. 1. Frequency of sifting of pathogenic microorganisms from an oral cavity in patients in dynamics of spent treatment

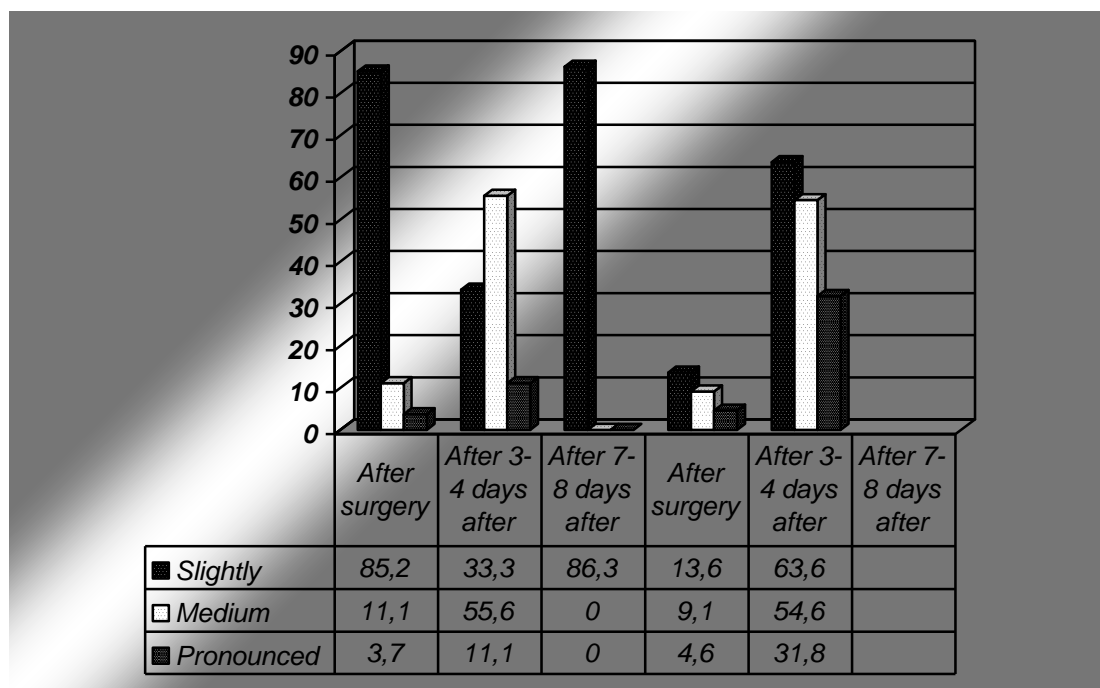


Fig. 2. Changes of painful sensations in patients after operations in dynamics of spent treatment %

Results and their discussion. On the basis of the spent observations of patients is proved that the multicomponent complex used for an oral cavity in pre - and the postoperative period, has expressed antiseptic, antiviral, anaesthetizing, immunomodulating action. Considerably reduces quantity of complications of acute painful syndrome (APS) displays, hematomas, dehiscence of seams, complications of inflammatory character in the early postoperative period, reduces probability of late complications chronic painful syndrome (CPS) in comparison with traditional methods of treatment. Hydrolaser therapy provides success of dental implantations, increasing design service life, intensifies healing processes, is widely applied at risky medical situations.

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