

Eurasian
Research Bulletin

Optimization of Conservative Treatment of Periodontal Diseases Using Modern Technologies

Mirzakulova Lola Tohirovna

Samarkhand State Medical University

**Burxonova Zarafruz
Qobilovna**

Samarkhand State Medical University

ABSTRACT

The aim of our study was to increase the effectiveness of treatment of patients with chronic generalized catarrhal gingivitis using dynamic electro neurostimulation and magnetotherapy techniques at the stage of conservative treatment.

Keywords:

electro neurostimulation, magnetotherapy techniques

Currently, an urgent problem is the treatment of periodontal diseases, which is due to the high frequency of periodontal diseases [1]. Insufficient motivation of patients with the first signs of the disease (gum inflammation, pain, bleeding), remain without due attention. The onset of gingival inflammation is recorded in the gingival sulcus, in which the quantitative and qualitative composition of the gingival fluid changes. In the gingival furrow, the number of polymorphonuclear leukocytes increases, in which, under the influence of endotoxins, degranulation occurs with the release of lysosomes from cells. Enzymes of lysosomal origin (proteases, hydrolases, lysozyme) interact with surrounding structures, causing and enhancing alterations. Cellular mediators include histamine, serotonin, prostoglandins, lymphokines, a slow-reacting substance, the release of which is carried out by polymorphonuclear leukocytes, mast cells and basophils. Biologically active components cause a sharp increase in vascular permeability, microcirculation is disrupted, blood flow slows down, thrombosis increases, vasculitis, hypocoagulation, hyperfibrinolysis, secondary hypoxia develop. These changes lead to

depolymerization of the intercellular substance of the gingival furrow epithelium, vacuoles, cracks appear and favorable conditions are created for deep penetration into the underlying tissues of not only toxins, but also bacteria. Microcirculation disorder increases vascular and tissue permeability. The breakdown of protective mechanisms is accompanied by inhibition of regeneration processes, the formation of pathological granulation tissue and the spread of inflammation to deeper lying tissues - the bone of the alveoli [1]. The complexity and multi-step nature of pathological processes in periodontal disease creates the need for the use of medications with a diverse mechanism of action - anti-inflammatory, painkillers, enzymes, drugs that stimulate microcirculation, correct immune defense, and many others that affect the pathogenetic links of the pathological process. The arsenal of pharmacotherapy is huge, but it should be noted that all medications have side and toxic effects associated with overdose, accumulation in the body, allergies and idiosyncrasies, dysbiosis. Most periodontal patients have somatic pathology and also receive treatment from internists, without

taking into account the appointments made by the dentist. Increasingly, the result of pharmacotherapy is the replacement of one pathological condition with another, often more severe. In this regard, the development of non-drug remedies and treatment methods free from these shortcomings remains relevant. This group includes physiotherapeutic methods that are widely used in periodontology, are used at the stages of diagnosis, complex therapy, prevention and rehabilitation in order to influence individual pathogenetic links of the process, as well as for symptomatic treatment [4]. Physical factors can stimulate the immunological reactions of the body, reduce the phenomena of general and local sensitization, change the neuro-humoral processes in the body and the pathological focus. To strengthen the local selective effect of the medicinal substance, restore microcirculation [4]. Timely and correct appointment of physical factors in complex therapy allows either to stop the initial manifestations of the pathological process, reduce its severity, severity of clinical symptoms and the likelihood of complications, or accelerate the change of phases of the pathological process, which allows other methods of treatment to be carried out in the most favorable conditions [1, 3]. One of the promising directions is the development of various options for the therapeutic use of pulsed current. The electric current is easily controlled and in a fairly wide range of characteristics is an effective irritant for structures concentrated in the area of reflexogenic zones and acupuncture points [4]. Dynamic electroneurostimulation (DENS) is a further development of percutaneous electroneurostimulation and acupuncture. The method consists in the therapeutic effect on reflexogenic zones and acupuncture points by short bipolar current pulses of various frequencies, the shape of which varies depending on the value of the total electrical resistance (impedance) of the tissues. DENS is carried out using portable percutaneous electrical stimulators, which have the property of changing parameters depending on the nature of electrical reactions of tissues in the subelectrode zone. The DiaDENS device provides a wide range of frequencies – from 10

to 200 Hz — for the treatment of a variety of diseases. In the treatment of periodontal diseases – 60-77 Hz, 15 minutes. The design of this device allows you to move it quickly during treatment, selectively affect the functional state of internal organs, the mechanisms of regulation of physiological reactions and pain sensitivity, improves blood circulation, has an anti-inflammatory effect, activates the formation of biologically active substances and metabolic processes in tissues, normalizes the tone of muscles and blood vessels. Dynamic electrical stimulation helps to improve overall well-being, improve mood and improve performance. Numerous studies show that the therapeutic effect of dynamic electroneurostimulation is based on multilevel reflex and neurochemical reactions that trigger a cascade of regulatory and adaptive mechanisms of the body [5]. DANCE therapy in the complex treatment of periodontal diseases can be used at any stage of treatment, allowing to stop the pain syndrome, consolidate the positive effect, reduce the likelihood of complications, accelerate the change of phases of the pathological process, allow other methods of treatment to be carried out in the most favorable conditions, thereby increasing the motivation of patients for further treatment, strengthen their faith in a positive result. A prerequisite for the appointment of DANCE therapy is compliance with the indications and contraindications to its use. The method can be prescribed by the attending physician, if necessary, coordinating the treatment method with a reflexologist. The procedures are carried out by medical personnel [5]. Another method of physiotherapy is the use of magnetic and electromagnetic fields that locally change the concentration of ions in the cell. It is known that calcium ions are important for the regulation of membrane potential. In the mitochondrial membrane, due to the difference in electrical potentials, there is a jump in the concentration of hydrogen ions, which is used by the cell for the synthesis of ATP. Apparatus for magnetotherapy, magnetophoresis, electrophoresis, electrical stimulation and anesthesia in dentistry – "AMO-ATOS-E". Under the influence of the magnetic field, the elasticity

and tone of the vessels are normalized, the speed of blood flow in them increases, the diameter of the capillaries increases. The activation reaction caused by a field with certain parameters is accompanied by an increase in the functional activity of the adrenal glands, thyroid gland, an increase in the content of nucleic acids in the blood, stimulation or normalization of immunological reactivity. The therapeutic effect of magnetic fields is due to vasodilating, antispasmodic, anti-inflammatory, decongestant, immunostimulating and sedative effects. The AMO-Atos-E device provides a dynamic effect by a "running" magnetic field with a maximum set of biotropic parameters. The device provides a resonant effect in the range of functioning of the main body systems. The effect is carried out simultaneously at three frequencies – at a frequency of 1-2 Hz, close to the normal heart rate, at a frequency of 6-12 Hz, close to the normal values of the alpha rhythm of the brain, and at a frequency of 50 Hz – the most physiological in terms of nerve muscle currents. The impact carried out by the device is multi-channel, because it has several outputs and allows you to connect two emitters of a traveling magnetic field simultaneously. The device allows you to provide a combined effect of a traveling pulsed magnetic field and an electric current. In addition, the emitter of the magnetic field can act through a napkin with a drug during electrophoresis. At the same time, the combination of electrophoresis with magnetophoresis gives an effect significantly higher than the total, since the kinetic properties of the magnetic field are more pronounced with an increase in the number of ions of the drug, and electrophoresis just contributes to their increase. The effectiveness of resorption, anti-inflammatory, vasodilating and decongestant therapy with the AMO-ATOS-E apparatus is based on the activation of metabolic processes, improvement of axon conduction. The use of the device in dentistry is due to the impact on such links of pathogenesis as inflammation, microcirculation disorders, increased vascular permeability, edema and hypoxia of tissues, insufficiency of general and local mechanisms of immunological protection, allergic phenomena.

The aim of our study was: to increase the effectiveness of treatment of patients with chronic generalized catarrhal gingivitis using dynamic electroneurostimulation and magnetotherapy techniques at the stage of conservative treatment.

Materials and methods: of the study For two years (from January 2008 to January 2010), we conducted an examination and conservative treatment of 112 patients with chronic generalized catarrhal gingivitis (44 men and 68 women aged 18 to 26 years). The studies were conducted at the UGMA dental clinic, somatically preserved patients participated in it. During treatment, patients complained of bleeding gums during brushing (42.3% of the examined), bad breath (43.7%), itching, pain in the gums (48.2%). Great importance was attached to the collection of anamnesis, the identification of errors in individual oral hygiene (Green – Vermillion index), when examining the oral cavity, the condition of the oral mucosa, the alveolar processes of the upper and lower jaws (papillary – marginal – alveolar index PMA) was assessed, periodontal Russell index (PI), the index of bleeding gingival papillae were determined in periodontitis (RVI), bite, recorded the index of the CPU of teeth, the state of the dentition, the presence of traumatic occlusion, etc. From the functional methods of the study, we used the assessment of the vacuum resistance of the capillaries of the gum according to the Kulazhenko method in the area of the central incisors of the lower jaw. Orthopantomographic examination for diagnosis (ORTHOPHOS device, the average radiation dose is 36 mcsieverts). The conservative stage of patient treatment provided for the training of all examined patients in the rules of oral hygiene, the selection of individual hygiene products, professional oral hygiene, the elimination of local irritating factors, oral sanitation, anti-inflammatory periodontal treatment. The patients were divided into 3 groups in any order. Group 1 – people who received traditional treatment, the treatment plan of group 2 included the method of dynamic electrical stimulation using the device DiaDENS-

PCM, 10 daily procedures. DANCE therapy was carried out by a contact stable technique using a remote electrode applied to the segmental zones for 5 minutes on each side. Dosing of the impact force was carried out individually. Patients of group 3 included in the treatment plan a course of magnetic therapy using the AMO-ATOS-E apparatus for 10 daily procedures. The effect was carried out externally by direct application of a traveling magnetic field emitter to the projection points of gingival inflammation using two remote magnetic coils for 5 minutes for each exposure zone in accordance with the instructions for using the device. The modulation frequency is set to 1 Hz with an increase to 10 Hz by the middle of the course. The duration of the procedure is 15 minutes. The number of procedures was 10. The effectiveness of the treatment was evaluated 10 days, 3 months, 6 months after the start of treatment. Statistical processing of the obtained research results was carried out using the Student's method. The results of the study and discussion of the data obtained During the initial examination of the oral cavity in all patients were revealed congestive hyperemia, swelling of the papillary (98.7%), marginal (84%) gums, slight pasty – in 27%, bleeding during probing, the presence of soft plaque, supra-gingival tartar - 100% of patients. Malocclusion and the position of individual teeth were detected in 48% of patients. The CPI index in patients with catarrhal gingivitis in group 1 was 6.72, in the second – 7.16, in the third – 6.82. The Green-Vermillion index in the first group was 3.34, in the second – 3.32, in the third – 3.37 (unsatisfactory level of oral hygiene), PMA – group 1 – 46.85, group 2 – 48.53%, group 3 – 48.62%. The bleeding index was 1.42, 1.41 and 1.41, respectively. The rate of hematoma formation in the first group was 14.8 seconds, in the second and third – 13.9 and 14.1. There were no statistically significant differences in objective data, index evaluation, additional functional examination during the initial examination in the main and control groups. Index evaluation indicators in patients with chronic generalized catarrhal gingivitis in the main and control groups before treatment and

during follow-up (see Table). 10 days after the start of conservative treatment, patients in all groups noted an improvement in subjective feelings, the effectiveness of the treatment. An objective study revealed a decrease in inflammatory phenomena in the periodontium, after professional deposits. However, 62% of the patients of the first group and 32% of the subjects of the third group noted the appearance of hyperesthesia of the hard tissues of the teeth, a feeling of discomfort after professional oral hygiene, persisting from 3-5 days to 1 week. In the second group, these complaints were presented by only 20% of patients who noted the disappearance of unpleasant sensations after the second procedure of dynamic electroneurostimulation. It should also be noted that in the studied groups, the indicators of PMA, bleeding were significantly lower than in the control group at all follow-up periods. In general, the results of conservative treatment of patients with periodontal diseases in all groups can be assessed as satisfactory. Oral hygiene has improved, signs of inflammation have decreased. A questionnaire conducted after treatment showed that the effect of dynamic electroneurostimulation caused a more pronounced analgesic effect.

Conclusion: The results of our study indicate the effectiveness of the use of DANCE therapy and magnetotherapy in the conservative treatment of periodontal diseases. The rapidly advancing analgesic effect during treatment allows patients to fully exercise oral hygiene, gives a feeling of comfort. Having analgesic, anti-inflammatory effect, DANCE therapy and magnetotherapy can reduce the intake of medications, shorten the treatment time of patients with periodontal diseases. The use of dynamic electroneurostimulation proved to be more effective.

References:

1. Maxzuna U., Zараfruz B. IMPROVING THE PROVISION OF THERAPEUTIC DENTAL CARE TO PREGNANT WOMEN //Web of Scientist: International Scientific

- Research Journal. – 2022. – Т. 3. – №. 11. – С. 618-623.
2. Ортикова Н. POLITICAL ELITE AS A SCIENTIFIC PROBLEM //МЕЖДУНАРОДНЫЙ ЖУРНАЛ КОНСЕНСУС. – 2021. – Т. 2. – №. 1.
 3. Zarafuz B., Hekmat K. H. A. S. MANIFESTATION OF HERPETIC INFECTION IN THE ORAL CAVITY AND THEIR TIMELY ELIMINATION //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 10. – С. 47-52.
 4. Ортикова Н. POLITICAL ELITE AS A SCIENTIFIC PROBLEM //МЕЖДУНАРОДНЫЙ ЖУРНАЛ КОНСЕНСУС. – 2021. – Т. 2. – №. 1.
 5. Ruziyeva K. A., Burhonova Z. K. K. Complex Application Of Magnetic Laser Therapy And Propolis Tincture For The Prevention And Treatment Of Chronic Recurrent Aphthous Stomatitis //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – Т. 3. – №. 06. – С. 127-130.
 6. Alimdjanovich R. J., Khairullaevna O. N., Normuratovich N. A. CORRECTION OF PSYCHOLOGICAL STRESS IN CHILDREN WITH NON-PHARMACOLOGICAL METHODS OF DENTAL ADMISSION //Archive of Conferences. – 2021. – С. 108-114.
 7. Ruziyeva K. A., Burhonova Z. K. K. Complex Application Of Magnetic Laser Therapy And Propolis Tincture For The Prevention And Treatment Of Chronic Recurrent Aphthous Stomatitis //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – Т. 3. – №. 06. – С. 127-130
 8. Qobilovna B. Z., Azamatovich B. M. MANIFESTATION OF SYMPTOMS IN THE ORAL CAVITY IN PATIENTS WITH TUBERCULOSIS INFECTION //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 402-407.
 9. Bustanovna I. N. ASSESSMENT OF CLINICAL AND MORPHOLOGICAL CHANGES IN THE ORAL ORGANS AND TISSUES IN POST-MENOPAUSE WOMEN //Thematics Journal of Education. – 2022. – Т. 7. – №. 3.
 10. Qobilovna B. Z., Hekmat K. H. A. S. CLINIC AND TREATMENT OF ACUTE AND RECURRENT HERPETIC STOMATITIS IN YOUNG PATIENTS //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 10. – С. 40-46.
 11. Bakhtiyorovna M. U. MODERN METHODS PREVENTION AND TREATMENT POSTOPERATIVE HYPERESTHESIA IN ORTHOPEDIC DENTISTRY //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 12. – С. 1104-1108.
 12. Qobilovna B. Z., Maxzuna U. Improvement of Providing Therapeutic Dental Care to Pregnant Women. Therapeutic and Preventive Measures //Eurasian Research Bulletin. – 2023. – Т. 16. – С. 146-150.
 13. Sadriev N. N. Optimization of orthopedic treatment of dentition defects in patients with chronic diseases of the gastrointestinal tract //Science and Education. – 2022. – Т. 3. – №. 10. – С. 63-67.
 14. Qobilovna B. Z. MODERN ASPECTS OF ETIOLOGY AND PATHOGENESIS OF HERPES ZOSTER //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 12. – С. 152-156.
 15. Ortikova N., Rizaev J. THE PREVALENCE AND REASONS OF STOMATOPHOBIA IN CHILDREN //Euro-Asia Conferences. – 2021. – Т. 5. – №. 1. – С. 182-183.
 16. Qobilovna B. Z. GENERAL CHARACTERISTICS OF RECURRENT HERPETIC STOMATITIS IN THE MOUTH //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 12. – С. 162-168.
 17. Norbutaev A. et al. Results of the effect of complex treatments on perodonot microcirculation in child periodontitis with iron deficiency //European Journal of Molecular & Clinical Medicine. – 2020. – Т. 7. – №. 2. – С. 2020.

18. Norbutaev A., Nazarova N. Assessment of the results of the level of oligopeptides of average molecular mass in the oral fluid of employees in the production of ammonium and nitrate saltpeter //Frontline medical sciences and pharmaceutical journal. – 2021. – Т. 1. – №. 08. – С. 24-34.
19. Nazarova N. S., Islomova N. B. POSTMENOPAUZA DAVRIDAGI AYOLLARDA STOMATOLOGIK KASALLIKLARINING KLINIK VA MIKROBIOLOGIK KO 'RSATMALARI VA MEXANIZMLARI //Журнал" Медицина и инновации". – 2022. – №. 2. – С. 204-211
20. Sharipovna N. N., Bustanovna I. N. Assessment of clinical and morphological changes in the oral organs and tissues in post-menopause women //Frontline medical sciences and pharmaceutical journal. – 2022. – Т. 2. – №. 05. – С. 60-67.
- 21.