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Inflammatory Periodontal Diseases and its Complex Methods Treatment

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Introduction: Periodontal disease is currently one of the most common diseases in dental practice, affecting patients of all ages. The structural and functional status of the periodontium, as well as other mucous membranes, depends on the activity of the hormonal background in the body. As practice shows, the bacterial flora is the underlying cause of periodontal disease in only 20% of cases, and microorganisms are primarily secondary aggravating factors, not causative factors. If bacteria were the cause of periodontal disease, cleaning solutions and disinfectants would have already solved the problem by the first or second day, but unfortunately this is not the case in practice. It is time to analyze the composition of the microflora of the plaque and determine which microflora should be directed to medical treatment, as in gingivitis and periodontitis. The main microorganism that must already be fought in gingivitis is P. gingivalis, which has many pathogenic properties. Embedded in epithelial cells and tooth ligaments, it produces leukotoxins that destroy neutrophils, enzymes that degrade the protein matrix, and gram-negative bacteria produce metabolites that lyses bone. Speaking of microcirculatory disturbances, activated by inflammation, microvessels begin to grow actively and continuously, forming many immature inflammatory vessels, which lack a central elastic wall and are complex and fragile (bleeding gums are seen in the clinic). The leading links of blood flow increase and outflow (venous network) remains unchanged, resulting in venous stagnation, accumulation of metabolic toxins and extracellular fluid, tissue edema, and impaired cellular communication and interaction. This process enters a chronic phase and is self-sustaining, so that no new periodontal ligament can be formed.

Materials and methods: Therefore, the main method to combat inflammatory periodontal disease (VZP) is the mechanical destruction of supragingival and subgingival biofilms and the formation of biologically adapted root surfaces, which contribute to the restoration of tooth attachment. The etiologic corollary in the treatment of periodontitis is vasectomy using invasive techniques. And if necessary, all other methods and means (drugs) aimed at ameliorating the inflammatory and atrophic processes in the periodontal complex are as effective as possible. In the initial stages of treatment, it is important to perform quality instrumental removal while aligning the root surfaces. Currently, periodontics uses a variety of methods to remove adherent material. Depending on the method of ultrasonic generation, instruments can be divided into magnetostrictive and piezoelectric types. The elliptical orbit of the magnetostrictive scaler (MS) nozzle tip reduces the traumatic effect of ultrasonic waves on the hard tissues of the teeth; the MS nozzle heats quickly and the water is also heated; and the piezoelectric nozzle is heated by the ultrasonic waves. Not only is careful work provided that does not damage the restorative structures, but the gentle effect on the contact with the soft tissue of the tooth makes professional hygiene procedures painless and comfortable for the

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patient. Thus, the use of magnetostrictive ultrasound technology has become generally recognized as the least traumatic method of removing dental deposits. However, if the patient suffers from sensitivity, it is recommended that an additional application of the therapeutic and prophylactic paste "Nuprosensodine" containing Novamin (Ca-phosphosilicate and Na-bioactive glass) be applied to completely eliminate pain during and after hardware scaling. It is designed for professional cleaning and polishing of teeth and combines three effects simultaneously: removal of deposits, polishing and desensitizing properties. Upon application, sodium ions (pH elevation), calcium, and phosphorus are instantly released on the tooth surface, forming a protective mineral layer that continuously seals open dentin tubules. In other words, the basis of the local influence on the inflammatory process of the periodontal complex is the complete elimination of mineralized and non-mineralized dentin deposits, and drug treatment contributes to a faster resolution of clinical signs of inflammation and prolonged remission time The opinion that the treatment of VZP should be complex seems well established. To be fair, it should be noted that this is a statement of intent rather than an existing reality. Of greatest interest among dentists are the drugs used for VZP. We still have the strong impression of a conservative trend in the treatment of periodontal disease that is driven by inertia, ignoring both surgical and orthopedic interventions. Since the most serious factor in periodontal inflammation is the persistence of periodontopathogenic flora in the oral cavity, normalization of the oral flora is the main challenge for the use of various spectrum agents. Therefore, the most widely used agents in the treatment of chronic generalized periodontitis (CGP) are antimicrobial agents, which can be divided into two main groups.

1) Antiseptics are substances with low selective activity. They interact with the proteins of microbial cells, causing coagulation and preventing the growth of pathogenic microflora;

2) Antibiotics are substances of natural or semi-synthetic origin that act directly against the pathogenic microflora in periodontal inflammation. Relatively recently, fluoroquinolones IV generation antimicrobial agents have been used in periodontology for antimicrobial chemotherapy. Moxifloxacin, gatifloxacin, and hemifloxacin are significantly superior in their efficacy against pathogenic bacteria compared not only to fluoroquinolones but also to other antibacterial agents recognized in dentistry. There is evidence of high efficacy in the use of macrolide antibiotics (oleandomycin and erythromycin) and sulfonamide antibiotics. The polyene antibiotics levolin and nystatin are used for antifungal therapy. They are used under a bandage in the form of a 5% ointment or in the form of an application solution. Antifungal agents also include decamine and decamethoxin, the latter in the form of a 0.01-0.02% solution used to cleanse the oral cavity. The antibiotic trichomonoside is used in a 1% solution to combat oral trichomoniasis. The modern trend toward individualization can be seen in everything: capsules for anesthetics, capsules for filling materials, unidresses for bonding systems, individual sachets of remineralizing gel, and so on. Therefore, we periodontists must keep up with the times to ensure that our treatments are not only technically high quality, but also as individualized as possible in the eyes of the patient. It is necessary to create the required drug concentration throughout the treatment area and furthermore to maintain the required drug concentration for the required time. However, because of the secretion of saliva and gingival fluid, it is virtually impossible to constantly decrease the concentration of the drug, weaken the therapeutic effect, or stop it altogether. We have developed a method for the long-term

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retention of drugs in the gingival mucosa by manufacturing individual mouthguards made in monoblock form on a MINISTAR thermoforming device using a thermoplastic elastic material, bio or copiplast. Non-drug methods that can replace or significantly limit the need for pharmaceuticals and at the same time affect various aspects of the pathological process are increasingly attracting attention. Recently, the complex hardware "Vector" from Durr Dental (Germany) has been used for the treatment and prevention of periodontal disease, successfully removing biofilm, plaque, tartar, and endotoxins, as well as disease-causing bacteria quickly and effectively. At the same time, according to many authors, ozone therapy is a very effective way to treat many diseases based on inflammatory syndromes with bacterial etiology. However, in the local treatment of periodontal pockets, ozone has only a superficial antimicrobial effect. In this regard, the use of a "vector" device, which uses distilled ozone water instead of distilled water, is of great scientific and practical importance. The positive effect of hydroxyapatite suspension particles when using the "Vector" device is recognized and contributes to the creation of optimal biological conditions for the regeneration of periodontal structures as well as hard tooth tissue, and the fact that the procedure is painless for the patient provides a positive incentive to perform systematic preventive and supportive treatment measures The painlessness of the procedure for the patient is very important in that it forms a positive incentive to implement systematic preventive and supportive treatment measures. In the treatment of periodontal disease, the use of the "Vector" device with ozone distilled water provides the following benefits:

1) persistent therapeutic effect in most percent of cases and in a shorter time (approximately 2 times compared to traditional remedies;

2) when assessing the microbial status of the periodontal pocket, positive dynamics was revealed; 3) ozone therapy, unlike antibiotic therapy, has no side effects, as a result of which it can be recommended to patients with intolerance or ineffectiveness of therapy using other methods. Plasmolifting, the injection of platelet—rich plasma obtained from the patient's blood into the body tissues, sounds more and more often as an innovative method of treating VZP. A liquid fraction of blood is used, Blood is obtained from a vein, driven in a vibration-free centrifuge, along the transitional fold of the upper and lower jaw. A course of 3-5 visits with an interval of 5-6 days In modern dentistry, treatment methods that have a pronounced positive effect with a minimum of side effects are of great interest. One of these methods is phytotherapy. The most important advantages of phytotherapy over traditional methods of treatment are:

1) herbal medicines used in phytotherapy, due to the presence of new tasks of modern medicine of various groups of biologically active substances can have a complex effect on periodontal tissues: antiseptic, analgesic, bactericidal, bacteriostatic, anti-inflammatory, keratoplastic decongestant, etc.;

2) phytopreparations are low-toxic, their effect is characterized by softness, rare occurrence of allergic reactions, which allows, if necessary, to take them for a long time (for years) without harm to the patient, since they do not develop a stable adaptation of micro- and macroorganism;

3) phytopreparations can be recommended to patients of all age groups;

4) an important advantage of herbal preparations is also usually the pleasant organoleptic properties of biologically active substances;

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5) phytopreparations also stimulate tissue regeneration processes. In addition, medicinal plants have a positive effect on the macroorganism as a whole: they restore the normal intestinal microflora, help in the elimination of dysbiosis and normalize the functioning of many internal organs, also strengthening the immunity of the general immunity. The range of plants used in modern dentistry for the treatment of CGP is quite wide. The most actively used medicines are based on the bark of oak, chamomile, calendula, sage, St. John's wort, yarrow, etc. One of these drugs is "Stomatophyte" — a complex preparation of 7 medicinal plants. The composition of the preparation includes: calamus root, oak bark, sage leaves, arnica grass, peppermint leaves, chamomile flowers, thyme grass. "Stomatophyte" helps to relieve inflammation, irritation, pain, burning, swelling, reduce bleeding gums and bad breath. A special place among the drugs used in phytotherapy is occupied by a systemic drug — "Ginkum". It is based on the relict plant ginkgo two-lobed. Interest in ginkgo arose in the 50s of the XX century. in Western Europe, when his clinical and laboratory studies began. At that time, for the first time, scientists established the angioprotective and antioxidant properties of ginkgo leaves. Currently, in America, various preparations based on ginkgo biloba are among the five most purchased medicines. In France, ginkgo biloba leaf extract is one of the most commonly prescribed drugs, and in Germany it is recognized as the most popular. Ginkgo leaf extract has a complex chemical composition; it includes more than 40 biologically active ingredients, which together cause a huge number of positive effects. Ginkgo biloba stimulates the biosynthesis of substances that dilate blood vessels in the brain, increases blood flow in the arterial, venous and capillary channels, which contributes to an increase in oxygen and glucose consumption by tissues and cells. This effect also helps to prevent high blood pressure and helps to avoid complications such as stagnation of blood in peripheral vessels. Regular intake of drugs based on it helps to restore blood flow in areas with vasomotor paralysis. Ginkgo biloba also reduces the concentration of cholesterol in the blood. It has an antioxidant effect, which is expressed not only in the destruction of existing free radicals, but also in the inhibition of the formation of peroxide compounds from membrane lipids (Kalikinskaya E., 2000). The vasodilating effect noted in studies, an increase in blood flow in the capillary bed in peripheral vessels, as well as antihypoxic and decongestant effects favorably distinguish this drug from others. Since any pathological process in the oral cavity is associated not only with an inflammatory reaction caused by microbial aggression, but also with microcirculatory disorders, the main role in the development of which is played by a violation of blood flow in the capillaries, the use of this drug opens up new horizons in the treatment of periodontal diseases. Thus, phytotherapy is one of the promising directions in modern dentistry, since phytopreparations have a mild complex effect on the body as a whole, are non-toxic, non-allergic, and can be used in all age groups. They are effective in prevention and long-term treatment, and are also a worthy alternative to antibacterial drugs. In the algorithm of conservative treatment of chronic generalized periodontitis of mild form, along with antiseptic drugs, it is necessary to include drugs that stimulate blood flow in the periodontium, since the restoration of microcirculation in the affected tissues under the action of antibacterial drugs does not occur completely. According to the conducted research, the best result was shown by the complex of phytopreparations "Forest balm" and "Ginkum". It is recommended after professional oral hygiene to prescribe

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herbal preparations according to the scheme: "Forest balm" 2-3 times a day for 14 days, "Ginkum" 1-2 capsules 3 times a day for at least 8 weeks

Conclusion: Thus, periodontal disease is a multifaceted and very interesting area of our body, it requires in—depth study and a scrupulous attitude to oneself. The timing of the onset of clinical well-being and the duration of the remission period are individual and depend on many factors: age, the presence of general somatic pathology, the severity of the disease, unfavorable local factors, the gum biotype, which should be taken into account by the dentist in clinical practice.

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