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TREATMENT OF GENERALIZED PARODONTITIS IN PATIENTS WITH PREDOMINANCE OF THE SYMPATHETIC NERVOUS SYSTEM

Abstract. *In the pathogenesis of generalized periodontitis, a significant place belongs to a variety of common diseases. In recent years, interest has increased in the study of the peculiarities of the influence of the autonomic nervous system on the development of generalized periodontitis. Some features of the course of various pathological conditions are noted, depending on the state of the autonomic nervous system of the patient, which must be taken into account when treating them. In view of this, a medical treatment scheme for generalized periodontitis was proposed in patients with a predominance of the sympathetic vegetative nervous system. Aim: Determination of the clinical efficacy of the proposed complex treatment of generalized periodontitis of acute and chronic course in patients with predominance of the sympathetic nervous system. Materials and methods. For this study, 55 patients were selected for generalized periodontitis with a predominance of the sympathetic nervous system. Drug treatment was performed using the proposed premedication. A comprehensive examination of the state of periodontal tissues of patients before and after treatment was performed. To evaluate the clinical efficacy of the treatment, the Schiller-Pisarev sample (1962), the PMA index for C. Parma (1961), the Fedorov-Volodkin's hygienic index (1978), and the Kulazhenko vacuum test (1961) were used. Results. It was found that the inclusion of the proposed premedication in the complex therapy of patients with generalized periodontitis can effectively suppress the degenerative-inflammatory process in the periodontal tissues. This confirms the decrease in the PMA index, an increase in the time of hematoma formation during a vacuum test by Kulazhenko, and an improvement in the level of oral hygiene. Conclusions. The application of the proposed premedication can improve the effectiveness of treatment of generalized periodontitis in patients with predominance of the sympathetic nervous system.*

Keywords: *generalized periodontitis, patients with predominance of the sympathetic nervous system.*

Introduction. Treatment of patients with generalized periodontitis should be carried out in a complex manner, depending on the peculiarities of the course and the clinical picture of the disease. In this case, the general condition of the body of patients must be taken into account, which has a significant impact on the course of the disease and the outcome of treatment. Development of periodontal diseases quite often determines the patient's general-somatic diseases of various organs and systems [10, 11, 13, 16, 18, 19]. It should take into account the influence on the development of these diseases and in the future on the generalized periodontal state of the autonomic nervous system. Depending on the state of the autonomic nervous system, a different course of these general-somatic diseases is noted, which must be taken into account when treating generalized periodontitis [1, 5, 18, 19, 21].

Thus, the determination of the state of the autonomic nervous system in patients with generalized periodontitis is of great importance for the development of the most effective

methods of treatment for their periodontal diseases [1, 18, 19, 21]. This is especially important in the case of an acute course of generalized periodontitis, since in this course of the disease, the general condition of the patient's body is strongly influenced. It should also take into account the integrative role of the autonomic nervous system on the vascular and nervous systems of periodontal tissues [18, 21]. Achieving the balance of sympathetic-parasympathetic relationships (by increasing parasympathetic activity in patients with sympathetic tonic type) can improve blood circulation [11, 15]. To achieve this goal and increase the efficiency of patients with generalized periodontitis we have developed certain schemes for the medical treatment of patients with generalized periodontitis with different types of autonomic nervous system. In particular, in this study the features of the medical treatment of generalized periodontitis I degree in patients with a predominance of the sympathetic nervous system (chronic and acute course) are presented.

Objective: to determine the clinical efficacy of

the proposed complex treatment of patients with generalized periodontitis of acute and chronic course in the presence of their predominance of the sympathetic nervous system.

Material and methods of research. This clinical study was conducted on two groups of patients with generalized periodontitis. The first group consisted of 20 patients with an acute course of generalized periodontitis I degree and prevalence of sympathetic nervous system in them, aged 25-45 years. Among them there were 14 (70,0%) women and 6 (30,0%) men. These patients formed the IA (main) study group. For the normalization of the state of their autonomic nervous system, a developed scheme of medical therapy was used (Patent for Utility Model No. 115084, Method of treatment for patients with generalized periodontitis of acute course in which the activity of the sympathetic department of the autonomic nervous system prevails, dated March 27, 2017). Evaluation of the state of the autonomic nervous system was carried out by determining the Kerdo index [9].

For this purpose, for the medical preparation before each visit to dentistry patients are assigned:

"Anaprilin" 0.01 g - 1 tablet 2 times a day, tincture of valerianum 25 drops 3 times a day and "Doxazosin" 0,001 g - 1 tablet 1 time per day, as well as the fact that after a dental intervention is prescribed course of 3-5 days: "Ibuprofen" 0.2 g - 2 tablets 3 times a day, tincture of valerian 20 drops 3 times a day, "Anaprilin" 0.01 g - 1 tablet 4 times a day and "Doxazosin" 0,001 g - 1 tablet 1 time per day.

Control (IB) group consisted of 12 patients with acute course of generalized periodontitis, I degree with predominance of sympathetic nervous system. Treatment of periodontal disease in them was carried out by generally accepted methods in accordance with the treatment protocols approved by the Ministry of Health of Ukraine in 2004.

The second (2A main) group was 25 patients with generalized chronic periodontitis with a predominance of the sympathetic nervous system, aged 25-45 years. Among them there were 17 (68,0%) women and 8 (32,0%) men. These patients were prescribed the developed scheme of medical preparation (Patent of Ukraine to utility model number 115083, dated 27.03.2017).

Before each visit to the dentist, they were given a general medical training course for two days:

"Anaprilin" 0.01 g - 1 tablet 2 times a day,

tincture of valerian 25 drops 3 times a day. After a dental intervention, they were given a course of 3 days: Ibuprofen 0.2 g - 2 tablets 3 times a day, tincture of valerian 20 drops 3 times a day, "Anaprilin" 0.01 g - 1 tablet 3 times per day.

The control group (2B) consisted of 12 patients with generalized periodontitis with a predominance of the sympathetic nervous system. Treatment of periodontal disease was carried out in accordance with generally accepted methods (in accordance with the treatment protocols approved by the Ministry of Health of Ukraine in 2004).

Before and after treatment, all patients were screened for periodontal tissues. The severity of the inflammatory process in the gums was evaluated using the Silness J. index, Löe H (1964), the Schiller-Pisarev (1962) and the PMMA index for C. Parma (1961). The hygienic state of the patient's oral cavity was determined using the hygienic index of Fedorov-Volodkin (1978). The state of permeability of the vessels of the gums was evaluated using a vacuum test for Kulazhenko (1961) [6, 12, 17, 20, 22]. For the diagnosis of periodontal disease, the classification of periodontal diseases by M.F. Danilevsky [3] was used. The obtained results were processed by statistical methods using Styuden's personal computers [14].

Local treatment of both groups of patients with generalized periodontitis was carried out according to the generally accepted scheme. For antiseptic rinses a 0.5% solution of chlorhexidine bigluconate and benzhydamin hydrochloride (Tantum Verde®) [2, 4, 7, 8] was used. This drug has a local anti-edema and antibacterial effect.

During local treatment, all local stimuli of periodontal tissues were thoroughly removed: dental stones, poor quality fillings, sharp edges of teeth, etc. In the case of acute course of generalized periodontitis, for the reduction of secretions from periodontal pockets, applications and instillations in periodontal pockets of preparations of proteolytic enzymes with antibiotics were used. As anti-inflammatory therapy, paste was used with non-steroidal anti-inflammatory drugs (mefenamine sodium salt, etc.). To suppress the microflora of periodontal pockets antibacterial preparations were used in accordance with the composition of the microflora of periodontal pockets.

Patients in the main group, before each visit to the dentist and appropriate dental intervention, were prescribed medication to normalize the

state of the autonomic nervous system in accordance with the proposed scheme.

Research results. The use of the proposed scheme of medical preparation allowed to significantly reduce the negative reactions of patients to medical interventions. Patients noticed a more calm response to dental manipulations, a rapid decrease in pain in the gums and secretions from periodontal pockets. In patients of the first main group with an acute course of generalized periodontitis, a significant improvement in the state of periodontal tissues was noted in all 20 (100.0%) patients.

Improved hygienic state of the oral cavity as evidenced by a decrease in the hygienic index of 148.69% from 2.86 ± 0.38 to 1.15 ± 0.35 . In 18 (90.0%) patients, the level of inflammation in the gums decreased: the index of PMA decreased by 166.12%: from $48.7 \pm 0.85\%$ to $18.3 \pm 0.67\%$. The time of the formation of vacuum hematomas increased from $11,7 \pm 1,8$ s to $23,5 \pm 1,9$ s. This indicated an improvement in the state of periodontal vessels. The average treatment period for patients in this group amounted to 4.1 visits to the dentist.

In the control group of patients with acute generalized periodontitis, improvement in the periodontal condition was noted in 9 (75.0%) patients. To achieve such an effective treatment result, an average of 6.5 visits to the dentist's patients was required. Also, the level of inflammation in periodontal tissues decreased: the Schiller-Pisarev test was negative in 8 (66.67.0%) patients, the Fedorov-Volodkin's hygienic index was 1.67 ± 0.3 (decrease by 65.87%), the PMA index $24.3 \pm 0.4\%$ (decrease by 92.18%). The level of vascular resistance of the gums was increased to 17.7 ± 1.5 seconds.

Thus, in both groups of examined patients with acute generalized periodontitis, significant improvement was observed in the roots of hygiene of the oral cavity, reducing the level of inflammation in the periodontal tissues. The result obtained can be considered as a consequence of the use of the proposed medical preparation of patients to compensate for the state of the sympathetic vegetative nervous system in the case of acute course of generalized periodontitis.

The evaluation of treatment outcomes in patients with chronic generalized periodontitis revealed improvement in the periodontal condition in most patients. In particular, the Schiller-Pisarev test was positive in all patients, after treatment it was negative in 23 (92.0%)

patients. The level of hygiene of the oral cavity improved: the hygienic index for Fedorov-Volodkin decreased from 2.85 ± 0.35 to 1.22 ± 0.15 (a decrease by 53.2%). The decrease in the level of inflammation in the gums was attributed to the index of PMA from $48,7 \pm 0,75\%$ to $21,8 \pm 0,45\%$ (decrease by 55,3%). The obtained data testify to the improvement of the state of periodontal tissues in this category of patients.

Improvement of the state of periodontal tissues confirmed the performance of functional tests. The stability of the blood vessels of the gum was elevated: the vacuated hematoma was formed on average by 23.5 ± 2.5 s (before treatment 12.6 ± 1.5 s, improvement by 86.51%).

The conducted research revealed improvement of periodontal condition in 24 (96.0%) patients. Only one patient needed further medical treatment.

In the control group (2B), the improvement of the state of periodontal tissues was noted in 10 (83.3%) of the examined patients. In order to achieve the stabilization of the dystrophic-inflammatory process in the periodontal tissues, patients in this group needed about 6.4 visits to the dentist, which is more than that of the patients in the main group. The Schiller-Pisarev test was positive in 83.3% of patients, the Fedorov-Volodkin's hygienic index was 1.33 ± 0.3 , the PMA index was $24.3 \pm 0.4\%$ (decrease by 50.1%). The level of vascular gum resistance increased - vacuum hematoma was formed in 17.5 sec. (Improvement by 38.89%).

Discussion. The conducted research testifies to the positive influence of the proposed scheme of medication therapy. Clinical examination of patients with acute and chronic course of generalized periodontitis of the main group with a predominance of the sympathetic vegetative nervous system after a comprehensive treatment showed a significant reduction in inflammation in periodontal tissues.

Conclusions. Thus, the proposed scheme of medical treatment and the inclusion in the complex therapy of the proposed medical preparation can achieve significant effectiveness of treatment of patients with generalized periodontitis in patients with predominance of the sympathetic nervous system.

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