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DYNAMICS OF MARKERS OF BONE RESORPTION IN ORAL FLUID IN PATIENTS WITH GENERALIZED PARODONTITIS DURING TREATMENT

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The topicality of this study is due to the considerable prevalence of periodontal diseases, which is 20-50% of the total world population[1]. It is known that the most indicative of the inflammatory-destructive process in the periodontal tissues is an X-ray examination, there sults of which can be demonstrated to stabilize the pathological process as a result of treatment. However, to conclude about the state of alveolar bone is only possible in six months after treatment, which makes it impossible to monitor in its process for the purpose of correction. In this regard, the necessary task is the search for new non-invasive and informative methods of diagnosis, which may include biochemical examination of oral fluid[2]. It is proved that the main cause of inflammation in periodontal tissues is the microbial factor, namely, qualitative and quantitative changes in the microflora of the oral cavity, in particular the activation of parodontopathogenic microorganisms[3]. At the same time, inflammation causes the destruction of the connective tissue of the periodontal complex, characterized by collagen and proteoglycan metabolism disorders, and, consequently, resorption of bone[4]. In this case, the development of inflammatory process in the periodontal tissues leads to increased secretion of proinflammatory cytokines such as interleukin-1a, -1β, -6, tumor necrosis factor-a. Neutrophils produce a large number of enzymes and inflammatory mediators. An increase in their concentration in saliva is a diagnostic sign of inflammatory processes in oral cavity. Therefore, in the search for diagnostic criteria, special attention should be paid to increasing the concentration of collagenases, which include matrix metalloproteinases. They should be considered key in describing the periodontal status, since type I collagen is in the vast majority in the extracellular matrix of the periodontal tissues. Among them matrix metalloproteinase-8 (MMP-8) is the main one in periodontitis, because 90-95% of collagenolytic activity falls on it[5]. All of the above has allowed us to formulate the purpose of the investigation as the study of the level of MMP-8 in oral fluid in patients with generalized periodontitis in the dynamics of the treatment.

Materials and Methods. 30 patients aged 37 - 45 years were included into the study. 15 of patients were diagnosed generalized periodontitis of the I degree of severity, 15 – the II degree of severity. As a control, indicators from a group of 8 persons with intact periodontal tissues, selected similarly for the gender and age characteristics of the observation group, were used. To assess the periodontal condition, a traditional clinical examination, supplemented by the results of an X-ray study, was used.All patients with generalized periodontitis received comprehensive treatment[3]. The content of MMP-8 in the oral fluid was studied using the immune enzyme method (BCM Diagnostics, DMP800, Total MMP8). The research was conducted before and immediately after treatment.The data of the conducted clinical and laboratory studies were to be processed using the «STATISTICA® for Windows 6.0» (StatSoft Inc., № AXXR712D833214FAN5).

Results. As a result of the conducted biochemical studies, it was proved an increase in the level of MMP-8 in the oral fluid in patients with generalized periodontitis (0.4 ± 0.1 ng / ml under the I degree of severity, 0.7 ± 0.2 ng / ml – under the II degree against 0.1 ± 0.03 ng / ml of control, $p < 0.05$). At the same time, after a complex treatment, the level of this indicator decreased to 0.2 ± 0.07 ng / ml under the I degree of severity and to 0.5 ± 0.1 ng / ml – under the II degree ($p < 0,05$). However, it should be noted that the results obtained after the course of treatment outweighed the control ($p > 0.05$), which, in our opinion, suggests only about inhibition of the pathological process, rather than its complete elimination. Thus, according to the results of the studies, we found that the level of MMP-8 in the

oral fluid increases in comparison with the control values in accordance with the severity of the pathological process in the periodontal tissues. The treatment of generalized periodontitis causes to a decrease in the MMP-8 in oral fluid.

Prospects for further research. The obtained values of the concentration of MMP-8 in the oral fluid, as well as their dynamics, proved that this marker is indicative of the course of the inflammatory-destructive process in periodontal tissues, and therefore the possibility of its application for the diagnosis and monitoring of the results of treatment of generalized periodontitis.

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RESULTS OF COMPLEX TREATMENT OF WAGOTONIA IN PATIENTS WITH CHRONIC COURSE OF GENERALIZED PERIODONTITIS

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Treatment of patients with generalized periodontitis depend on the peculiarities of the course and clinical picture. The presence of general somatic diseases has a significant effect on the clinical picture of generalized periodontitis. Without regarding these peculiarities, periodontal disease has an adverse course and resistance to treatment. The autonomic nervous system has an integrative role. Therefore, in the treatment of this type of disease it is necessary to take into account the state of the autonomic nervous system of patients.

Materials and Methods. Complex treatment of generalized periodontitis was performed in a group of 60 patients aged 25-45 years old with a chronic course of generalized periodontitis of the 1st and 2nd degree and prevalence of parasympathetic nervous system. 40 patients made up the main group. There was developed a scheme of medication therapy for their treatment. Evaluation of the state of their autonomic nervous system was carried out by determining the Kerdo index. The comparison group consisted of 20 patients with generalized periodontitis, who were treated by a complex treatment similar to the patients in the main subgroup of treatment, but without drug preparation.

Patients with the chronic course of generalized periodontitis and prevalence of parasympathetic autonomic nervous system were prescribed the following medications before each visit:

1. «Anaprilin» 0,01 g - 1 tablet 2 times a day;
2. Tincture of valerian - 0.25 drops 3 times a day.

During the three days after a dental intervention, they were given:

1. "Ibuprofen" 0.2 g - 2 tablets 3 times a day;
2. Tincture of valerian - 0.25 drops 3 times a day;
3. "Anaprilin" 0,01 g - 1 tablet 4 times a day.

All patients were provided with professional oral hygiene, complete elimination of all periodontal tissue irritants, complete removal of dental deposits with the treatment of surfaces of the teeth roots. Clinical examination of patients was carried out according to the traditional scheme.

Results. The course of treatment for patients with generalized periodontitis of the 1st degree of the main group was 6,05 visits and 9,18 visits for the comparison group. To achieve the stabilization of the pathological process in patients with generalized periodontitis of the 2nd degree it was necessary to make 8.46 visits for patients in the main group and 10.2 visits for patients in the comparison group. The complex treatment has led to a reduction of gums bleeding (PBI index). In patients of the main group it has decreased from 2.81 ± 0.19 to 0.71 ± 0.02 points and in patients of the comparison group - from 2.38 ± 0, 22 to 0.89 ± 0.02 points. The state of the whole complex of periodontal tissues at the stages of treatment is indicated by changes in the periodontal index (PI). In general, the PI index in patients of the main group decreased by 68.3% from 2.49 ± 0.3 to 0.71 ± 0.07 points, and in the comparison group - by 67.78% from 2.52 ± 0.48 to 0,89 ± 0,07 points. After the course of treatment, the state of the oral cavity hygiene has improved: the hygiene index ONI-S in patients of the main group has decreased from 1,59 ± 0,09 to 0,79 ± 0,06. After the treatment of patients with generalized periodontitis with predominance of parasympathetic