periodontitis, while in the group with chronic periodontitis, the expression of MMP-14 was significantly higher (p = 0.0027). MMP-13 expression was characterized with MMP-13 absence in the epithelium of the gums but localization in the cells of the stroma, presumably in the macrophages and fibroblasts cells. When comparing groups with fast-progressive and chronic complex periodontitis no any statistically significant differences in MMP-13 expression in the gingival stroma were detected.

Prospects of the further researches. Despite the fact the level of MMP-13 did not change significantly in the tissues of patients with different forms of periodontitis in our study there is undoubtedly an increasing of the MMP-13 expression while inflammation of the periodontium is determined and MMP-13 enzyme participation in the activation cascade of metalloproteinases since it is known that expression of that enzyme is absent in the normal gingival tissue. Nevertheless, rapidly progressive periodontitis is characterized by a lower expression of MMP-14 in comparison with the chronic form of the periodontal disease. Thus, immunohistochemical staining with antibodies to MMP-14 can be used in dental practice as an additional method for diagnosing and predicting the course of periodontitis in the early stages of the disease. Further research of the MMP-7, -8, and -9 enzymes expression in the periodontal tissues as a potential marker of the course of the periodontal diseases might be very interesting for the diagnostic criteria of the different forms of periodontitis evaluation.

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PROGNOSIS OF PERI-IMPLANTITIS IN PATIENTS BASED ON BIOCHEMICAL PARAMETERS OF SALIVATE

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Study of objective measures of bone metabolism, bone regeneration reflecting the course when it is damaged, and the possibility of using them to control healing process, the timely detection of complications remain an actual problem of modern medicine [4]. At the moment, the study of oral fluid, the development of diagnostic and prognostic tests based on the study of its qualitative and quantitative indicators are one of the promising areas in medicine, in dentistry and maxillofacial surgery [1,2,3]. The aim of the study was to determine the most informative indicators of the development of peri-implantitis and the reversibility of the inflammatory process in dental implantation on the basis of saliva enzymes.

Material and Methods. In the early postoperative period (3-30 days) at the stage of clinical observation there were 37 patients who had inflammatory processes in the area of dental implants after surgery. Patients were divided into groups to assess the severity of peri-implantitis, the presence of implant mobility and the severity of the inflammatory process in the tissues surrounding the implant. The first group included 12 patients with stable implants, clinically determined minor soreness, mucosal hyperemia in the area of the implant, preserved the integrity of the gingival sulcus, the value of the peri-implantitis index was reliably 1.1 (0-1.4) points. Treatment of patients of the 1st group included oral hygiene control, correction of antibacterial therapy. The second group included 12 patients who clinically determined hyperemia and bleeding of the mucous membrane in the area of the implant, when probing there was a pathological pocket, the implants were stable, the values of the peri-implantitis index were reliably 8.0 (6.0-9.0) points. Treatment of patients of the second group, with the stability of the implant, but with severe inflammation in the tissues surrounding the implant, pathological pocket, included oral hygiene control, correction of antibiotic therapy with genetic resistance. Surgical treatment was carried out, including curettage of granulation tissue and filling of bone defect in the implant area with bone graft material. In 13 patients of the third group, where there was mobility of the implant, clinically determined hyperemia and bleeding of the mucous membrane in the implant area, when probing there was a pathological pocket with purulent discharge, the value of the peri-implantitis index was reliably 10.0 (9.1-10.0) points. Treatment of patients of the third group, with the mobility of the implant and with severe inflammation in the tissues surrounding the implant, the presence of a pathological pocket, was to control oral hygiene, curettage using bone graft materials. However, despite the treatment and ongoing antibiotic therapy, after 30 days the inflammatory process was not stopped, the implants remained mobile and were removed.

Results. In the first group of patients, where all the implants were osseointegrated, the level of acid phosphatase prior to treatment had a value 29.0 (27.9-29.7) U/l after treatment for 30 days significantly declined and accounted for 19.1 (18.6–19.9) U/l, the level of alkaline phosphatase before treatment had a value of 19.8 (19.4 to 20.7 per) U/l after treatment for 30 days significantly increased and amounted to 28.2 (25.1-29.7) U/l. In the second group, implants were disintegrated in 3 patients (25%), the level of acid phosphatase of before treatment was 33.3 (32.3–34.6) U/l, after treatment on day 30 significantly decreased and amounted to 25.1 (22.7-27.4) U/l, the level before treatment was 21.6 (20.4-22.7) U/l, after treatment on day 30 significantly increased and amounted to 29.3 (28.1-30.7) U/l. In the third group the implants were disintegrated, the level of acid phosphatase prior to treatment had a value 39.08 (35.7 was 41.2) U/l after treatment for 30 days had no significant differences with the figure to conduct anti-inflammatory treatment 38.04 (34.8-38.7) U/l. The level of alkaline phosphatase before treatment had a value of 24.0 (23.8-24.7) U/l after treatment for 30 days had no significant differences with the figure to conduct anti-inflammatory treatment 24.2 (24.1-24.7) U/l.
Conclusion. A favorable prognosis of inflammatory phenomena in the area of the implant is observed in dynamics with a decrease in the level of acid phosphatase and an increase in the level of alkaline phosphatase. Multidirectional values of enzymes are a favorable sign of the reversibility of the inflammatory process.

Unfavorable prognosis of inflammatory phenomena in the area of the implant is observed, if the dynamics of the level of activity of acid phosphatase is constantly high values, the level of alkaline phosphatase in the dynamics remains unchanged.

Prospects for further research. The mechanism of imbalance of the processes of resorption and regeneration depends on which process is currently leading, increasing resorption or reducing bone regeneration. To predict the results of treatment and relief of inflammation is important to develop a comparative monitoring of the activity bone metabolism enzymes.

References:


Key words: peri-implantitis, laboratory diagnostics, acid phosphatase, alkaline phosphatase

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