

Results of the research. The following results were obtained. Performing the "BOFSAS" subjective-objective test proved that most dentures were of good quality, only one correction when installing the denture was required to complete adaptation, and only two dentures needed two or three corrections. Patients' adaptation time to new dentures averaged 18.00 ± 0.35 days.

Electromyographic examinations of the masticatory muscles were performed in patients both prior to treatment and following one month, six months and a year of denture use.

The level of the excitatory processes in the masticatory muscles is quite high and ranges up to 641.58 ± 10.01 μ V with volitional compression of the jaws in the control group. A similar correlation between the frequency and the amplitude of biocurrents is observed when performing a random chewing sample. The analysis of temporal indices of electromyograms did not reveal a significant difference in the length of the individual phases of activity and rest. It is evidenced by the numerical value of the "K" coefficient, which is close to one in people with intact dentitions.

The compression amplitude decreased to 130 ± 6.5 μ V in voluntary compression and to 250 ± 10.7 μ V in random chewing in patients before using new dentures (with old dentures). It differs significantly from normal. The value of the "K" coefficient has doubled and amounted to 2.44 ± 0.09 . It is worth noting that its value should be as close as possible to one.

The compression amplitude increased to 293 ± 10.9 μ V during voluntary compression and to 314 ± 19.3 μ V during random chewing after one month of denture use. The value of the "K" coefficient decreased to 1.29 ± 0.02 (normally it should be as close as possible to one).

The compression amplitude compared to the same indicator before the prosthetics has improved and is 515 ± 6.2 μ V in voluntary compression and 490 ± 11.6 μ V in random chewing in patients who used dentures for 6 months. The "K" coefficient decreases slightly and is 1.18 ± 0.03 .

The amplitude of volitional compression is 605 ± 11.4 μ V, which is close to normal after 1 year of using the dentures. The amplitude of chewing is also close to normal and is 585 ± 9.1 μ V. The value of the "K" coefficient decreased significantly compared to the results obtained before using and were 1.12 ± 0.04 .

The following data were obtained after evaluating the effectiveness of masticatory function restoration using a masticatory sample: the weight of the residue was 0.05-0.08 g. The time that patients wasted on chewing the nut in 1 month after they received dentures is 28.15 ± 0.38 sec., 25.55 ± 0.51 sec. after 6 months of denture use, and 20.82 ± 0.75 sec after 1 year.

Conclusion. We can say that the use of "Deflex Acrylato" basic thermoplastic material allows to achieve better fixation and stabilization of complete removable dentures. It is subjectively confirmed by the "BOFSAS" test, and objectively by electromyographic data and indicators of masticatory efficiency recovery using I.S. Rubynov's method. Based on this, we can conclude that the adaptation to such dentures takes place in a short time and does not need any corrections.

Matvieienko L.M., Matvieienko R.Y.

THE RESULTS OF STUDYING MINERAL DENSITY AND COMPOSITION OF RATS' MANDIBLES IN EXPERIMENTAL MODELS OF GENERALIZED PERIODONTITIS

Dnipro State Medical University, Dnipro, Ukraine

The most severe and difficult to treat symptoms of generalized periodontitis associated with diabetes mellitus are changes in bone tissue. Specific osteotropic therapy in the complex treatment of the disease aims to normalize the "bone resorption – bone formation" balance. Strontium is promising for increasing osteogenic activity.

The aim of the research was to conduct a comparative study of the mineral density and chemical composition of the mandibular bone tissue in rats in the modeling of generalized periodontitis, which develops in the setting of metabolic disorders in type 2 diabetes mellitus, and after additional use of strontium ranelate.

Materials and methods. The study was carried out on 24 white male Wistar rats weighing 230-250 g, divided into three groups of 8 (streptozocin and nicotinamide were administered in group I; additionally, penicillamine and strontium ranelate were given in group II and III respectively) and 6 intact rats as a control. The bone mineral density of the rats' mandibles was studied using computer tomography method. The content of chemical elements in the bone samples was determined using the method of atomic emission spectrometry with inductively coupled plasma.

Results. According to computer tomography data, the average values of the mineral density in the control group are 1450.0 ± 125.0 HU, in group I – 1320.0 ± 120.0 HU ($p > 0.05$), in group II – 1100.0 ± 110.0 HU ($p < 0.05$), in group III – 1400.0 ± 137.0 HU ($p > 0.05$). Thus, the most pronounced decrease in mineral density is observed with the combined use of nicotinamide, streptozotocin and penicillamine, while strontium ranelate helps to normalize this indicator. According to atomic emission spectrometry, the mineralization index, that is, the ratio of calcium to phosphorus, was 1.14 in the control group, 1.05 – in group I, 1.0 – in group II and 1.26 – in group III. The strontium content in the samples of group III were almost twice as high as the control values ($p < 0.001$) and significantly lower than in the samples of groups I and II ($p < 0.05$). An increase in the strontium content led to a decrease in the content of other elements, which is explained by the competitive substitution in apatite crystals.

Conclusion. The applied experimental models indicate the development of osteoporotic changes in periodontitis associated with diabetes mellitus. The use of strontium ranelate consistently slows down the processes of bone mineral density's loss and contributes to an increase in the calcium to phosphorus ratio and strontium content, which indicates the activation of the bone component of the periodontium remineralization.

Mytchenok M.P.

IMMUNOLOGIC STATUS OF THE ORAL FLUID DURING SURGICAL SANITATION OF THE ORAL CAVITY IN DIABETES MELLITUS PATIENTS

Bukovinian State Medical University, Chernivtsi, Ukraine

Aim: to study the dynamics of immunologic indices of the oral fluid during surgical sanitation of the oral cavity in patients with diabetes mellitus.

Materials and methods. We examined 57 patients with type 2 diabetes with sub-compensated and decompensated forms of the disease and 25 clinically healthy patients. They were divided into four groups. The first group was the control one; the second group included 12 individuals with sub-compensated and 11 with decompensated forms having just experienced tooth extraction; the third group included 12 individuals with sub-compensated and 11 with decompensated forms whose oral cavity was irrigated with lysomuroid; the fourth group included 11 individuals with decompensated forms who were administered the combination of lysomuroid and tymalin before and during sanitation.

Results. The examination results of patients from the 2nd group with sub-compensated form of the disease before sanitation revealed 1,2 times lower lysozyme activity of the oral fluid compared to the control group, and with decompensated form it was twice as low. Correlating results were found before sanitation in the third and fourth groups.

The level of SIgA in the oral cavity of patients from the 2nd group with sub-compensated form was 1,5 times lower, and in those with decompensated form was 2,7 times lower compared with that of the control. Comparison of the indices in the second and third groups with sub-compensated and decompensated forms found this index to be 1,8 times lower in patients with decompensated form.

The indices of bactericidal lysozyme activity and SIgA level did not change after surgical sanitation performed using classical method.

The activity of lysozyme in the oral fluid of patients from the third clinical group was found to increase on the third day after preliminary oral irrigation by means of lysomuroid. SIgA level did not change compared to the index before treatment.

When the surgical sanitation of patients from the third group was completed, lysozyme activity was found to increase consistently: by 1,2 times in patients with sub-compensated form, and by 1,4 times in patients with decompensated form. SIgA level increased by 1,2 and 1,3 times respectively.

In patients from the fourth group, bactericidal activity of lysozyme increased by 1,4 times, and SIgA level increased by 1,3 times following the combined administration of lysomuroid and tymalin for 3 days. When surgical sanitation was completed, lysozyme activity was 1,7 times higher and SIgA level was 1,6 times higher compared to the indices before treatment.

Conclusion. Therefore, the bactericidal activity of lysozyme and SIgA level in the oral fluid decrease in diabetes mellitus patients with dental surgical pathology. Introducing lysomuroid and tymalin into a complex of preventive measures is found to promote increase of these immune indices, and thus lowering the probability of inflammatory processes occurrence in the oral cavity.

Romaniuk D.G.

PREVALENCE AND INTENSITY OF DENTAL CARIES OF PREGNANT WOMEN IN DIFFERENT TRIMESTERS OF PREGNANCY

Bukovinian State Medical University, Chernivtsi, Ukraine

A functional restructuring of all organs and systems occurs in a woman's body during pregnancy. Adaptive changes occur in the nervous, endocrine, cardiovascular and other systems of the body and also in the oral cavity. Although preventive methods and remedies are widely used in dental practice, the prevalence of dental diseases in pregnant women remains high. Studies of many authors show that pregnancy increases the risk of new dental diseases or exacerbation of existing diseases, especially lesions of hard dental tissues and periodontal tissues. According to WHO, the prevalence of dental caries among pregnant women is 2.9 times more frequent than among women that are not pregnant and the inflammatory process of periodontal tissues is 2.2 times more frequent in pregnant women.