

APPLICATION OF OSTEOPLASTIC COMPOSITIONS IN MANDIBULAR ENDOPROSTHETICS

Abdullayev Sh. Yu.

Doctor of Medicine, Professor

Head of the Department of Diseases of the maxillofacial region and traumatology

Tashkent State Institute of Dentistry

Muratova N.Yu.

Candidate of medical sciences, associate professor of maxillofacial region diseases and traumatology
department

Tashkent State Dental Institute

Abstract. The use of materials corresponding to the composition and structure of human bone is seen today as the most promising direction in restorative medicine. The biocompatibility of the implanted material is correlated to this composition. Modification of the endoprosthesis surface by means of bioactive coatings is considered to be one of the promising directions for the creation of complex materials, possessing not only the properties of the passive matrix for the newly formed bone, but also certain strength characteristics.

Keywords: osteoplastic composition, CONMET LLC, surgical treatment, mandible

The aim of the study was to increase the effectiveness of surgical treatment of mandibular bone defects using combined osteoplastic material based on hydroxyapatite and collagen.

Material and methods: The study was based on the analysis of the treatment results of 75 patients with mandibular defects who were treated in hospital.

Among the operated patients there were 42 (56%) male and 33 (44%) female patients. The age of the patients ranged from 25 to 58 years.

In the first group of patients (32 cases), a CONMET LLC titanium implant was placed during reconstruction. In patients of the second group (23 patients) hydroxyapatite powder was applied on the surface of the implant by laser sintering according to the method. In the third group of patients (20 patients), in addition to laser sintering of hydroxyapatite, collagen (Healos J&J) was applied on the implant surface by CONMET LLC.

Research results and discussion: All patients were evaluated for cellular and humoral immunity. The cellular component of immunity, which is responsible for transplantation immunity, is of great importance in implantation. Investigating the T-cell component of immunity, the number of T-lymphocytes, T-suppressors, T-helpers and immunoregulatory index of Tx/Tc ratio were calculated.

Preoperative immunoregulatory T-lymphocyte subpopulation analysis revealed a slightly reduced T-helper and T-suppressor count relative to healthy controls, but the difference was not significant ($P < 0.05$).

Studies of B-lymphocyte functional activity by serum levels of immunoglobulins G, A and M before the operation showed no significant differences from the healthy subjects. Analysis of group data also showed no significant difference in preoperative IgG, IgA and IgM levels. Mean preoperative immunoglobulin levels as well as individual immunoglobulin levels did not differ significantly from the control group.

X-ray examination 6 months after surgery showed homogeneous tissue in the defect area in group 1 and group 2, whereas in group 3, a trabecular structure was present. All patients underwent X-ray densitometry after surgery as well as after 1, 3, 6 and 12 months. X-ray densitometry was used to determine bone mineral density by determining the surface bone mineral density. According to the WHO (1994) guidelines, a T-criterion of -

1.0 to 1.4 g/cm² was considered normal. The maximum positive dynamics of the index was observed in the group III after 12 months on the bone-implant border - $0,98 \pm 0,4^*$ ($p < 0,01$).

The implant with bio-coating is covered by dense bone tissue, micro-movements and tensions at the bone-implant interface are prevented.

As the result we can conclude that the application of hydroxyapatite to the titanium implant surface by the laser sintering method contributes to the optimization of the restoration of the structural and functional characteristics of the bone.

Thus, it seems possible to conclude that the use of endoprostheses with a layer of hydroxyapatite leads to more rapid formation and maturation of bone tissue, which allows us to recommend its use in clinical practice.

Literature:

1. Azimov M. I., Shomurodov K.E. A technique for Cleft Palate Repair. Journal of research in health science. Vol. 1, No. 2, 2018, pp. 56-59.
2. Abakumova MA Evaluation of the dental status and the structure of the lesion of the oral mucosa in patients with chronic gastritis at the hospital stage of treatment [Text] /M.A. Abakumova, A.K. Konyshva // In the collection: Youth and medical science in the XXI century. Proceedings of XVIII All-Russian Scientific Conference of Students and Young Scientists with international participation. Ed. by I.V. Sheshunov, N.K. Mazina, Yu.V. Kislitsin. - 2017.- C.280-281.
3. Alekberova G.I. Biochemical aspects of the pathogenesis of non-carious dental lesions in patients with chronic renal failure [Text]/ G.I. Alekberova, I.A. Pushkin // In the collection: "Biochemical scientific reading in memory of Academician RAS E.A. Stroev" materials of the All-Russian scientific-practical conference of students and young specialists with international participation. - 2016. - C. 62-66.
4. Aminjanova Z.R. Clinical and situational analysis of diagnosis and treatment of dental pathology in some somatic diseases [Text]: diss... D. in Medicine / Z.R. Aminjanova, Tajik Institute for Postgraduate Medical Training of the Ministry of Health of the Republic of Tajikistan. - Dushanbe, 2015. - 131 c.
5. Khamdamov B.Z. Indicators of immunocytocine status in purulent-necrotic lesions of the lower extremities in patients with diabetes mellitus.//American Journal of Medicine and Medical Sciences, 2020 10(7) 473-478 DOI: 10.5923/j.ajmm.2020.- 1007.08 10.
6. M. I. Kamalova, N.K.Khaidarov, Sh.E.Islamov, Pathomorphological Features of hemorrhagic brain strokes, Journal of Biomedicine and Practice 2020, Special issue, pp. 101-105
7. Kamalova Malika Ilkhomovna, Islamov Shavkat Eriyigitovich, Khaidarov Nodir Kadyrovich. Morphological Features Of Microvascular Tissue Of The Brain At Hemorrhagic Stroke. The American Journal of Medical Sciences and Pharmaceutical Research, 2020. 2(10), 53-59
8. Khodjiev D. T., Khaydarova D. K., Khaydarov N. K. Complex evaluation of clinical and instrumental data for justification of optive treatment activites in patients with resistant forms of epilepsy. American Journal of Research. USA. № 11-12, 2018. C.186-193.
9. 9.Khodjiev D. T., Khaydarova D. K. Clinical and neuroph clinical and neurophysiological ch ogical characteristics of teristics of post-insular cognitive disorders and issues of therapy optimization. Central Asian Journal of Pediatrics. Dec.2019. P 82-86