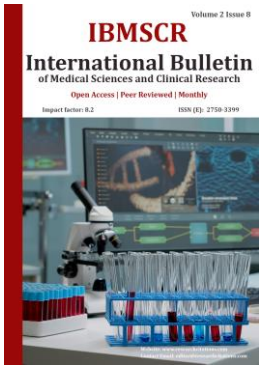

INFLUENCE OF PARTIAL LOSS OF TEETH ON TASTE PERCEPTION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Annotation: Background The annual increase of the number of patients with diabetes mellitus type 2 (DM2) requires the development of individual approaches in orthopedic dental rehabilitation of such patients. The most informative data are obtained during the treatment of patients with diabetes with different dentures particular removable with acrylic base. They allow consider the impact of missing teeth on the condition of the organs of the oral cavity, to evaluate their relationship and the efficacy of the treatment.

Keywords: the secretion of salivary glands, taste sensitivity of the tongue, diabetes type.

Objectives The study of the dynamics of changes in taste sensitivity of the tongue and salivary glands of patients with DM2 during orthopedic rehabilitation with removable laminar dentures. Methods It was held a clinical examination and prosthetic treatment of 73 patients with partial adentia 1 and 2 classes according to Kennedy at the of age 51 to 68 years with removable acrylic dentures with klammern fixation. The first group were 36 patients with diabetes mellitus type 2 and blood glucose levels of 9.4-1.2 mmol/l, the second group were 37 patients without somatic pathology. In the follow-up period it was determined taste sensitivity of the tongue and salivary secretion glands. The obtained data were statistically processed using the programme Statistica 6.0. Results Partial absence of teeth in patients with type 2 diabetes have reduced secretion of the salivary glands and taste sensitivity of the tongue to a greater extent on the sweet stimulus. During orthopedic rehabilitation it was observed an increase in salivation and stabilization at a new level of DM2 patients after 50-60 days, of healthy patients, 20-30 days. It was noted the positive dynamics of changes of taste sensitivity on sweet, less salty and slightly sour stimuli Conclusions Orthopedic treatment with removable laminar dentures of patients with type 2 diabetes increases the secretion of the salivary glands and changes the threshold of taste perception of sweet in the direction of decreasing concentration, which has a positive effect on the general condition of the patients. It is known that the content of glucose in the blood plays a significant role in the activity of the taste analyzer - the food humoral factor, which is the leading component of the food biological need, which determines the formation of the food motivational state. The state of glucose homeostasis is a criterion for assessing health and is confirmed by the study of taste perception in practically healthy people with intravenous administration of glucose. The loss of taste sensation significantly reduces the quality of life and worsens the general and social state of human health. Numerous studies of taste disorders in patients with diabetes mellitus have established that their decrease is associated with a change in innervation and a decrease in the number of taste buds of the tongue, impaired autoregulation of cerebral blood flow, and initial manifestations of autonomic diabetic neuropathy. It has been established that a violation of taste perception is in a correlative relationship with the severity of the disease

and blood sugar levels. The correct perception of taste sensations is possible only with a normally moistened oral mucosa. Many authors testify to a decrease in the volume of mixed saliva in diabetic patients and consider hyposalivation to be characteristic of this disease. Despite numerous studies of the dental status of patients with type 2 diabetes mellitus (DM2), no relationship has been found between taste disturbance, salivary gland secretion, and the state of the dentition.

In orthopedic dental rehabilitation during the period of adaptation to removable dentures, an analysis of complaints made by patients showed that patients with DM2 (57.7%) and patients in the comparison group (34.7%) more often complained of pain under the basis of a removable denture. In addition, patients with type 2 diabetes noted difficulty in using the prosthesis due to dryness in the oral cavity, burning and soreness of the mucous membrane (26.3%). The number of corrections per 1 prosthesis carried out during the first month of use in patients with DM2 was 5.1 and 2.3 in healthy people. At the end of the indicated period of observation, the indicators of the background secretion of the salivary glands (Table 2) changed upwards in all examined by 2 times ($p<0.01$) and stimulated - by 1.5 times ($p<0.05$). At the same time, in patients with diabetes, they remained below the indicators of the comparison group ($p<0.05$), but in both groups they aspired to the indicators of patients with preserved dentition.

Conclusions: Thus, as a result of the research, it was found that in patients with type 2 diabetes with loss of teeth, there is a pronounced decrease in the taste sensitivity of the tongue, to a greater extent to a sweet stimulus than salty and sour, and a slight decrease in patients without somatic pathology to all types of stimuli. The effect of dentition defects on the inhibition of the function of the salivary glands was confirmed by a 2-fold decrease in background secretion in patients of both observation groups compared with the indices of patients with preserved dentition. Orthopedic rehabilitation of DM2 patients with partial removable lamellar dentures had a positive effect on the taste sensitivity of the tongue by changing the threshold of taste perception of sweet towards a decrease in concentration, while the concentration of sweet stimulus solutions, to which DM2 patients reacted, exceeded 3 times, salty - 2.5 times and acid - 2 times the concentration of solutions, which responded to healthy patients with no defects in the dentition. Increased secretion of the salivary glands in all respondents was observed from the first days of using the prostheses, stabilization of secretion at a new level in patients with diabetes was observed by the 50-60th day of using the prostheses, while in healthy patients - by the 20-30th day.

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