GROUNDING OF PREVENTION AND TREATMENT OF SIALOSIS AT PATIENTS WITH HYPOTHYROIDISM

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Simulation of hypothyroidism in terms of experiment on rats with help of long-term introduction of high doses of Mercazolil resulted in a 3.3-times increase in the organ index of the thyroid gland and a simultaneous 1.4-times decrease in the organ index of the salivary glands, which indicated the development of hypotrophic processes in the salivary glands of animals affected by hypothyroidism model.

Application of the complex of vitamins, enzymes, saliva flow stimulants in combination with local action on the oral cavity of rats had certain positive effect on the organ index of the studied glands of animals, what was confirmed by a 33.3% decrease in the organ index of the thyroid gland and a 23.2% increase in the organ index of salivary glands after the complex treatment.

Based on the results of a complete examination of 203 patients with hypothyroidism, the initial stage of sialosis was found in 22 patients, clinically apparent stage was found in 156 persons and advanced stage was found in 25 patients. Insignificant painfulness in the areas of salivary glands disturbed 35 patients and other patients did not note sense of discomfort or pain in this area.

Patients with hypothyroidism were mostly disturbed by constant dryness of the mouth (63.0%), and 35% of patients had periodic xerostomia during long conversation or emotional excitement, as well as during eating. Some patients complained about dry mouth after their salivary glands increased, and 17 persons noted that they had to wake up at night to drink water and in the morning it was difficult for them to open their lips and mouth. Periodic increase of parotid glands among examined patients with hypothyroidism was noted in 145 patients in the clinically apparent stage of sialosis, which was 92.9%. More

than 10% of the examined patients were concerned that two symmetrical lumps, painless during palpation, became visible in the submandibular areas when the head was throwing backward.

During clinical examination all patients with hypothyroidism were divided according to stage of sialosis: stage of clinical manifestation of sialosis - 137 persons, early stage of sialosis (hypersecretion stage) - 26 persons, advanced stage (lipomatosis and fibrosis stage) - 40 persons.

During longitudinal scanning in patients with the early stage of sialosis, the parotid and submandibular salivary glands were located symmetrically relative to each other and visualized as incorrect ovals with clear contours and were surrounded by a well-traced hypoechogenic capsule on the sonogram. The echogenicity of the glands was slightly increased in comparison with the group of practically healthy people. The excretory ducts were visualized as strands, and the glands were of a round shape with a size of 21.17 ± 1.06 mm during diametrical scanning. During scanning of the submandibular salivary glands it was revealed their medium echogenicity with a fine-grained echostructure and anteroposterior size of 26.43 ± 1.33 mm and upper-lower size of 22.63 ± 1.14 mm, what meant early pathological changes.

In patients with clinical manifestations of sialosis, parotid and submandibular salivary glands were located symmetrically and during scanning of parotid glands it was revealed moderate parenchyma non-homogeneity with multiple areas of increased echogenicity with indistinct contours. The sizes of the glands were increased in comparison with healthy people (anteroposterior – 55.85 ± 2.95 mm, lateral – 24.45 ± 1.23 mm). The shape of the parotid glands during longitudinal scanning is an incorrect oval, and during transverse scanning it is rounded. Echogenicity of submandibular salivary glands corresponded to the structure of glands of healthy people.

Parotid salivary glands in the group of patients with advanced stage of sialosis affected by hypothyroidism were localized symmetrically, visualized as incorrect oval with clear contours and surrounded by hypoechogenic capsule

during longitudinal scanning, and had rounded shape and clear borders when scanned transversely. Echogenicity of the glands is medium, echostructure is heterogeneous, fine-grained. The sizes of the parotid glands were significantly increased in the transverse scan in comparison with the group of healthy people (longitudinal size 60.54 ± 3.03 mm, transverse size 27.08 ± 1.36 mm). Scanning of submandibular salivary glands of patients with the advanced stage of sialosis revealed moderate non-homogeneity of parenchyma, there were multiple areas of increased echogenicity with indistinct contours. The transverse size of the glands was significantly increased in comparison with the group of healthy people - 26.73 ± 1.34 mm (size < 0.05), and the longitudinal size was 28.32 ± 1.42 mm.

We carried out stomatological examination and further treatment of 203 patients with sialosis affected by hypothyroidism in the age from 25 to 75 years old. Painless swelling in the parotid-mandibular areas, dry mouth, as well as periodical burning in the dorsum of the tongue, lips, and cheeks, insignificant pain in the salivary gland areas, and decrement of hearing acuity and discomfort in the ears were the leading complaints of the patients with sialosis affected by hypothyroidism. The abovementioned subjective manifestations were confirmed by objective data that was found during stomatological examination.

It was determined that in all groups of patients with sialosis affected by hypothyroidism, the phenomenon of hyposalivation was found, as the initial average value of salivation volume in the groups was 0.87 ± 0.04 ml.

During using only pilocarpine solution and dental elixir with lysozyme and ovomucoid in the comparison group, the salivation volume increased by 1.4 times, but three months after treatment, the numerical values of the studied index started to decrease and did not differ significantly from the initial level of salivation.

In the first subgroup of the main group, where treatment was carried out with usage of bioregulator, proteolytic enzymes, vitamin complex as general therapy and

carbacholine solution as local therapy, the volume of salivary gland secretion increased more than 2-times and was 2.1 ± 0.11 ml.

During treatment of patients from the second subgroup of the main group with additional use of ultraphonophoresis with propolis oil, the studied index increased 3.6-times and was 2.9 ± 0.15 ml. Quantitative indices of salivation in both subgroups of the main group of patients differed from the initial values and results of the comparison group throughout the whole study period and were 2.5 ± 0.13 ml - in the first subgroup and 3.3 ± 0.17 ml - in the second subgroup of the main group of patients.

The average value of oral fluid viscosity in the beginning of the study was 2.57 ± 0.13 Pa•s. We determined that the most effective reduction of the viscosity of oral fluid by 1.5 times was observed after the application of the therapeutic and preventive complex, which included bioregulator, proteolytic enzymes, vitamin complex and carbacholine solution and ultraphonophoresis with propolis oil.

During sialosis affected by hypothyroidism, crystallization processes in the oral fluid change. At the beginning of the study we found absence of the first type of oral fluid microcrystallization in patients of all groups with sialosis affected by hypothyroidism.

The data on the number of patients with the first type of oral fluid microcrystallization after three and six months of observation (48 and 46 persons) in the second subgroup of the main group certifies the long-term effective effect of the developed method of sialosis treatment with the application of bioregulator, proteolytic enzymes, vitamin complex, carbacholine solution and ultraphonophoresis with propolis oil.

The results of determining the activity of α-amylase in oral fluid before stimulation of secretion showed its decrease (100 ± 5.13 - 108 ± 5.52 units/ l) in all groups of patients with sialosis affected by hypothyroidism, what certifies the suppression of secretory function of salivary glands. Stimulation of salivation in the

comparison group resulted to an incontinuous increase of α-amylase activity. However, in both subgroups of the main group of patients after using the developed methods of treatment, α-amylase activity was significantly increased in comparison with both the initial level and the results of the comparison group and was 186 ± 9.37 units/ l and 250 ± 12.54 units/ l, respectively.

The study of alkaline phosphatase activity in the oral fluid of patients with sialosis affected by hypothyroidism determined its increased level both in the main group and in the comparison group (0.34 ± 0.017 - 0.35 ± 0.017 μcat/L). Treatment of sialosis affected by hypothyroidism in the main group of patients who used the developed therapeutic and preventive measures led to decrease in the activity of alkaline phosphatase in oral fluid in 2.3 times, remaining definitely consistently low (0.14 ± 0.010 μkat/ l after 6 months) to the end of observation.

We found that all patients with sialosis affected by hypothyroidism had an increased concentration of total protein in the oral fluid at the beginning of the study. The nature of changes in the content of total protein in the oral fluid in patients of both subgroups of the main group was positive and in a month after the application of the developed therapeutic and preventive measures, the numerical values of the studied index were even lower and were 1.32 ± 0.07 g/ l in the first subgroup of the main group and 1.25 ± 0.07 g/ l in the second subgroup.

Performed by us studies, oriented to study of the catalase activity in the oral fluid of the examined patients, determined its low initial level (from 0.14 ± 0.007 to 0.17 ± 0.009 μkat/ L). In patients from the second subgroup of the main group who applied, except that therapeutic and preventive measures, procedures of ultraphonophoresis with propolis oil on the oral mucous coat in the areas of the excretory ducts of the major salivary glands, catalase activity increased in 2 times after one week of observation, and at the end of the study exceeded the initial data by 1.5 times.

In the course of the presented study, we studied factors of local immunity by the level of lysozyme and sIgA in the oral fluid of patients with sialosis affected by hypothyroidism in the dynamics of treatment. The data obtained showed a low initial level of lysozyme and sIgA in oral fluid in patients with sialosis affected by hypothyroidism. The use of hygienic products promoted a short-term increase of the indices of local immunity in the oral cavity of all patients in the comparison group, where already in a month the level of lysozyme increased by 21.5%, and the content of sIgA increased by 15.4%, what can be explained by the anti-inflammatory effect of the used oral rinse. A more significant and stable increase in lysozyme activity and sIgA level were determined in the oral fluid of patients from the second subgroup of the main group, where the numerical values of the indices that were studied increased by 1.6 - 2.6.

Analysis of the data showed a decreased level of functional activity of buccal cells in comparison with the norm in all the studied groups of patients with sialosis affected by hypothyroidism. The complexes of therapeutic and prophylactic measures developed by us in patients of all observation groups initiated nuclear nucleoplasmic ratio in cells, intensifying metabolic processes. In the patients of the first subgroup of the main group, the number of mobile buccal cells nuclei increased by 19%, and the highest percentage of mobile buccal cells nuclei was found in the patients of the second subgroup of the main group - 32%. The highest level of amplitudes of displacement of both nuclei and plasmodium buccal cells, and thus their ratio, was determined in patients of the main group: in the first subgroup by 44.3% and 20%, and in the second subgroup by 62.6% and 25.8%, respectively.