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Condition of Oral Cavity Tissues in Patients with Liver and Biliary Tract Diseases

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Abstract: Disruption of the functioning of various body systems has a significant impact on the morphofunctional state of the oral organs and, in particular, the periodontal complex. This effect is primarily due to significant metabolic disorders, systemic or local hemodynamic disorders, changes in the neuro-humoral regulation of the immunological status. Among the diseases that directly affect the liver, taking toxic and medicinal drugs, improper and inadequate nutrition [1.3.5].

Keywords: Cavity Tissues, Biliary Tract Diseases.

There is a close relationship between liver function and bone tissue, including the alveolar bone. With chronic hepatitis and cirrhosis, systemic osteoporosis occurs, which is called "hepatic rickets" or "osteomalacia". Atrophy of the alveolar bone increases in patients with chronic liver damage [2.4.6].

Thus, with hepatitis, a variety of changes develop in the oral cavity. However, in the literature available to us, we have not found works where purposefully, consistently and in-depth changes in the organs and tissues of the oral cavity, especially the hard tissues of the teeth in patients with diseases of the hepatobiliary system, have been studied and systematized.

The purpose of the study. To study the condition of oral tissues in patients with pathology of the hepatobiliary system.

Material and methods of research. Clinical studies were conducted on the basis of the BUKHGOSMI Hepatology Clinic for the period from 2020 to 2022. 58 patients with diseases of the hepatobiliary system aged 25 to 60 years were examined. The average age of patients was 46.7+1.45 years.

The clinical examination included the collection of analyzes, complaints, clarification of possible causes of the disease, the nature of its course and frequency of exacerbations, the effectiveness of previous treatment.

During the examination, special attention was paid to the hygienic condition of the oral cavity, the presence of carious teeth, dentures and dissimilar metals.

Examinations of patients included gender, age, characteristics of the underlying disease, frequency and duration of relapses, evaluated therapeutic and preventive measures offered to patients for the treatment of the disease.

All patients were divided into 2 groups: group 1 – 28 patients without pathology of the hepatobiliary system, group 2 – 30 patients with pathologies of the hepatobiliary system.

Statistical data processing was carried out on a personal computer using a standard Microsoft Excel application software package. The average values were calculated by the method of variational

statistics. The reliability of intergroup differences was assessed using the Student's unpaired t-test. Differences in indicators were considered significant at P<0.05.

Results and their discussion. In a group of patients with diseases of the hepatobiliary system (GBS), a visual assessment of the skin of the face, the mucous membrane of the mouth, tongue, periodontal tissues was performed.

External examination revealed no pathology of soft tissues and disorders in the bone structures of the face in both subgroups. Regional lymph nodes are not enlarged, they are painless. The skin is clean without pathological elements.

When examining the oral mucosa, attention was paid to the architectonics, color, moisture content, the presence of pathological elements (ulcers, erosions, crusts, cracks). The data is presented in Fig.

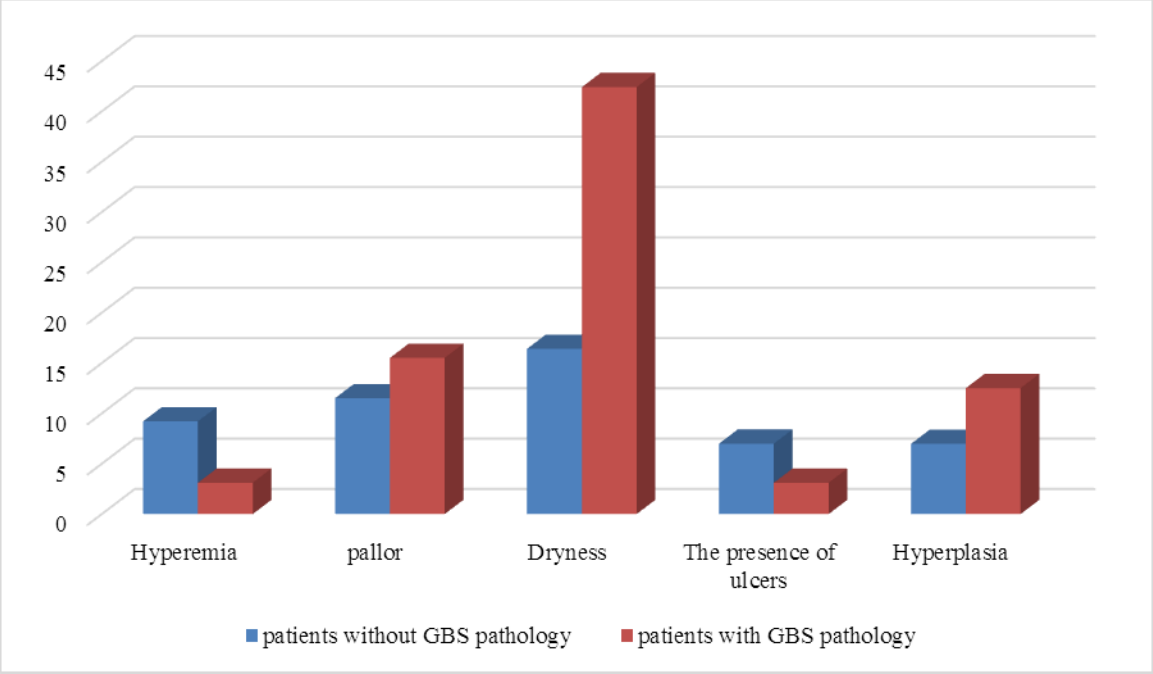

Fig.1. The state of the oral mucosa in patients with GBS pathology (%)

According to the data obtained, patients of group I had pale-colored oral mucosa in 11.6% of cases, while patients with comorbidity and polymorbidity had 15.5%. Hyperemia of COP was observed in patients of group I in 9.3% of cases, in patients of group II - in 3.09%. In patients of group II, dryness of the oral mucosa was found in 42.3%, hyperplasia of the oral mucosa - in 12.4%, while in patients of group I, dryness of the oral mucosa -16.3%, hyperplasia of the oral mucosa - 6.98% of cases. In patients of group I, ulcers and erosion of the SOPR were diagnosed in 6.97% of cases, which is more pronounced than in patients of group II (3.09%).

Particular attention was paid to the state of the language of patients with GBS pathology. They were evaluated by diagnostic signs characteristic of GBS diseases - the color of the tongue, the presence of plaque on the back of the tongue, the condition of the tongue surface, size (Fig.2).

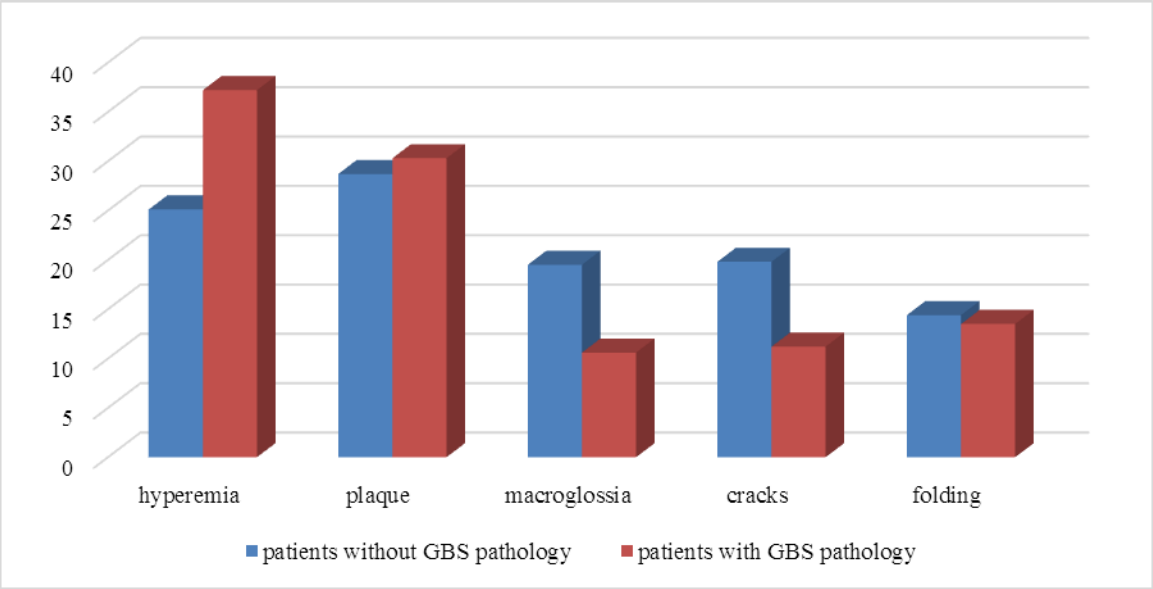

Fig.2. the state of the mucous membrane of the tongue in patients with GBS pathology (%)

Hyperemia of the tongue (37.2%) and plaque on the back of the tongue (white) (30.2%) prevailed in patients of group I, whereas in patients of group II, tongue hyperemia was observed in 24.8% and plaque on the back of the tongue -27.8%. In patients of group II, cracks of the tongue prevailed - 19.6%, an increase in the size of the tongue-19.6% and a folded tongue-14.4%.

To assess the condition of the marginal periodontal, the presence of tartar, plaque, and the condition of the gingival papillae were detected (Fig.3).

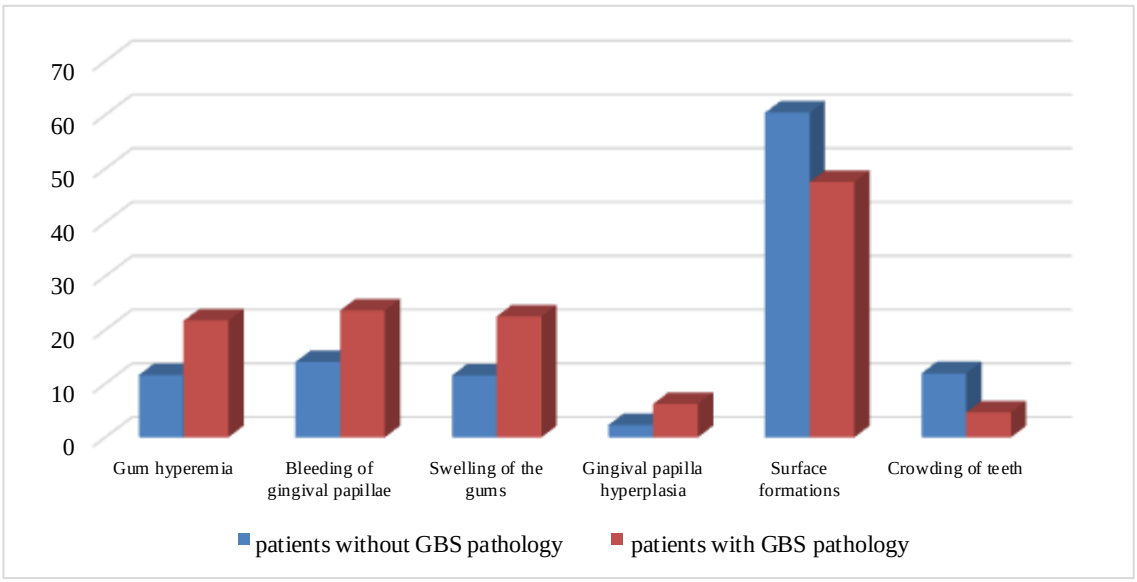

Fig.3. the state of the marginal periodontal disease in patients with GBS pathology (%)

In patients of group I, the presence of superficial formations on the teeth (60.5%) and crowding of teeth (11.6%) prevailed in the oral cavity. In patients of group II, hyperemia (21.7%), bleeding (23.7%), gingival edema (22.7%) and gingival papilla hyperplasia (6.2%) were more pronounced in periodontal tissues, which indicates a significant lesion of the marginal periodontal against the background of a polymorbid condition.

When examining the oral cavity of patients with GBS pathology, the degree of damage to the hard tissues of the teeth was assessed, the frequency of occurrence of carious and non–carious lesions (wedge-shaped defects, enamel erosion, pathological erasability - according to the WHO classification, 1999) was studied. The data are presented in Figures 4 and 5. The number 28 was taken as the unit of calculation of natural teeth, the third molars were not taken into account.

According to the data obtained, 745 intact teeth were preserved in patients of group I, which amounted to 17.3 teeth per person; in patients of group II - 1421 intact teeth, which amounted to 14.6 teeth per person. The total number of teeth with hard tissue lesions in group I patients is 313 teeth (42%), in group II patients - 600 teeth with hard tissue lesions (42.2%). In patients of group I, 10 people (23.3%) had no defects in the hard tissues of the teeth, and in group II, this number increased to 27 people (27.8%).

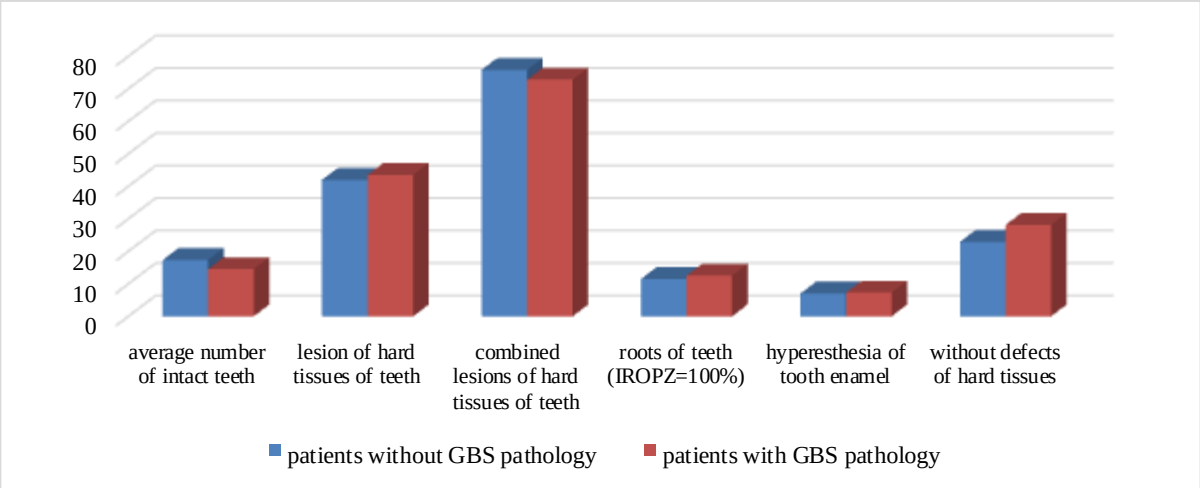

Fig.4. The number of intact teeth and teeth with defects in patients with GBS pathology (%)

In patients of group II, dental caries was most common - 50 teeth (6.71%), wedge-shaped defects - 49 teeth (6.58%) (Fig.5).

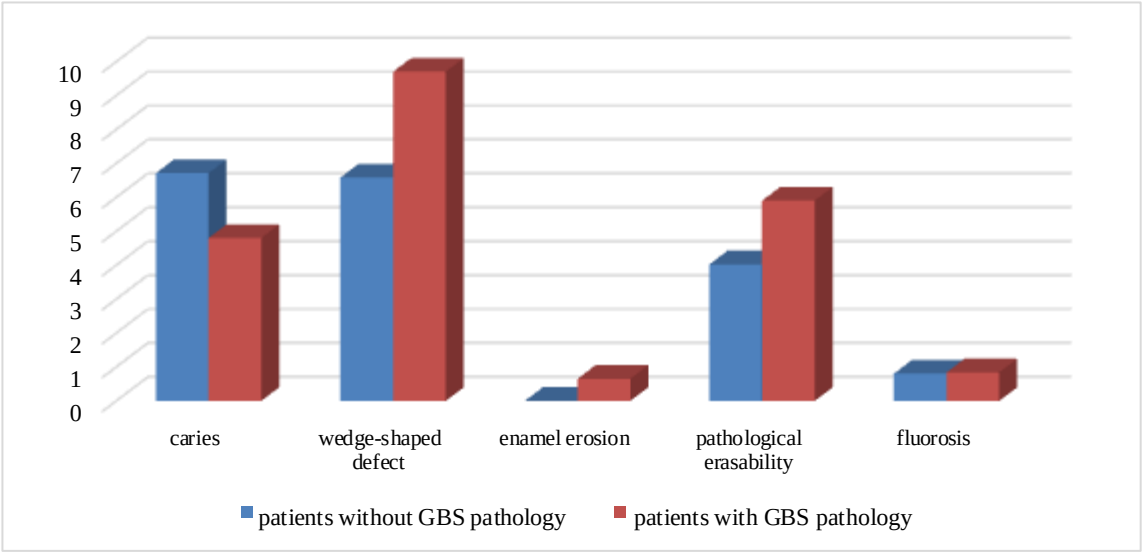

Fig.5. Prevalence of dental hard tissue lesions in patients with GBS pathology (%)

In patients of group II, the predominance of wedge-shaped defects -138 teeth (9.71%) and pathological erasability - 84 teeth (5.91%) was revealed. Special attention was paid to the quantitative characteristics of the number of teeth with non-carious lesions. The results are presented in table 2.

Table 2 Prevalence of non-carious dental lesions in examined patients with GBS pathology

Groups of patients	The number of affected teeth on average per patient			KES index, points
	Wedge-shaped defect	Enamel erosion	Pathological erasability	
Patients without GBS pathology (group 1)	3,77±0,84	0	6,0±0,02	0,33
Patients with GBS pathology (group 2)	3,54±0,44	3,1±0,54**	7,62±0,85*	0,43

Note: differences between subgroups are significant at **p<0.001; *p<0.05

According to the data obtained, the number of wedge-shaped defects per person in patients of the I-th subgroup was 3.77+0.84 teeth, and in the group of patients of the II-th group this figure was unreliably (p>0.5) lower (3.54+0.44 teeth).

Enamel erosion was diagnosed only in patients of group II, which amounted to 3.1=0.54 teeth per person. Pathological erasability prevailed more significantly (p<0.05) in group II patients - 7.62±0.85 teeth versus 6.0±0.02 teeth in group I patients.

To assess the prevalence of non-carious lesions of the hard tissues of the teeth, the KES index was used. The CES index in patients of group I is 0.33, and in patients of group II - 0.43, which corresponds to a low intensity of non-carious lesions in the group of patients with GBS diseases.

To determine the intensity of the carious process in patients with GBS pathology, the CPU index was used. The results are presented in table 3.

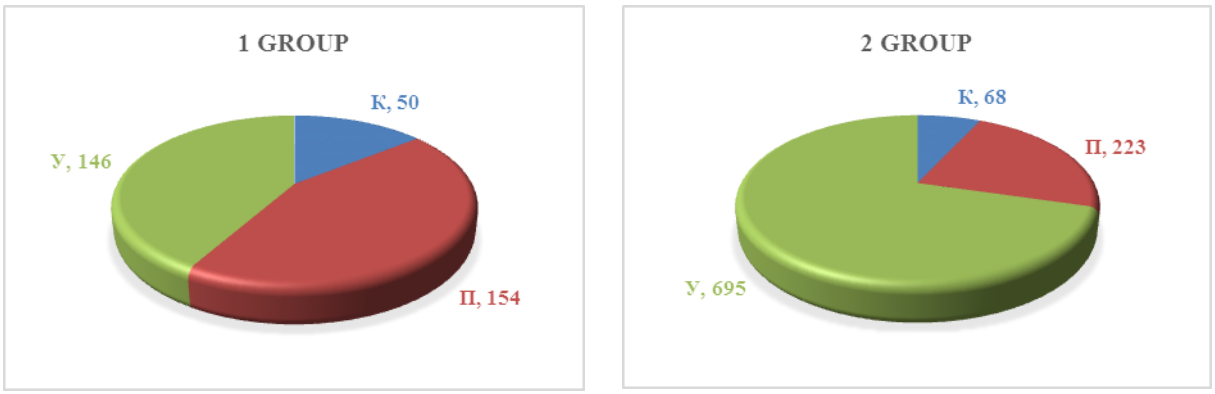

Fig.6. Indicators of the CPI index in examined patients with GBS pathology

It was found that the prevalence of dental caries in group 1 patients was 23.5%. The CPI index in patients of group I is equal to 8.13±1.92, which corresponds to the average level of caries intensity;

as much as possible due to the filled teeth and removed teeth in general. The number of filled teeth ranged from 1 to 12; an average of 3.58 teeth per person. The number of removed teeth was slightly lower than the filled ones; it ranged from 1 to 28 teeth, which amounted to an average of 3.39 teeth per person. The number of teeth damaged by caries in this subgroup was the lowest and equaled 50, ranged from 1 to 13 teeth, which was defined on average as 1.16 teeth.

In patients of group II, the prevalence of dental caries reached 50%. The value of the CPI index was 10.2 ±2.03, which corresponds to the average level of caries intensity; maximally due to removed teeth and fillings in general. The number of removed teeth in this group prevailed over the filled ones by 3 times, over the carious ones by 10 times. On average, the number of removed teeth per person was 7.16 and ranged from 1 to 28. The number of filled teeth ranged from 1 to 15 and on average reached 2.30 teeth per person. The number of teeth with carious process was 0.7 on average and ranged from 1 to 13. The number of intact teeth in the two groups of patients with GBS pathology differed by 1.9 times and amounted to 17.3/14.7 teeth per person, respectively.

Thus, in the pathology of the hepatobiliary system, a variety of changes develop in the oral cavity, which need to be purposefully, consistently and in-depth study and systematize changes in the organs and tissues of the oral cavity, especially the hard tissues of the teeth in patients with diseases of the hepatobiliary system.

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