

INFLUENCE OF HYPERPARATHYROIDISM ON CHANGES IN DENTAL INDICES

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Abstract: According to epidemiologic studies conducted by American scientists in Western Europe and North America, thyroid pathologies are the third most common endocrine diseases after diabetes and thyroid pathology [13]. The prevalence of the disease is 1% in the general population, up to 2% of people of any age, most often over 55 years of age, and the frequency of occurrence between men and women is 1:3. Most often, this disease occurs in women during menopause, the peak of development corresponds to the first ten years after the onset of menopause. Annual incidence is 0.4 to 18.8 per 10,000 people, depending on what was detected during dispensary registration [6-12], and in Europe and North America, the frequency of manifest forms of the disease did not exceed 20% by 2004 [15].

As a result of studying the literature, it became clear that currently there is no single understanding of the etiopathogenesis of the development of carious and non-carious dental diseases, and they are a polyetiological disease associated with complex physical and chemical processes. It is necessary to identify the possible risk factors of caries and non-carious diseases for patients suffering from any type of oral cavity diseases, to eliminate them later, to develop methods of preventing their development and to apply measures that are important for treatment.

Due to the fact that calcium provides the process of transmitting impulses through nerve cells, participates in the contraction of muscle tissue, promotes the activation of a number of enzymes, is one of the components of the blood coagulation system, forms the basis of bone tissue, maintaining calcium balance is extremely necessary for the normal functioning of individuals.

Key words: caries and non-carious diseases, oral cavity, menopause, tonsils.

Introduction. The most studied endogenous cause of the development of such pathologies is a violation of calcium metabolism, which is associated with malfunctions in the function of the endocrine glands and the excretory ability of the kidneys. However, studies on the role of primary and secondary dysfunction of the parathyroid glands in the structure of the development of carious and non-carious dental diseases are not enough, and require a special approach to diagnosis and therapy. As can be seen, in the development of structural changes in the teeth, the level of calcium in the blood is of great importance, which is controlled by parathyroid hormone and thyroid calcitonin, dysfunction and imbalance of which can cause irreversible, severe consequences for the body.

Similar consequences can be carious and non-carious diseases of the teeth. Dental caries, which is a multifactorial disease, has many etiological factors, and is one of the frequent reasons why people visit the dentist, which is accompanied by damage to hard tissues due to progressive demineralization and

destruction of calcified dental tissues by acids produced from food sugars by plaque bacteria in places of its long retention and begins with the destruction of enamel.

For the correct diagnosis and choice of therapy for the disease, the patient's anamnesis was carefully collected, and regardless of the complaints (with an analysis of the cause and time of occurrence of the pain syndrome; localization, nature, duration, concentration; causing it) and the identified dental and clinical symptoms, the dentition was examined. And facial area.

The purpose of the study is to study the relationship between hyperparathyroidism and changes in dental indices.

Research materials and methods this scientific work is based on our own clinical observations conducted from 2012 to 2021. Only 88 patients who applied for oral cavity sanitation were subjected to dental and somatic examination. The work is based on the results of a clinical, laboratory, and instrumental study of patients in the endocrinological dispensary of the Bukhara region.

The inclusion criteria for the study were: consent of the patients to participate in the ongoing study (the essence of the study was previously discussed with the patients); absence of hereditary defects of the maxillofacial region.

The exclusion criteria for the study were: patients with severe somatic diseases; patients with mental disorders; hereditary diseases of the musculoskeletal system; patients at the age of extreme old age; refusal to be included in the study.

Research results. For the objectivity and reliability of the results obtained, all 88 patients examined were divided into 2 groups: group 1 consisted of 30 (34.1%) patients with various dental diseases without parathyroid pathology, considered as a comparison group; group 2 consisted of 58 (65.9%) of patients with carious and non-carious dental diseases, considered as the main patient suffering from hyperparathyroidism

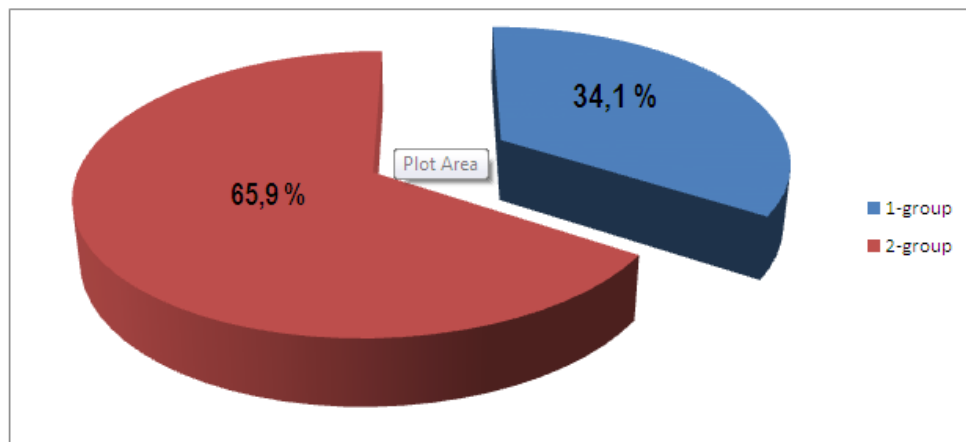


Fig.1 Distribution of patients by groups

The age of patients ranged from 19 to 60 years, the distribution of patients by age and sex is shown in tables 1. In the comparative group, there was no significant difference between the number of women and men, while the number of patients with carious teeth without a hyperparathyroidism clinic under the age of 40 years (83.3%) was 5 times more than patients older than 40 years (16.6%) ($P < 0.0001$).

Table 1 Distribution of patients by age and sex (main group)

Patients/Gender	Age, years										Total	
	up to 20		21-30		31-40		41-50		older 50			
	abs	%	abs	%	abs	%	abs	%	abs	%	abs	%
Men	1	1,7	3	5,2	4	6,9	7	12,1	7	12,1	22	37,9
Women	3	5,1	5	8,6	6	10,4	10	17,2	12	20,7	36	62,1
Total	4	6,9	8	13,8	10	17,2	17	29,3	19	32,8	58	100

In the main group after 40 years, the number of carious and non-carious diseases of the teeth increased (62.1%) by 1.6 times, compared with patients under 40 years of age (37.9%), without a significant difference. The number of women and men had almost the same difference, i.e. regardless of age and gender differences, in the presence of hyperparathyroidism, carious and non-carious dental diseases increase, while with age, these pathological conditions progress faster in women, compared with patients who do not have parathyroid gland pathology.

Dental examination was carried out according to standard methods, taking into account WHO recommendations. Dental examination consisted of a clinical examination of the oral cavity with the calculation of indices reflecting its condition. The following indices were defined: simplified Green-Vermillion oral hygiene index, periodontal index, PMA index, Muhlemann bleeding index, periodontal pocket depth (mm)

Table 2.

The state of the oral cavity according to index estimates

Group of patients	1- group (n=30)	2- group (n=58)		
		general index	primary hyperparathyroidism	secondary hyperparathyroidism
Periodontal index (PI)	3,2 ± m	3,9 ± m	3,9 ± m	4,0 ± m
PBI (Muhlemann)	2,2 ± m	2,9 ± m	2,86 ± m	2,67 ± m
index PMA (%)	26,8 ± m	38,9± m	38,6 ± m	41,0 ± m
Green-Vermillion	2,38 ± m	2,31 ± m	2,31 ± m	2,35 ± m

Index (OHI-S)				
Depth of periodontal pocket (mm)	3,4 ± m	4,0 ± m	3,9 ± m	4,2 ± m

According to the data of this study, in the comparative group, the average score of the PI index was $3.2 \pm m$, which corresponded to gingivitis without damage to the attached epithelium, where the clinical pocket was not yet determined. In the main group of patients, the average score was $3.9 \pm m$, while in patients with primary hyperparathyroidism it was $3.9 \pm m$ points, and in patients with secondary hyperparathyroidism - $4.0 \pm m$ points, they observed the disappearance of the closing cortical plates on the tops of the alveolar process, according to X-ray analysis, however, the appearance of signs of a clinical pocket was determined.

In the comparison group, the average degree of gingival bleeding index was $2.2 \pm m$, there was light bleeding along the edge of the papilla of a linear nature. In the main group, the Muhlemann bleeding index averaged $2.9 \pm m$ degrees, while in patients with primary hyperparathyroidism it averaged $2.86 \pm m$ degrees, with a secondary form of the disease $2.67 \pm m$ degrees. In the main group of patients, a moderate filling of the interdental triangle with blood was noted, meanwhile, 10 (17.1%) patients with primary hyperparathyroidism suffered from degree 4 bleeding according to the Muhlemann method, which was not detected in secondary hyperparathyroidism. Thus, in the comparison group 1, the degree of inflammation in the gums was equal to an average of $26.8 \pm m\%$, which corresponded to the average degree of gingivitis, while in the main, group 2 patients it was $38.9 \pm m\%$, which also corresponded to , as in the 1st group of moderate gingivitis, however, there was a more pronounced process of gingival inflammation in the presence of hyperparathyroidism, with a significant difference between them in $P < 0.05$. So, in the comparative group OHI-S was equal to an average of $2.38 \pm m$, in the main group $2.31 \pm m$, while in patients with primary hyperparathyroidism these values were $2.31 \pm m$, in patients with a secondary form of the disease it was $2.35 \pm m$, while there was practically no significant difference between the OHI-S indices in the comparative and main groups.

Conclusions. The analysis of the index state of the teeth reveals the clinical essence of the state of dental health of patients, and the results obtained once again prove a more severe clinical course of the pathology of the teeth in the presence of hyperparathyroidism, an example of which was the proven severity of the course of gingivitis, periodontitis with the formation of a periodontal pocket, tooth mobility, the depth of the clinical pocket, bleeding gums, less stable enamel caries resistance and its mineralizing potential, which were significantly more pronounced in primary hyperparathyroidism.

The above proves that timely diagnosis, study of the consequences and complications of such conditions, including in regions with environmentally unfavorable conditions, as well as timely and adequate therapeutic measures for patients with dysfunction of the parathyroid glands, is one of the priority tasks of healthcare in the Republic of Uzbekistan.

References

1. James B., J. William Robbins, Richard S. Schwartz. "Fundamentals of Operative Dentistry: A Contemporary Approach." —J. Cont. Dent. Pract., Summit, 2 edit. —Illinois, Quintessence Publishing Co, Inc., 2001. ISBN 0-86715-382-2.
2. Kramer E. «Grundlagen der Zahngesundheitsvorsorge». —Prophylaxefibel, Deutscher Ärzteverlag, 2004, ISBN 3934280668. —s. 69.
3. Lussi A. «Dental erosion: from diagnosis to therapy». —Monogr. Oral Sci. Basel, Karger, 2006, Vol. 20. — p. 219 — ISBN 9783805580977

4. Pace F, Pallotta S, Tonini M, Vakil N, Bianchi Porro G. «Systematic review: gastro-oesophageal reflux disease and dental lesions». — *Aliment. Pharmacol. Ther.*, 27, 2008. — 1179–1186p.
5. Ali DA, Brown RS, Rodriguez LO, Moody EL, Nasr MF. «Dental erosion caused by silent gastroesophageal reflux disease». — *J. Am. Dent. Assoc.*, 2002, Vol.133, № 6, —734–737p.
6. Solovyova-Savoyarova G.E., Silin A.V., Drozhzhina V.A. Non-carious lesions of the teeth in women as a manifestation of osteopenia and osteoporosis. Conference materials. XVIII International Conference of Maxillofacial Surgeons and Dentists "New Technologies in Dentistry". - St. Petersburg: Ministry of Health and Social. Development of the Russian Federation, 2013. - 152-153 p.
7. Nicopoulou-Karayianni K. et al. Tooth loss and osteoporosis: the OSTEODENT Study //Journal of clinical periodontology. – 2009. – T. 36. – №. 3. – С. 190-197.
8. Rees JS, Hammadeh M, Jagger DC. «Abfraction lesion formation in maxillary incisors, canines and premolars: A finite element study». — *Eur. J. Oral. Sci.*, 2003, Vol. 111, p.149-154
9. Solovyova-Savoyarova G.E., Drozhzhina V.A., Silin A.V. Non-carious lesions of teeth, etiopathogenetic approach to their reconstruction Materials of the IX scientific and practical conference “Modern methods of diagnosis, treatment and prevention of dental diseases. Endodontics and restorations. - St. Petersburg: SPbINSTOM, 2012. - S. 55-59. — 121 p. - ISBN 978-5-88711-329-6.
10. Фёдоров Ю.А., Туманова С.А., Леонова Е.В., Рубежова Н.В., Киброцашвили И.А., Абрамова Н.Е. «Повышенная чувствительность зубов. Клиническая картина, диагностика и лечение».— СПб.: СПбМАПО, 2010.— 56 с.
11. Navruzova L.Kh. Changes in the microarchitectonics of hard tissues of the tooth caries in patients with hyperfunction of the parathyroid glands. *A new day in medicine.* - 2022. - No. 4 (42) - S. - 174-177.
12. Navruzova L.Kh. Studying the structure of teeth in caries by electronic microscopi in hiperparathyroisis. *Globalization, the State and the Individual. Indexed: Copernicus Value (ICV-70.09), CEJSH.*Globalization.- 2022.-No 1(29)/ -С.-142-147.