

Prevalence and Development Factors of Increased Tooth Abrasion in Residents of Kaspiysk

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ABSTRACT

Background: Loss of hard tissues is diverse in its localization and can manifest itself in the area of one, several or all of the patient's teeth, one of the most serious consequences of this pathology is a decrease in the height of the lower third of the face.

Materials and Methods: The paper presents the results of a comprehensive dental examination and survey data of 98 patients. During the study, patients were divided by age groups, gender characteristics, pathological disorders and depending on the plane of erasure (horizontal, vertical, mixed) teeth. The prevalence and factors of the development of increased abrasion of hard tissues of teeth were determined.

Conclusion: Local exogenous and general endogenous factors turned out to be a more frequent cause of increased tooth abrasion for residents of the city of Kaspiysk.

Keywords: Tooth wear, Prevalence, Hyperesthesia, Increased abrasion of teeth.

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INTRODUCTION

According to literary sources, from 15 to 50% of the world's population suffer from pathological tooth erasability¹⁻⁴. The process of loss of hard tissues is diverse in its localization and can manifest itself in the area of one, several or all of the patient's teeth, one of the most serious consequences of this pathology is a decrease in the height of the lower third of the face, therefore many specialists in the field of dentistry are interested in solving this problem^{5,6}. During the process of pathological tooth erasure, demineralization of the hard tissues of the tooth is revealed, as their resistance to the effects of cariogenic factors decreases⁷⁻¹⁰. There is an intense loss of hard tissues and increased sensitivity of teeth with exposed dentin areas¹¹.

The problem of pathological erasability is relevant, since the consequences can be irreversible - the deformation of the jaw begins, there are violations of the masticatory muscles and the condition of the pulp, which leads to complete destruction or loss of the tooth, or the entire dentition¹²⁻¹⁵. Knowledge of the prevalence of increased erasure of hard tissues of teeth, features of the course, etiological factors will help to choose the optimal method of treatment, prevention, which will ensure the most effective and long-term success of treatment, as well as the minimum likelihood of complications¹⁶⁻¹⁹.

The purpose of this study was to determine the prevalence, factors of the development of increased erasure of hard tissues of teeth among the population living in the city of Kaspiysk.

MATERIALS AND METHODS

To fulfill this task, we examined 98 people aged 17-64 years at the Altera dental clinic in Kaspiysk. An individual approach and a comprehensive examination were used for each patient. The visu-

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al examination included an assessment of the proportions of the face, a study of the condition of the hard tissues and oral mucosa; palpation of the soft tissues of the oral cavity to identify their pathology; examination, palpation and listening were subject to the temporomandibular joint, jaw muscles.

A survey of patients was conducted on the main risk factors associated with this disease, the determination of all complaints and the collection of anamnesis, clarifying the circumstances on the following issues: whether there are pains and hypersensitivity; whether there are aesthetic changes; whether there are functional changes. We also determined the type of Bushanerasability (horizontal, vertical, mixed), its combination with hypersensitivity.

RESULTS AND DISCUSSION

The survey showed that 68% of the surveyed people brush their teeth regularly and, as a rule, once a day. Almost all of the examined change the toothbrush rarely - once a year, use different toothpastes. The nutritional characteristics of the residents of Kaspiysk were not particularly diverse. Many respondents pointed to the habit of gnawing nuts, seeds, bones, frequent use of citrus fruits and carbonated drinks. Production hazards were noted by 42 people, taking medications - 56. All the examined patients had common diseases, and it was not possible to identify any specifics

Table 1: Prevalence of increased tooth abrasion among the population of the city of Kaspiysk

Group	Age, years	Number of examined	Number of detected with erasability	Prevalence in % by group
I	17-24	18	2	11
II	25-34	18	7	38.8
III	35-44	18	11	61.1
IV	45-54	21	17	81
V	55-64	23	19	82.6
Total		98	56	57,2%

Table 2: Prevalence of tooth erasure by gender

Group	Prevalence by gender				
	The number of examined with pathological erasability	Men		Women	
		Quantity	%	Quantity	%
I	2	2	100	-	-
II	7	4	57	3	43
III	11	6	55	5	45
IV	17	10	59	7	41
V	19	11	58	8	42
Total	56	33	59 %	23	41%

Table 3: Prevalence of pathological disorders

Group	Age, years	Number of examined	Hyperesthesia		TMJ diseases		Direct bite	
			Quantity	%	Quantity	%	Колич.	%
I	17-24	2	-		-	-		
II	25-34	7	-		-	-		
III	35-44	11	4	36.4	2	18	4	36.4
IV	45-54	17	8	47	8	47	13	76.5
V	55-64	19	10	52.6	12	63	15	79
Total		56	22	39.3%	22	39.3%	32	57.2%

for this pathology of the hard tissues of the teeth.

Of the total number of examined 98 people - 56 people had pathological tooth erasure, which was 57.2%. In the first (I-24) age group, 2 (11%) examined with pathological erasability were identified; in the second (II) group, 7 (38.8%) and 11 (61.1%) were in the third (III) age group. The highest percentage of erasability occurred in age groups: IV (45-54) - 81% and V (55-64) - 82.6% (Table 1).

The gender difference is expressed in favor of the indicator for men and was 33 (59%) and 23 (41%) for women (Table 2).

39.3% of 57.2% of people with increased tooth erasure had dental hyperesthesia. Analysis of clinical research methods showed that the majority of patients in the group had complaints under the action of tactile (32.1%) stimuli, temperature (19%), tactile and temperature (38.12%). The appearance of sensitivity under the action of stimuli with pathological erasability indicates the exposure of dentine tubules, the protective reaction of the pulp, which are compensatory mechanisms.

The examined patients had widespread dysfunction of pathological TMJ disorders (39.3%). 32 (57.2%) of the examined patients had a direct bite and a higher level of abrasion of the front teeth of the upper jaw was observed (Table 3).

After analyzing the results obtained, it can be concluded that the erasure of the hard tissues of the tooth most often occurs gradually, due to contact with antagonists or under the influence of mechanical stimuli, as well as when eating. The main causes of pathological erasability according to the results of the survey are local exogenous (lack of sanitation of the oral cavity, irrational prosthetics, lack of prosthetics; frequent use of citrus fruits, carbonated drinks, juices, acids of which led to the demineralization of enamel; the habit of gnawing nuts, seeds, bones) and general endogenous (diseases of the endocrine, gastrointestinal and cardiovascular systems, accompanied by a violation of mineral metabolism) factors that negatively affect the resistance of hard tissues of teeth and determine their abrasion. Occupational hazards were also important (42 people noted them) and long-term medication (56 examined) due to the presence of various chronic somatic diseases. We noted that the highest prevalence was found in two age groups (IV-81% and V-82.6% groups), which is explained by the fact that the number of people with complete and partial absence of teeth, as well as with the presence of chronic somatic diseases increases with age.

Thus, the results of clinical studies obtained by us allowed us to establish the causes and prevalence of this pathology in residents of Kaspiysk, which amounted to 57.2% and was accompanied by equal indicators of hyperesthesia and TMJ pathology (39.3%). 57.2% of the surveyed had a direct bite, which is a fairly high indicator. The obtained results dictate the need to develop methods of timely prevention, rational treatment, prosthetics.

CONCLUSION

1. The prevalence of pathological erasure among the population of Kaspiysk was 57.2%, and the largest percentage was the horizontal type of pathological erasability according to the classification of M. G. Bushan.

2. The main etiological factors for the inhabitants of this region are identified: local exogenous and general endogenous factors.

3. Pathological erasability was accompanied by hyperesthesia (39.3%) and TMJ pathology (39.3%), 57.2% of the examined had a direct bite.

4. Mostly men (59%), aged 35-65 years, are ill.

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