

The Prevalence of Periodontal Diseases among Residents of Penza

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Abstract

Epidemiological dental examination of 1,216 people aged from 18 years and older living in Penza was conducted. The prevalence and intensity of the course of periodontal diseases in adolescent, adult and senior people, as well as the state of oral hygiene and the level of dental care were studied. High prevalence of periodontal diseases was shown. If one ignores the adverse factors which lead to diseases of the periodontium and does not see a doctor in a proper time, it may lead to gradual loss of the healthy teeth one by one. Inflammatory diseases of the periodontium are often followed by an unpleasant odor from an oral cavity, nonesthetic gums' and teeth appearance, people suffering from such diseases often have decreased self-esteem, while interpersonal contacts are difficult. For example, in kids it may lead to social disadaptation, and the progress at school can decrease. Also there can be a tension in communication with schoolmates.

Keywords: periodontium, hygiene, oral cavity, dental care.

INTRODUCTION

An urgency of the problem of diagnosis and treatment of periodontal diseases is caused by high prevalence of these pathological processes, which are one of the main causes of the complete tooth loss; besides, periodontal foci of infection have negative impact on the condition of internal organs [1; 2].

According to the data of the World Health Organization (WHO), functional disorders of the dentoalveolar system due to loss of teeth from periodontal diseases develop 5 times more often than in case of caries complications, and rank second in the incidence rate among all dental diseases. The multicenter studies conducted in 53 countries show high incidence of periodontal diseases: in people aged 15-19 years these pathologies account to 55-89%, at the age of 35-44 years – to 65-98%, in older age groups – up to 98% [3; 4; 5].

There are considerable data on the influence of local factors related to the oral cavity, systemic and social factors, as well as bad habits that affect the prevalence and severity of periodontal diseases. Numerous studies have established that in case of various diseases of organs and systems, there are significant functional and morphological changes in the periodontal complex [6]. The relationship between somatic diseases and the state of the oral cavity organs is associated with metabolic, hemodynamic, immunological and neuroregulatory disorders and shifts in microbiocenosis. The following conditions have direct impact on periodontium: diabetes, osteoporosis, rheumatic diseases, systemic lupus erythematosus, and diseases of the gastrointestinal tract. The severity of the periodontal diseases correlates with the alcohol and tobacco smoking abuse, state of the nervous and hormonal systems, environmental pollution, and the type of human labor [7].

Despite the large scale of the research carried out in the field of diagnosis and treatment of inflammatory periodontal diseases, there is a steady tendency of these pathologies to increase in all the age groups [1; 8]. Consequently, the issues of epidemiology of dental periodontal diseases remain to be relevant.

In the city of Penza up to date epidemiological dental examinations of the adult population have not been carried out in a full volume. Additional studies should be carried out as there are

insufficient statistical data on the epidemiological situation in the city and growing dynamics of periodontal diseases. The results of the work should contribute to the improvement of both early diagnosis of periodontal diseases and the development of effective preventive and therapeutic measures.

MATERIALS AND METHODS

In order to determine the prevalence and intensity of periodontal diseases, a survey of 1,216 people living in Penza, including 455 men and 761 women (Table 1), was carried out.

The hygienic state of the oral cavity was determined by the Green-Vermillion method. Pathological changes in the periodontium were assessed by using PMA (papillary-marginal-alveolar) index, CPITN index - the need for the treatment of periodontal diseases, and PI - periodontal index. The malocclusion was determined according to the Angle's classification. CFE index (a sum of carious, filled, and extracted teeth) was also determined.

All study results were recorded in specially developed research protocol and processed by variation statistical methods.

RESULTS AND DISCUSSION

The survey showed that 228 subjects required oral hygiene measures to be taken in the group of patients from 18 to 25 years (group 1). At the same time, the oral hygiene index by Green-Vermillion was 1.67 ± 0.11 . Such an indicator can be regarded as unsatisfactory. A total of 109 people suffered from generalized periodontal disease, which amounted to 47.8% of the number of subjects in this group. The predominance of chronic gingivitis was noted - 98 subjects (38.5%), with low incidence of periodontitis - 8 subjects (3.1%).

In the course of the study in the first age group, we revealed the relationship between the periodontal pathology and pathological occlusion. The number of patients with maxillofacial anomalies and deformities was 123 subjects (53.9%), including 92 people with periodontal diseases. CFE index in the first age group was 6.65 ± 0.12 . CPITN index was low - 0.07 ± 0.13 .

Table 1. Distribution of the surveyed people by sex and age

Age	18-25 years old		26-35 years old		36-55 years		56 and over	
	Male	Female	Male	Female	Male	Female	Male	Female
Number of subjects	108	146	103	88	158	371	86	156
Total	254		191		529		242	
Sum-total	1,216							

In the age group from 26 to 35 years (group 2), Green-Vermillion index was unsatisfactory and amounted to 1.74 ± 0.09 . This factor had negative effect on the growth of the CFE index (14.5 ± 0.11) compared to the 1st group (2.18-fold). Component (P) dominated in the structure of the index, which satisfactorily characterized the availability of dental care to the surveyed people in Penza city. CPITN index (2.2 ± 0.17) significantly increased, indicating the increased need for professional treatment and proper oral hygiene. The number of patients with generalized periodontal diseases increased - 114 subjects (59.6%), the severity of the diseases also increased. Various forms of gingivitis were detected in 65 subjects (44.5%), of periodontitis - in 29 subjects (15.1%), moderate and severe periodontitis was revealed in 16 people (8.3%).

The study found that patients aged 36-55 years more needed professional oral hygiene compared to the patients of the first and second age groups (Green-Vermillion index was 2.05 ± 0.09). There was a tendency to an increase in CPI index of 24.2 ± 0.11 , which was 3.63 times higher than that in group 1 and 1.66 times higher compared to group 2. The same changes affected CPITN index (2.5 ± 0.19). In CFE index, there was an increase in the extraction (E) component, while the loss of teeth was more often associated with severe generalized periodontitis. Periodontitis cases were prevalent in the structure of morbidity; 238 (45.1%) subjects have severe and moderate periodontitis.

Patients of the 4th age group (over 56 years) were more likely to have periodontal diseases - 118 subjects (48.7%), and less likely - gingivitis, which was found in 49 subjects (20.2%). The prevalence of periodontal diseases was 68.9%. Oral hygiene in this age was also unsatisfactory (Green-Vermillion index was 2.14 ± 0.14). Complete edentulousness occurred equally in persons of both sexes, and was 10.3% of the total number of subjects in this age group.

CONCLUSION

Thus, the study of the prevalence and intensity of periodontal diseases in residents of Penza in different age groups showed that in the subjects of group 1 with unsatisfactory oral hygiene the spread of periodontal inflammatory diseases was already high enough - 42%. With the age, the state of oral hygiene also remained unsatisfactory (in group 2 the Green-Vermillion index was 1.74). This changed the structure and frequency of

occurrence of inflammatory periodontal diseases. The total number of patients with periodontal pathologies increased up to 59.6%. The need for professional oral hygiene in the 3rd and 4th group even more increased, which caused the prevalence of periodontitis at this age up to 68.9%. This examination of the adult population of Penza revealed the need to improve methods of prevention and treatment of periodontal diseases in all age categories.

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