

Periodontal Status in Population of Belarus

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SUMMARY

The aim of this study was to evaluate periodontal status of Belarusian population in the different age groups. Epidemiological survey was undertaken among 2007 subjects at 9 age groups (15, 16, 17, 18, 20-24, 35-44, 45-54, 55-64, 65-74) in different regions of Belarus in 2002 – 2003. Periodontal status was assessed using CPITN index. All data were recorded in the special examination form. Statistical analysis was performed using the methods of variation statistics and ANOVA.

The present study indicates that there are high prevalence and severity of periodontal diseases among the population of Belarus. Periodontal status becomes worse with age.

The prevalence of periodontal pockets 4-5 mm (CPITN 3) increased from $0.85 \pm 0.84\%$ in 15 yrs old to $21.69 \pm 2.66\%$ in 35-44 yrs and $31.18 \pm 3.55\%$ in 45-54 yrs. The mean number of sextants per person with shallow pockets (CPITN 3) varied from 0.01 ± 0.01 in 15 yrs to 0.68 ± 0.08 in 35-44 and 1.03 ± 0.11 in 45-54 yrs. In elder age groups shallow periodontal pockets were registered rarely: in $12.18 \pm 2.12\%$ in 55-64 yrs and in $11.59 \pm 2.13\%$ in 65-74. The mean number of sextants per person was 0.46 ± 0.06 and 0.56 ± 0.11 accordingly. The deep periodontal pockets more than 6 mm (CPITN 4) were registered in 35-44 years in $3.31 \pm 1.15\%$ of examined subjects and the mean number of sextants per person was 0.07 ± 0.03 . In the age group 65-74 the periodontal pockets (CPITN 3, 4) were founded in $13.04 \pm 1.5\%$ of people and the mean number of sextants per person was 0.64 ± 0.07 . This investigation demonstrate, that the question of adequate prevention and treatment for periodontal disease has to be addressed and answered rationales according to the dental services available.

Key words: periodontal status, CPITN index, epidemiological surveys, gingival bleeding, dental calculus, periodontal pockets

INTRODUCTION

As the prevalence and severity of periodontal diseases are high among population, prevention and treatment of these diseases are one of the most serious problems of the modern dentistry [13].

Assessment of the disease's level is possible due to the use of science-based criteria of evaluation. WHO has recommended the CPITN to unify the data of the prevalence and severity of periodontal diseases in different countries [1]. In 1990 WHO published the first data about periodontal condition which had been received by mean of CPITN [3]. The database is renewing constantly. The results of more than 500 researches in different countries of the whole world are obtained now. On the base of multiple epidemiological surveys it is known that the percentage of people with healthy periodontal tissues decreases with age. Gingivitis is founded in 40 – 50 % of population [7,11,12]. The prevalence of generalized periodontitis is varying from 5 to 20 % in different countries [4,5,9,10]. Periodontal diseases present a great medico-social problem in according to the risk of teeth loss and worsen of the life quality [2,8]. It explains the need for periodontal treatment. Epidemiological surveys studying tendency of periodontal diseases and need of periodontal treatment are necessary to plan effective oral health service, its developing and organization forms.

The aim of this study was to evaluate periodontal status of Belarusian population in the different age groups.

MATERIALS AND METHODS

Epidemiological survey was undertaken among 2007 subjects at 9 age groups (15, 16, 17, 18, 20-24, 35-44, 45-54, 55-64, 65-74) in different regions of Belarus in 2002 – 2003 [6,14,15]. The number of examined persons in every age group was 118, 320, 287, 135, 389, 245, 170, 205, 138 accordingly (table 1). Periodontal status was assessed using CPITN. All data were recorded in the special examination form. Statistical analysis was performed using the methods of variation statistics and ANOVA.

RESULTS

The mean number of healthy sextants per person (CPITN 0) decreased from 1.07 ± 0.11 SE in 15 yrs old to 0.19 ± 0.02 in 35-44 yrs old. Gingival bleeding (CPITN 1) was

Table 1. Distribution of population of Belarus in epidemiological study (age groups, sex).

Age groups (years)	Quantity of subjects	Percent of female \pm SE	Percent of male \pm SE
15	118	56,0 \pm 5,73	44,0 \pm 5,73
16	320	37,74 \pm 4,7	62,26 \pm 4,7
17	287	53,6 \pm 4,46	46,4 \pm 4,46
18	135	58,63 \pm 6,50	41,37 \pm 6,50
20-24	389	65,67 \pm 6,80	34,33 \pm 5,80
35-44	245	63,97 \pm 3,63	36,03 \pm 3,66
45-54	170	72,65 \pm 2,85	27,35 \pm 2,85
55-64	205	48,78 \pm 4,51	51,22 \pm 4,51
65-74	138	49,73 \pm 4,7	50,27 \pm 4,7

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Table 2. The prevalence and severity of periodontal diseases (CPITN) among the population of Belarus, 2003.

Age groups	Number of Examined subjects	Percent of examined people with CPITN codes «0-4»						Mean number of sextants involved per person						
		«0»		«1»		«2»		Excluded Sextants «X»	«0»	«1»	«2»	Periodontal pockets		Exclude Sextant «X» (M±SE)
		«0»	«1»	«0»	«1»	«2»	«0»		«1»	«2»	4-5 mm «3»	≥6 mm «4»		
15 yrs	118	0,85± 0,84	0,85± 0,84	97,46± 1,45	0,85± 0,84	0	0	1,07± 0,11	0,18± 0,04	4,72± 0,12	0,01± 0,01	0	0	
16 yrs	320	1,56± 0,69	0,94± 0,54	94,38± 1,29	3,13± 0,97	0	0	1,07± 0,07	0,27± 0,04	4,61± 0,08	0,04± 0,01	0	0	
17 yrs	287	1,74± 0,77	3,14± 1,03	90,59± 1,72	4,53± 1,23	0	0	1,24± 0,08	0,28± 0,04	4,37± 0,09	0,06± 0,02	0	0	
18 yrs	135	1,48± 1,04	6,67± 2,15	88,89± 2,71	2,96± 1,46	0	0	1,17± 0,12	0,39± 0,08	4,24± 0,15	0,04± 0,2	0	0	
20-24 yrs	389	0,26± 0,26	3,09± 0,89	86,38± 1,74	10,28 ±1,54	0	0	1,03± 0,05	0,75± 0,06	4,05± 0,07	0,18± 0,03	0	0	
35-44 yrs	245	0	0	60,33± 3,15	21,9± 2,66	3,31± 1,15	14,46± 2,26	0,19± 0,02	0,57± 0,07	4,27± 0,12	0,68± 0,08	0,07± 0,03	0,22± 0,04	
45-54 yrs	170	0	0	40,59± 3,77	31,18 ±3,55	5,88± 1,80	22,35± 3,20	0,04± 0,02	0,05± 0,02	4,05± 0,14	1,03± 0,11	0,15± 0,05	0,47± 0,08	
55-64 yrs	205	0	0	23,53± 2,75	12,18 ±2,12	1,68± 0,83	62,61± 3,14	0	0	2,97± 0,15	0,46± 0,06	0,13± 0,02	2,45± 0,16	
65-74 yrs	138	0	0	7,25± 2,21	11,59 ±2,73	1,45± 1,02	79,71± 3,42	0	0	1,60± 0,19	0,56± 0,11	0,08± 0,04	3,61± 0,25	

varying from 0.18 ± 0.04 in 15 yrs old to 0.57 ± 0.07 in 35-44 yrs old (mean number of sextants involved). CPITN scores reflecting the dental calculus were following: in 15 yrs old – 97.46 ± 1.45 % of examined subjects and 4.72 ± 0.12 of the mean number of sextants involved; in 35-44 yrs old – 60.33 ± 3.15 % of examined and 4.27 ± 0.12 of the mean number of sextants; in 65-74 yrs old – 7.25 ± 2.21 % and 1.60 ± 0.19 of the mean number of sextants.

The prevalence of periodontal pockets 4-5 mm (CPITN 3) increased from 0.85 ± 0.84 % in 15 yrs old to 21.69 ± 2.66 % in 35-44 yrs and 31.18 ± 3.55 % in 45-54 yrs. The mean number of sextants per person with shallow pockets (CPITN 3) varied from 0.01 ± 0.01 in 15 yrs to 0.68 ± 0.08 in 35-44 and 1.03 ± 0.11 in 45-54 yrs. In elder age groups shallow periodontal pockets were registered rarely: in 12.18 ± 2.12 % in 55-64 yrs and in 11.59 ± 2.13 % in 65-74. The mean number of sextants per person was 0.46 ± 0.06 and 0.56 ± 0.11 accordingly. The deep periodontal pockets more than 6 mm (CPITN 4) were registered in 35-44 yrs in 3.31 ± 1.15 % of examined subjects and the mean number of sextants per person was 0.07 ± 0.03 . It was founded that there were excluded sextants in the same age group (CPITN X). They were registered in 14.46 ± 2.26 % of examined people, 0.22 ± 0.04 mean number of sextants per person. In the age group 65-74 the periodontal pockets (CPITN 3, 4) were founded in 13.04 ± 1.5 % of people and the mean number of sextants per person was 0.64 ± 0.07 . The structure of periodontal index CPITN among examined population is shown in table 2.

DISCUSSION

Periodontal disease does seem to be the major cause of tooth-loss in Belarus. The prevalence of advanced periodontal disease increases with age. In adolescences from 15 years

old only one healthy sextant of periodontium per person besides in adults from 35-44 years of age the mean number of healthy sextants (CPITN 0) less than 0,2 per person. There were no people with healthy periodontal tissues in elder age groups.

Gingival bleeding (CPITN 1) was occurred the young groups of population. The percent of examined people with CPITN «1» varying from 0,9 % in 15 yrs to 3 % in 20-24.

The date on prevalence and severity of dental calculus (CPITN 2) were high in all age groups. Periodontal pockets 4-5 mm (CPITN 3) were founded also in all age groups. Moderate disease with pocket probing depth of up to 5 mm is seen in 22% in 35-44 yrs and 31% in 45-54 yrs. These prevalence figures decrease to value 12% in seniors (65-74 years of age). The deep pockets more than 6 mm (CPITN 4) were registered in 35-44 in 3% and in 45-54 in 6% subjects. In the age group 65-74 the deep periodontal pockets (CPITN 4) were founded in 1,5 % of people. But in this age group 80% of people were excluded from the survey as a large number of teeth were missing. For this reason it was difficult to detect the degree of the periodontal disease.

CONCLUSION

The present study indicates that there are high prevalence and severity of periodontal diseases among the population of Belarus. Periodontal status becomes worse with age. Our investigation demonstrates that it is necessary to study periodontal diseases in different age groups. It will help to make monitoring of periodontal diseases more objective and the medical effectiveness of periodontal treatment more effective. The question of adequate prevention and treatment for periodontal disease has to be addressed and answered rationales according to the dental services available.

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