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THE PERIODONTAL TISSUE STATE IN CHILDREN OF THE JUVENILE AGE TAKING INTO CONSIDERATION THE GENERAL SOMATIC FACTOR

O.I. Godovanets, T.S. Kitsak

Bukovinian State Medical University, Chernivtsi, Ukraine

Dental morbidity in children, despite numerous preventive measures, remains very high today. The prevalence and severity of the clinical course of periodontal tissue disease vary widely in Ukraine and other countries, and depends on age.
Today, inflammatory diseases of periodontal tissues are considered as a reaction of the organism to the imbalance between the microbial agent and the protective systems of the oral cavity under the influence of various exo- and endogenous factors. Microflora of tartar, plaque, dental calculus can actively interact with the tissue elements located under the sulcus epithelium, thus triggering typical pathological processes.
***Objective** – to determine the prevalence and intensity of periodontal tissue damages in children with comorbid diffuse non-toxic goitre (DNG).*
***Materials and Methods.** To determine the dynamics of changes in clinical parameters with age, two age groups – 12 and 15 years, among them there were 180 children with DNG, and 80 somatically healthy children have been examined.*
***Results.** Examination of somatically healthy children showed the presence of periodontal tissue pathology in 62,00 % of children under examination at the age of 12 years and in 80,00 % of those at the age of 15 years (Fig.1). CCG dominated in the structure of periodontal diseases with detection rates ranging from 83,33 to 95,83 %.*
***Conclusions.** Regarding periodontal tissue damages by tartar as one of the leading factors of inflammatory processes in gums and alveolar bone, the following should be noted: there is a low level of periodontal tissue damage in younger children and in somatically healthy children of both ages. The incidence of hard dental deposits in adolescents with DNG is moderate, and high in case of DNG, grade II.*

Key words:
periodontium, diffuse non-toxic goiter, children.

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E-mail: kitsak_tetiana@bsmu.edu.ua

СТАН ТКАНИН ПАРОДОНТА У ДІТЕЙ ПІДЛІТКОВОГО ВІКУ З УРАХУВАННЯМ ЗАГАЛЬНОСОМАТИЧНОГО ЧИННИКА

О.І. Годованець, Т.С. Кіцак

Буковинський державний медичний університет, м. Чернівці, Україна

***Мета –** визначити поширеність та інтенсивність ураження тканин пародонта в дітей при супутньому дифузному нетоксичному зобі.*
***Матеріали і методи.** Для виявлення динаміки змін клінічних показників із віком нами досліджено дві вікові групи – 12 та 15 років, серед них 180 дітей хворих на дифузний нетоксичний зоб (ДНЗ) та 80 соматично здорових дітей.*
***Результати.** Огляд соматично здорових дітей засвідчив наявність патології тканин пародонта у 62,0 % обстежених віком 12 років та у 80,00 % – у 15-річному віці. У структурі захворювань тканин пародонта домінував хронічний катаральний гінгівіт, частота виявлення якого коливалася в межах 83,33-95,83 %. Спостерігалася тенденція до зростання поширеності патології тканин пародонта в дітей зі збільшенням ступеня тяжкості ДНЗ.*
***Висновки.** Хронічний катаральний гінгівіт у дітей за умов дифузного нетоксичного зобу характеризується більш тяжким перебігом захворювання. У дітей із дифузним нетоксичним зобом домінував середній ступінь тяжкості хронічного катарального гінгівіту, порівняно із соматично здоровими, у яких здебільшого виявлявся легкий ступінь тяжкості захворювання. Спостерігалися посилення скарг та симптоматики запального процесу в яснах зі збільшенням віку дітей та ступеня тяжкості досліджуваної патології щитоподібної залози.*

Ключові слова:
пародонт, дифузний нетоксичний зоб, діти.

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Introduction

Dental morbidity in children, despite numerous preventive measures, remains very high today. The prevalence and severity of periodontal tissue disease vary widely in Ukraine and other countries, and depends on age [1-10].

Today, inflammatory diseases of periodontal tissues are considered as a reaction of the organism to the imbalance between the microbial agent and the protective systems of the oral cavity under the influence of various exo- and endogenous factors. Microflora of tartar, plaque, dental calculus can actively interact with

the tissue elements located under the sulcus epithelium, thus triggering typical pathological processes.

The objective

To determine the prevalence and severity of periodontal lesions in children with comorbid diffuse nontoxic goitre (DNG).

Materials and Methods

Dental examination of 156 children aged 12-15 years, suffering from diffuse non-toxic goiter (DNG), has been carried out. Patients with Ia, Ib and II degree of DNG severity were involved into observation. In particular, 72 children at the age of 12 (34 boys and 38 girls) and 84 children at the age of 15 (42 boys and 42 girls) were examinedby us. Data of examination of somatically healthy children of the same age, not suffering from DNG, were used for comparative estimation of indices under study.

Estimation of periodontal tissues state in children was carried out by means of gingival (PMA), periodontal (CPI) indices and Shiller-Pisarev test use. M.F. Danylevsky (1994) classification of periodontium tissue diseases was followed when making a diagnosis. The severity degree of chronic catarrhal gingivitis (CCG) was determined by PMA index.

All diagnostic manipulations were put into practice following the acquaintance and signing by parents, and by children after 14 years, informative consent of the patient to carry out clinical investigation.

The results of investigation were statistically processed on computer by means of Microsoft Excel Office 2016. The normality of sings' distribution was determined by Shapiro-Wilk criterion. Methods of parametric statistics (Student's t-test) were used according to the normality distribution. The difference was considered to be veritable at $p \leq 0,05$.

Results and their discussion

Examination of somatically healthy children showed the presence of periodontal tissue pathology in 62,00 % of those examined at the age of 12 years and in 80,00 % of those at the age of 15 years (Figure 1).

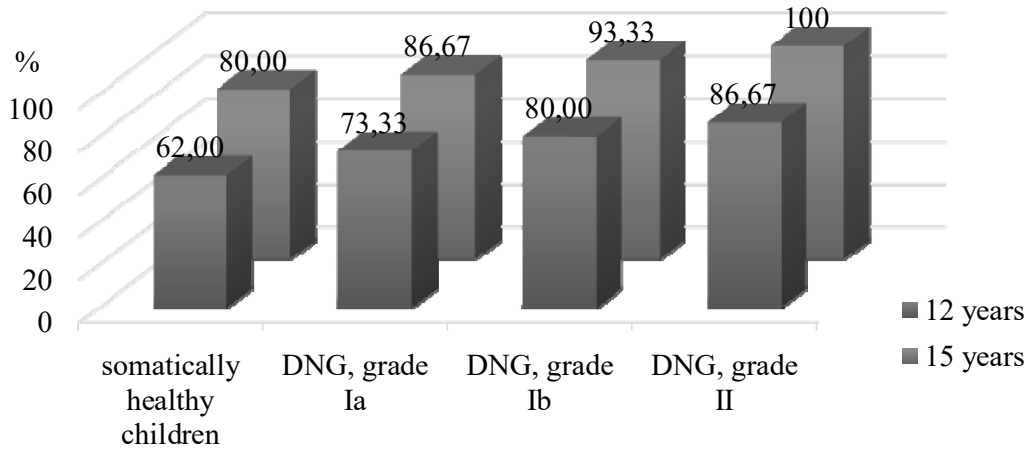

Fig. 1. Occurrence of periodontal disease in somatically healthy children and patients with diffuse nontoxic goiter.

These figures were markedly higher in case of DNG. In particular, in the first age group, the prevalence of periodontal disease in preschool children was 79,11 %; in older children it constituted 93,33 %. There was a tendency for the prevalence of periodontal pathology in children according to an increase of DNG. 100 % of periodontal tissue damages were registered in adolescents with DNG, grade II. CCG dominated in the structure of periodontal diseases with detection rates ranging from 83,33 to 95,83 % (Table 1).

Table 1

Structure of periodontal diseases in children with diffuse nontoxic goiter of various degrees of severity

Children's age	Somatic state	Periodontal diseases,%		
		chronic catarrhal gingivitis	chronic hypertrophic gingivitis	periodontitis
12 years	healthy children (n=31)	90,32	9,68	-
	DNG (n=72)	93,06*	6,94*	-
	DNG, grade Ia (n=22)	90,91*	9,09	-
	DNG Iв (n=24)	95,83*	4,17*	-
	DNG II (n=26)	92,31*	7,69	-
15 years	healthy children (n=24)	87,50	12,50	-
	DNG (n=84)	85,72	7,14	7,14*
	DNG Ia (n=26)	88,46	7,69	3,85*
	DNG Iв (n=28)	85,72	7,14	7,14*
	DNG Н3 II (n=30)	83,33	6,67	10,00*

*Note: * – statistically significant difference compared to the control group (p≤0,05).*

The highest percentage was in children aged 12 years with grade Ib and grade Ia of DNG severity. As age increased, there was a slight decrease in the prevalence of CCG with a simultaneous occurrence of more severe forms of periodontal lesions, including the initial forms of periodontitis. This occurred more often in adolescents with DNG, grade II.

Chronic hypertrophic gingivitis, which mostly was fibrotic, occurred in children of all groups under observation. CPI index analysis, according to WHO recommendations, was carried out by determining the number of sextants affected by bleeding and calculus corresponding to the age of children, as shown in Figures 2-3.

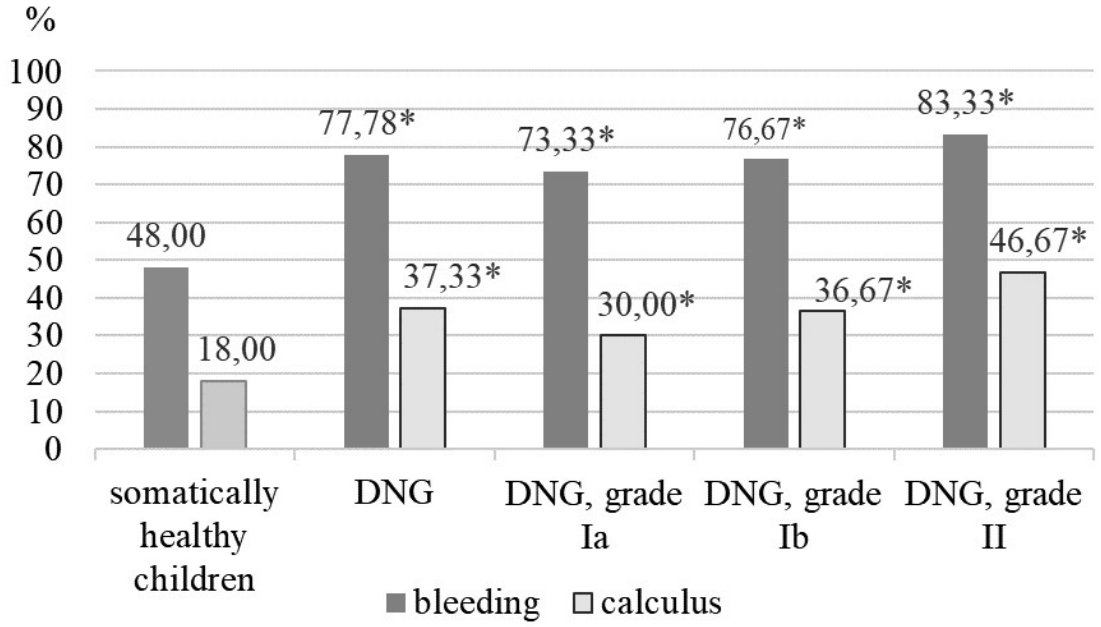

Fig. 2. Prevalence of bleeding and calculus in 12-year-old children with diffuse nontoxic goitre of various degrees of severity.

*Note: * – statistically significant difference compared to the control group (p≤0,05).*

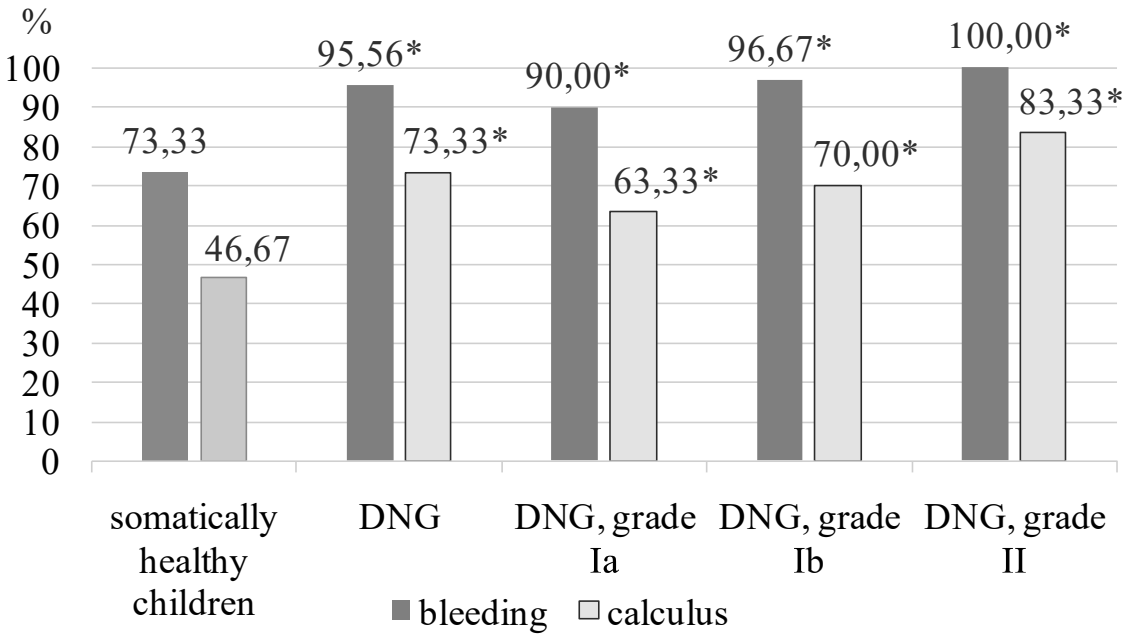

Fig. 3. Data of bleeding and calculus prevalence in 15-year-old children with diffuse non-toxic goitre of various degrees of severity.

*Note: * – statistically significant difference compared to the control group (p≤0,05).*

The prevalence of periodontal tissue lesions under conditions of concomitant DNG, according to periodontal tissue assessment criteria for 15-year-old children, with regard to bleeding is high and probably higher than in somatically healthy children in both age groups. In particular, in 12-year-old children with DNG, gingival bleeding was observed 29,78 % more frequently as compared with healthy peers. Bleeding was 22,23 % more common in 15-year-old children with DNG.

Conclusions

Thus, the following should be noted with regard to periodontal tissue lesions in the presence of calculus as one of the leading factors in the development of inflammatory processes in gingivae and alveolar bone: in young children and in somatically healthy children of both ages there is a low level of periodontal tissue lesions. The incidence of calculus is medium in adolescents with DNG, and high in those with DNG, grade II.

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Відомості про авторів:
Годованець О.І. – д.мед.н., професор, завідувач кафедри стоматології дитячого віку, Буковинський державний медичний університет, м. Чернівці, Україна.
E-mail: godovanec.oksana@bsmu.edu.ua
ORCID: https://orcid.org/0000-0002-1889-3893
Кіцак Т.С. – к.мед.н., доцент кафедри стоматології дитячого віку, Буковинський державний медичний університет, м. Чернівці, Україна.
E-mail: kitsak_tetiana@bsmu.edu.ua
ORCID: http://orcid.org/0000-0003-1253-8919

Information about authors:
Godovanets O.I. – Doctor of medical sciences, Professor, Head of the Department of Pediatric Dentistry, Bukovinian State Medical University, Chernivtsi, Ukraine.
E-mail: godovanec.oksana@bsmu.edu.ua
ORCID: https://orcid.org/0000-0002-1889-3893
Kitsak T.S. – Associate Professor of the Department of Pediatric Dentistry, Bukovinian State Medical University, Chernivtsi, Ukraine.
E-mail: kitsak_tetiana@bsmu.edu.ua
ORCID: http://orcid.org/0000-0003-1253-8919

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