



ORIGINAL ARTICLE

LOCAL RISK FACTORS IN THE DEVELOPMENT OF PERIODONTAL DISEASES IN CHILDREN AND ADOLESCENTS

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Abstract

Purpose: To estimate the prevalence of gingivitis associated with dental biofilm and to investigate the influence of local risk factors on the development of inflammatory process in the gums in children and adolescents.

Materials and Methods: 117 children and adolescents aged 12 to 17 years at the Dental Medical Centre of the Bogomolets National Medical University were examined. All participants were examined for periodontal status, state of oral hygiene, and local risk factors for periodontal diseases.

Results: A high prevalence of gingivitis associated with dental plaque (89.7%) was found in children and adolescents aged 12-17 years. The overwhelming majority of them (71.4%) had gingivitis caused by dental biofilm and local risk factors. The prevalence of malocclusions and anomalies of individual teeth was 60%. Carious tooth lesions and poor-quality proximal restorations were detected in 37.1% of participants. Violations of the rules of individual hygienic care of the oral cavity were observed in 54.3% of patients.

Conclusion: Local risk factors lead to a significant deterioration in periodontal health in childhood and adolescence, especially in the case of their combined adverse effects. Significant predictors of gingivitis include the accumulation of microbial biofilm and tartar due to poor oral hygiene, dentoalveolar anomalies, carious cavities and proximal restorations, irregular toothbrushing and poor interdental hygiene. The high prevalence of gingivitis necessitates the priority development of primary prevention of inflammatory periodontal diseases in children and adolescents.

Keywords: children; adolescents; gingivitis; risk factors of periodontal diseases.

Introduction

Nowadays periodontal diseases in childhood and adolescence remain an actual problem both in

Ukraine and worldwide due to their high prevalence.^{5,8,11,16,24,27,29}

The modern classification of periodontal diseases,

proposed by the European Federation of Periodontists and the American Academy of Periodontology in 2017, is based on the etiological principle of diagnosis, taking into account adverse local and systemic modifying factors.³⁻⁴

The leading etiological factor of periodontal diseases is a bacterial biofilm, which implements its pathogenic properties in the presence of local and systemic risk factors.^{6,17,18,19,21,28,30} Poor oral hygiene, occlusal disorders and carious defects of the hard tissues of the teeth have a significant role in the development of periodontal diseases.^{2,8,13,20,21,26,27,29}

In children, in the presence of unfavourable local factors, the likelihood of damage to morphologically immature periodontal structures increase significantly.¹⁷

The prolonged course of the inflammatory process in the gums is considered to be a significant risk factor for the development of periodontitis.^{19,21} Therefore, the timely identification and elimination of factors contributing to the progression of the pathological process in the periodontium is extremely important, especially in childhood and adolescence.¹⁷

Material and methods

The study was conducted at the Dental Medical Centre, the main clinical base of the Faculty of Dentistry of the Bogomolets National Medical University, in 2023. 117 children and adolescents aged 12 to 17 years who came for dental care due to dental caries and its complications were examined. All parents provided informed voluntary consent for the dental examination and answered a questionnaire about their children's general health at the time of the examination. According to the information received, all study participants were somatically healthy.

Gingivitis associated with dental biofilm was observed in 105 children and adolescents.³⁻⁴ They were divided into two groups. The first group included 75 participants with gingivitis caused by dental biofilm and local risk factors. The second group consisted of 30 children who were diagnosed with gingivitis associated only with dental biofilm.

To study the influence of local risk factors for periodontal diseases, the first group was divided into 3 subgroups. The first subgroup included 24 children in whom only one of the studied negative factors was detected. The second subgroup consisted of 25

patients who had two local risk factors. The 26 children of the third subgroup had three or four negative factors.

The study design excluded medically induced gingival overgrowth and gingivitis not associated with dental biofilm.³⁻⁴ The selection criteria also included the absence of any orthodontic appliances in children and adolescents at the time of the examination.

The Basic Periodontal Examination-Simplified (BPE-S) was used to assess the periodontal status in children and adolescents.^{23,25} The state of periodontal tissues was studied by probing according to the classical method in the area of six index teeth: 16, 11, 26, 36, 31, 46. For this study, the World Health Organization (WHO) BPE probe was used. The quality of hygienic care was estimated using the Oral Hygiene Index-Simplified (OHI-S, Green-Vermillion, 1964). The vestibular surfaces of 16, 11, 26, 31 and oral surfaces of 36, 46 index teeth were examined according to the standard method.¹²

The dental examination included determination of risk factors for periodontal diseases: carious cavities and poor-quality restorations of proximal localisation; dentoalveolar anomalies according to the classifications of E. Engle and D.A. Calvelis, which complement each other; behavioural factors for compliance with the rules of individual oral hygiene.

Statistical Analysis

Statistical data processing was performed using the EZR package (Free statistical software: EZR on Rcommander: RFoundation for Statistical Computing, Vienna, Austria).¹⁴

Categorical data were described in percentages that characterised the prevalence of gingivitis and the studied risk factors for periodontal disease. The normality of the distribution was assessed by the D'Agostino-Pearson criterion. The distribution differed from the normal one, so the median (Me) and interquartile range (QI - QIII) were calculated to represent quantitative features. Comparison of central tendencies for two independent samples was performed using the Wilcoxon-Mann-Whitney W test. The independent variables were the values of the BPE-S index in the first and second groups, as well as the values of the OHI-S index in these groups.

The evaluation of multiple comparisons was carried out in two stages: by Kruskal-Wallis rank one-factor analysis, posterior comparisons were performed by the Danna criterion. The significance of the correlation was checked by the Spearman's rank correlation (R_0). Differences at $p < 0.05$ were considered statistically significant.

The calculation of the minimum sample size was based on a comparison of the indicators of periodontal tissue condition and the quality of oral hygiene care in the 2 groups using the non-parametric Wilcoxon-Mann-Whitney test. A significant effect was considered clinically significant (effect size, $d=0.8$). The calculation was performed for the probability of a first-order error $\alpha=0.05$ and power 90%, based on the ratio of sample sizes in the groups $n1/n2=2.5$. The minimum sample size is 88 people: in the first group $n=63$, in the

second group $n=25$. The calculations were carried out in the G*Power 3.1.9.6 package (Heinrich-Heine-Universität Düsseldorf, 1992-2020) ¹⁰. On their basis, 105 children and adolescents were included in the study.

Results

The condition of periodontal tissues in children and adolescents aged 12 to 17 years ($n=117$) is shown in Figure 1. The results of the study indicate a high prevalence of gingivitis associated with dental biofilm - 89.7% ($n=105$). Periodontitis of initial severity was diagnosed in 5.9% ($n=7$) of the patients. The low proportion of children and adolescents with healthy periodontium (4.3% ($n=5$)) is concerning.

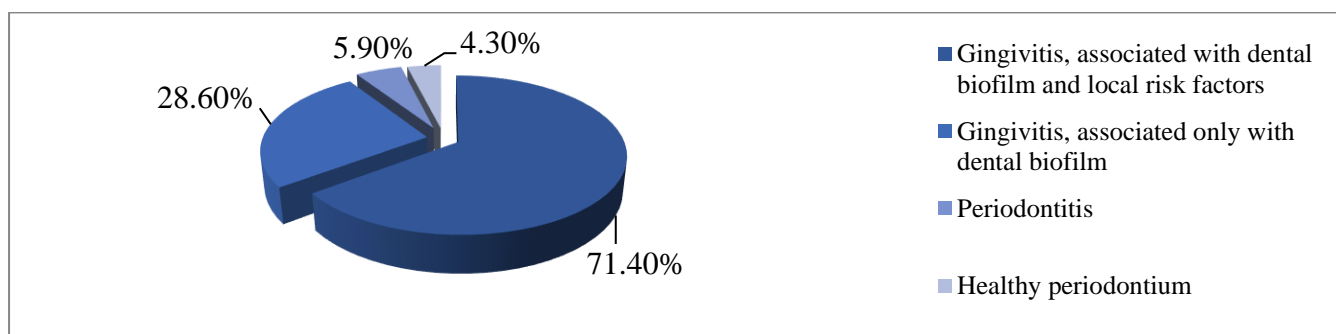


Figure 1. Periodontal condition in children and adolescents aged 12-17 years

Gingivitis caused by dental biofilm and local risk factors was observed in 71.4% ($n=75$) of the patients. The gingivitis associated only with dental biofilm was detected in 28.6% ($n=30$) of patients. Its lowest prevalence was recorded in adolescents aged 15-17

years (Figure 2). We identified no significant differences in the frequency of gingival inflammation in different age groups. This indicates that gingivitis does not depend on age.

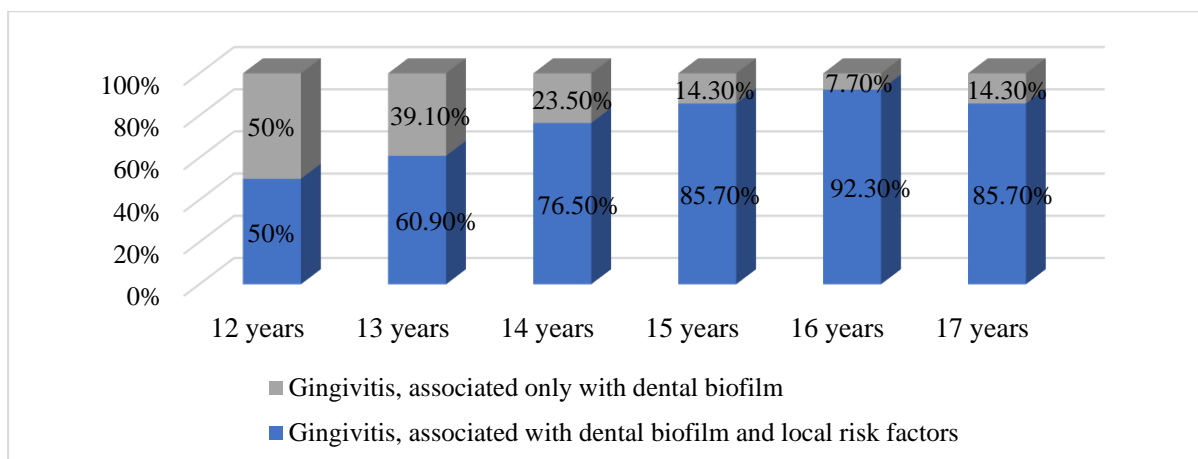


Figure 2. Prevalence of gingivitis in children and adolescents aged 12-17 years

The state of oral hygiene was unsatisfactory in both study groups (Table 1). In the first group, in the presence of local risk factors for periodontal disease, the median value of the OHI-S hygiene index was significantly higher than in the second group ($p=0.015$). The data obtained showed the negative impact of local risk factors on the level of oral hygiene care.

The results of the study of periodontal status using the BPE-S index are shown in Table 1. A significantly higher median number of sextants with tartar was recorded in the first group compared to the

second ($p < 0.001$). The obtained indicators confirm the role of local risk factors in creating favourable conditions for the accumulation and subsequent mineralisation of biofilm.

A statistically significant difference was found between the median number of healthy sextants in the second group compared to the first ($p=0.005$). The decrease in the number of unaffected areas in the second group in the presence of local risk factors proves their negative impact on the state of periodontal tissues.

Table 1. Values of the OHI-S hygiene index and the BPE-S periodontal index in different groups

Indicators	Group 1 (n=75)	Group 2 (n=30)	p
Index OHI-S	1.8 (1.8 – 2) ²	1.8 (1.7 – 2) ¹	$p = 0.015$
BPE-S index: sextants with bleeding gums	2 (2 – 3)	2 (1 – 3)	$p > 0.05$
BPE-S index: sextants with tartar	1 (0 – 1) ²	0 (0 – 1) ¹	$p < 0.001$
BPE-S index: healthy sextants	3 (2 – 4) ²	4 (3 – 4) ¹	$p = 0.005$

Notes: The median value of the indicator (Me) and the interquartile range (QI-QIII) are presented. The Mann-Whitney test was used for comparison:

¹ - difference from group 1 is statistically significant;

² - difference from group 2 is statistically significant.

The analysis of the obtained results demonstrated a significant correlation between the values of the OHI-S hygiene index and the periodontal index BPE-S in both study groups.

A direct correlation between the OHI-S index and the number of sextants with gingival bleeding (BPE-S) was determined in the first ($R_0=0.61$; $p < 0.01$) and second groups ($R_0=0.77$; $p < 0.01$). A direct correlation between the OHI-S index and the number of sextants with tartar (BPE-S) was also recorded in the first ($R_0=0.67$; $p < 0.01$) and second groups ($R_0=0.48$; $p < 0.01$). The most significant inverse correlation was observed between the OHI-S index and the number of healthy sextants (BPE-S) in the first ($R_0 = - 0.98$; $p < 0.01$) and second groups ($R_0 = - 0.88$; $p < 0.01$). The obtained data convincingly prove the leading role of microbial biofilm in the development of inflammatory process in the gingival mucosa.

A direct correlation was found between the number of sextants with gingival bleeding and tartar in the first group ($R_0 = 0.25$; $p < 0.05$). On the contrary, an inverse correlation was recorded

between the number of healthy sextants and sextants with tartar in both the first ($R_0 = - 0.54$; $p < 0.05$) and second groups ($R_0 = - 0.75$; $p < 0.05$). These data indicate a significant negative effect of tartar on the occurrence of gingivitis.

The results of the study of periodontal and oral hygiene in children and adolescents with a different number of local risk factors are shown in Table 2. The OHI-S hygiene index score was significantly lower in the first subgroup of participants with one local risk factor compared to the second ($p<0.05$) and third subgroups ($p<0.01$), where two and three to four negative factors were observed, respectively. The data obtained confirm that the combined effect of local risk factors on the hygienic state of the oral cavity is more significant.

A significantly lower median number of segments with gingival bleeding was recorded in the first subgroup, in contrast to the second ($p<0.05$) and third subgroups ($p<0.01$). The median number of segments with tartar in the first subgroup was significantly different from the similar indicators of the second ($p<0.05$) and third subgroups ($p<0.01$). The first

subgroup showed a significantly higher median number of healthy sextants than the second ($p < 0.05$) and third subgroups ($p < 0.01$). The results showed

that in the presence of two or more local risk factors, periodontal health significantly deteriorates.

Table 2. BPE-S and OHI-S indices in children and adolescents depending on the number of local risk factors

Indicators	Subgroup 1 (n=24)	Subgroup 2 (n=25)	Subgroup 3 (n=26)	p
OHI-S	1.8 (1.7 – 1.8) ^{2,3}	2 (1.8 – 2) ¹	2 (1.8 – 2) ¹	p = 0.02
BPE-S: sextants with bleeding gums	2 (1 – 2) ^{2,3}	2 (2 – 3) ¹	3 (2 – 3) ¹	p < 0.001
BPE-S: sextants with tartar	1 (0 – 1) ^{2,3}	1 (1 – 2) ¹	1 (1 – 1) ¹	p = 0.05
BPE-S: healthy sextants	4 (3 – 4) ^{2,3}	3 (2 – 3) ¹	2 (1 – 3) ¹	p < 0.001

Notes: The median value of the indicator (Me) and the interquartile range (QI-QIII) are presented. The Kruskal-Wallis test was used for comparison, and posterior comparisons were made using the Dunn test:

¹ - difference from subgroup 1 is statistically significant, $p1 < 0.01$;

² - difference from subgroup 2 is statistically significant, $p2 < 0.05$;

³ - difference from subgroup 3 is statistically significant, $p3 < 0.01$.

We analysed the prevalence of local risk factors for periodontal disease. The largest proportion was made up of dentoalveolar anomalies observed in 60% (n=63) of the patients (Figure 3). In the most cases, malocclusion of Engle class I was recorded - 41.9% (n=44), characterised by abnormalities in the anterior region of the jaws. Distal occlusion (Engle class II) was detected in 17.1% (n=18) of participants, mesial occlusion (Engle class III) - in 1.0% (n=1) of the

examined. The prevalence of deep bite, which belongs to vertical anomalies according to the classification of D. A. Calvelis, was 16.2% (n=17). Among the anomalies of the dentition, the predominant position of the teeth in the anterior region of the jaws was crowded - 18.1% (n=19). Anomalies in the position of individual teeth were recorded in 7.6% (n=8) of cases.

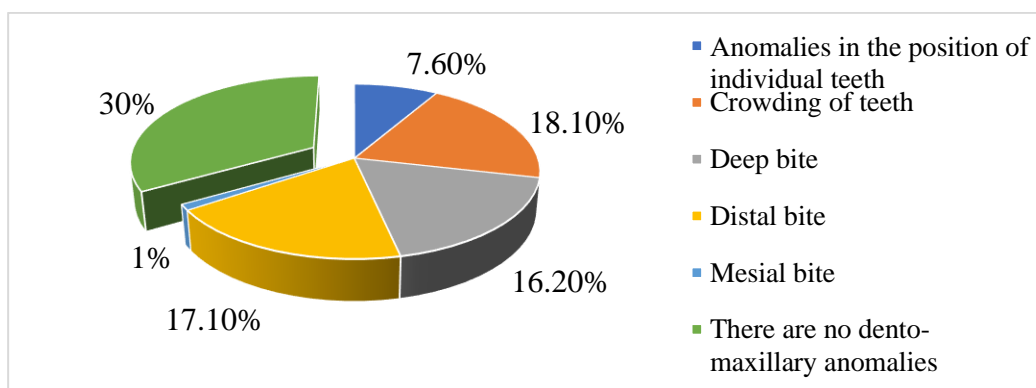


Figure 3. Prevalence of various types of dento-maxillofacial anomalies in children and adolescents aged 12-17 year

The second place in terms of frequency was occupied by carious lesions of the teeth dangerous to periodontal health and poor-quality restorations localised on the proximal surfaces. They were observed in 37.1% (n=39) of children and adolescents. The proportion of people with active carious cavities was 24.7% (n=26), and with poor-quality restorations - 12.4% (n=13).

We analysed the participants' behaviour in terms of compliance with the rules of individual oral hygiene. About half of them brushed their teeth regularly twice a day - 45.7% (n=48). The majority of the surveyed used hygiene procedures once a day - 54.3% (n=57). Only 9.5% (n=10) used interdental hygiene products. This indicates the absence of formed hygiene skills in the vast majority of children

and adolescents examined, which is confirmed by the unsatisfactory level of oral hygiene care.

Discussion

The study revealed a high prevalence (89.8%) of gingivitis associated with dental biofilm in children and adolescents aged 12-17 years. Similar data were obtained by other teams of authors. The frequency of diagnosis of inflammatory gum disease among children in Bulgaria was 88%,²⁷ in Romania - 91%,¹¹ and in Brazil - 96.2%.²⁹ The incidence of gingivitis in children and adolescents in Greece (70%)⁸ and Poland (37.4%)²² was lower. According to a national study, the prevalence of gingival bleeding in 15-year-olds was 61% in China.⁵ Other authors in some provinces of China diagnosed gingivitis in 28.5%-29.6% of children and adolescents.^{9,20} The results of epidemiological surveys conducted in different states of India demonstrated significant differences in the prevalence of gingival inflammation in children and adolescents - 99.6%²⁴ and 20%.²⁶

According to the literature, the prevalence of gingivitis in children and adolescents in different countries has been fluctuating significantly over the past decade. Differences in the prevalence of gingivitis may be due to the use of indices that differ in methodology and assessment criteria. These discrepancies may also arise as a result of examination of the periodontal status of children both in the period of a variable and formed permanent bite.

Our statistical analysis did not reveal any significant differences in the prevalence of gingivitis in different age groups of participants with a permanent bite. This statement is in line with the results of the study by Palak et al.²⁴ regarding the absence of a significant relationship between gingivitis and age in children aged 6-12 years. Other authors, on the contrary, have observed an effect of age on the frequency of gingivitis in the malocclusion^{20,26} and the permanent bite.^{9,26}

In our opinion, the prevalence of gingivitis is primarily related to the quality of individual hygiene, which depends on the motivation, level of awareness of children and parents about the rules of oral hygiene and acquired hygiene skills. The reason for the discrepancies may also be the different age range of the study participants.

According to the results of the current study, the accumulation of microbial biofilm due to unsatisfactory individual oral hygiene is the leading etiological factor in gingivitis. This is confirmed by the presence of a significant relationship between the values of the OHI-S and BPE-S indices ($p < 0.01$). The overwhelming majority of published studies^{2,9,13,20,22,24,29} show that poor hygiene is a high-risk factor for the development of periodontal disease in children and adolescents.

An important cause of the appearance and progression of periodontal diseases is dental calculus, which is formed by the deposition of calcium phosphate crystals on the organic matrix of the biofilm. Its surface is an ideal environment for the accumulation of unmineralized bacterial biofilm, which poses a threat to the integrity of the dental attachment and periodontal tissues.¹ Similar to other studies,^{5,9,13,20} we also showed the negative impact of tartar on the periodontal state in children and adolescents. This observation was confirmed by the presence of a significant correlation between the number of sextants with dental calculus and gingival bleeding ($p < 0.05$).

A distinctive feature of our study is the analysis of indicators of hygiene and periodontal status in two different nosological forms of inflammatory process in the gums: gingivitis associated with dental biofilm only, and gingivitis caused by dental biofilm and local risk factors. In the presence of unfavourable local factors, a significantly lower median number of healthy periodontal segments was found against the background of a significant decrease in the values of the OHI-S hygiene index. The obtaining data convincingly confirmed the negative impact of local risk factors on periodontal health due to the accumulation and mineralisation of microbial biofilm.²⁸

The advantage of our study is the assessment of the combined influence of local risk factors on the state of periodontal tissues. In children with only one of the local risk factors studied, the median number of healthy segments was significantly higher, in contrast to participants with two or more negative factors.

According to the data obtained, the most common local risk factors for gingivitis in children and adolescents include dentoalveolar anomalies. Engle class I occlusion, crowding of teeth, prognathia and

deep bite according to Calvelis were most often observed. The high incidence of inflammatory process in the gums in children and adolescents with dentoalveolar anomalies has been confirmed by many studies.^{2,13,20,26,27} However, the data on the proportion of different types of occlusal disorders differ. There is a high prevalence of gingivitis in the setting of Engle class I anomalies,¹³ crowded position of teeth distal,^{20,26} medial²⁶ and deep bite.²⁷ Published studies confirm that the vast majority of dentoalveolar anomalies contribute to the development of periodontal diseases. Prolonged functional overload of certain groups of teeth can lead to recession of the gingival mucosa, impaired gingival attachment and alveolar bone resorption.¹⁵

According to our data, the proportion of children and adolescents with carious dental lesions and poor-quality restorations of proximal localisation was 24.7% and 12.4%, respectively. Such a localisation is dangerous for periodontal health, as it promotes the accumulation of dental biofilm directly at the gingival margin. Similar results are reported in publications by other authors.^{13,21,27} A high frequency of carious cavities (59%) and filled teeth (32%), which represent a risk to periodontal tissues in children aged 10-14 years, was reported by Tankova et al.²⁷ The reason for such differences may be different study subjects. Fan et al.⁹ did not observe the influence of dental caries on the development of gingivitis in children and adolescents. These discrepancies may be related to the consideration of different classes of carious cavities in the studies.

The current study revealed an unsatisfactory state of oral hygiene in all participants. This is due to irregular oral hygiene care and the absence of interdental hygiene in the vast majority of children and adolescents. Our observations on the negative impact of poor personal hygiene on periodontal health are consistent with the results of similar studies.^{8,22,26} According to other authors, regular hygiene procedures have a positive effect on the condition of the gingival mucosa^{20,27} and contribute to the preservation of periodontal health.⁷ Therefore,

the priority task of periodontology in childhood should be to eliminate microbial biofilm and control its formation through adequate individual oral hygiene and regular professional care.

Conclusion

The prevalent form of inflammatory periodontal diseases in children and adolescents aged 12 to 17 years was gingivitis associated with dental biofilm and local risk factors. A significant deterioration in periodontal condition was recorded in the presence of unfavourable local factors. The worst periodontal status indicators were observed in cases of combined exposure to local risk factors. Significant prognostic criteria for gingivitis include the accumulation of bacterial biofilm and dental calculus, crowding of teeth, distal and deep bite, carious cavities and poor-quality proximal restorations, and inadequate oral hygiene care. The high prevalence of gingivitis against the background of the negative impact of local risk factors justifies the need for priority implementation of primary prevention measures for periodontal diseases in children and adolescents.

Declarations

Conflicts of interest and financial disclosures

The author declares that he has no conflict percent and there was no external source of funding for the research in question.

Ethical approval

The study was approved by the University ethics committee and was conducted in accordance with the Declaration of the World Medical Association.

Source of funding

This research received no external funding.

Data Availability Statement

Not applicable.

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ԵՐԵԽԱՆԵՐԻ և ԳԵՌԱՀԱՍՆԵՐԻ ՊԱՐՕԴՈՆՏԱԿ ՀԻՎԱՆԳՈՒԹՅՈՒՆՆԵՐԻ ՉԱՐԳԱՑՄԱՆ ՏԵՂԱՅԻՆ ՌԻՍԿ ԳՈՐԾՈՆՆԵՐԸ

Իննա Գոլուբևա,¹ Յուլիա Կոլենկո,² Լարիսա Խոմենկո,³ Օլենա Օստապկո,³ Սեմենովա Ի.,⁴ Վորոնինա Ի.⁴

1. Մանկական թերապևտիկ ստոմատոլոգիայի ամբիոնի և ստոմատոլոգիական հիվանդությունների կանխարգելման ամբիոնի դոցենտ, Բոգոմոլեց ազգային բժշկական համալսարան, Կիև, Ուկրաինա
2. պրոֆեսոր, թերապևտիկ ստոմատոլոգիայի ամբիոնի վարիչ, Բոգոմոլեց ազգային բժշկական Համալսարան, Կիև, Ուկրաինա
3. Մանկական թերապևտիկ ստոմատոլոգիայի և ստոմատոլոգիական հիվանդությունների կանխարգելման ամբիոնի պրոֆեսոր, Բոգոմոլեց ազգային բժշկական համալսարան, Կիև, Ուկրաինա
4. թերապևտիկ ստոմատոլոգիայի ամբիոնի ասիստենտ, Բոգոմոլեց ազգային բժշկական համալսարան, Կիև, Ուկրաինա

Ամփոփում

Նպատակ. Գնահատել ատամնափառի հետ կապված գինգիվիտի տարածվածությունը և ուսումնասիրել տեղային ռիսկի գործոնների ազդեցությունը երեխաների և դեռահասների լոդերում բորբոքային

գործընթացի զարգացման վրա:

Նյութեր և մեթոդներ. Բոզոմոլեց ազգային բժշկական համալսարանի ստոմատոլոգիական կենտրոնում հետազոտվել են 12-ից 17 տարեկան 117 երեխաներ և դեռահասներ: Բոլոր մասնակիցները հետազոտվել են պարոդոնտի կարգավիճակի, բերանի խոռոչի հիգիենայի վիճակի և պարոդոնտի հիվանդությունների համար տեղային ռիսկի գործոնների համար:

Արդյունքներ. 12-17 տարեկան երեխաների և դեռահասների մոտ հայտնաբերվել է գինգիվիտի բարձր տարածվածություն՝ կապված ատամնափառի հետ (89.7%): Նրանց ճնշող մեծամասնությունը (71,4%) ունեցել է գինգիվիտ՝ կապված ատամնափառի հետ և տեղային ռիսկի գործոններով: Առանձին կարիեսային ախտահարումների և անոմալիաների տարածվածությունը կազմել է 60%: Մասնակիցների 37.1%-ի մոտ հայտնաբերվել են կարիոզներ և անորակ պրոքսիմալ վերականգնումներ: Բերանի խոռոչի անհատական հիգիենիկ խնամքի կանոնների խախտումներ են նկատվել հիվանդների 54,3%-ի մոտ:

Եզրակացություն. Տեղային ռիսկի գործոնները հանգեցնում են պարոդոնտի առողջության զգալի վատթարացման մանկության և պատանեկության շրջանում, հատկապես դրանց համակցված անբարենպաստ հետևանքների դեպքում: Գինգիվիտի նշանակալի կանխագուշակող գործոններն են՝ բերանի խոռոչի վատ հիգիենա, ատամնաավելոյային անոմալիաներ, կարիեսային խոռոչներ և պրոքսիմալ վերականգնումներ, ատամների անկանոն խոզանակի և միջատամների վատ հիգիենայի պատճառով մանրէաբանական բիոֆիլմի և ատամնաքարերի կուտակումը: Գինգիվիտի բարձր տարածվածությունը պահանջում է երեխաների և դեռահասների մոտ պարոդոնտալ բորբոքային հիվանդությունների առաջնային կանխարգելման առաջնահերթ զարգացում:

МЕСТНЫЕ ФАКТОРЫ РИСКА РАЗВИТИЯ ЗАБОЛЕВАНИЙ ПАРОДОНТА У ДЕТЕЙ И ПОДРОСТКОВ

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Абстракт

Цель: Оценить распространенность гингивита, ассоциированного с зубной биопленкой и изучить влияние местных факторов риска на развитие воспалительного процесса в слизистой оболочке десны у детей и подростков.

Материалы и методы: Обследовано 117 детей и подростков в возрасте от 12 до 17 лет в Стоматологическом медицинском центре Национального медицинского университета имени А.А. Богомольца. Все участники были обследованы на предмет периодонтального статуса, состояния гигиены полости рта и местных факторов риска заболеваний периодонта.

Результаты: Высокая распространенность гингивита, ассоциированного с зубной биопленкой (89,7%), выявлена у детей и подростков в возрасте 12-17 лет. У подавляющего большинства из них (71,4%) имелся гингивит, вызванный дентальной биопленкой и местными факторами риска. Распространенность аномалий прикуса и аномалий отдельных зубов составила 60%. Кариозные поражения зубов и некачественные проксимальные реставрации выявлены у 37,1% участников. Нарушения правил индивидуального

гигиенического ухода за полостью рта наблюдались у 54,3% пациентов.

Заключение: Местные факторы риска приводят к значительному ухудшению состояния периодонта в детском и подростковом возрасте, особенно при их сочетанном неблагоприятном воздействии. К значимым предикторам гингивита относятся накопление микробной биопленки и зубного камня вследствие неудовлетворительной гигиены полости рта, зубочелюстные аномалии, кариозные полости и некачественные реставрации проксимальной локализации, нерегулярная чистка зубов и низкий уровень интердентальной гигиены. Высокая распространенность гингивита обуславливает необходимость приоритетного развития первичной профилактики воспалительных заболеваний периодонта у детей и подростков.