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# EVALUATION INDEX OF PERIODONTAL TISSUES CONDITION IN TEENAGERS WITH CHRONIC GASTRITIS

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**Summary:** The results of dental examination of 108 children with chronic gastritis, at the age of 12-17 years (main group) and 83 of the same age without concomitant somatic pathology, patients with chronic catarrhal gingivitis (comparative group). The results of the studies found that PMA index and the index of gingival hemorrhage in children of the main group obtained higher indicators in all age ranges relative to the comparison group, which may be caused by a child physical illness.

**Key words:** chronic gastritis, chronic catarrhal gingivitis, periodontal indices.

**Introduction.** Periodontal disease is one of unresolved problems of the modern pediatric dentistry taking into account wide prevalence and harmful impact of this disease on the body. In Ukraine, the prevalence of inflammatory periodontal diseases ranges from 75% to 90%. The most often defeats of the periodontal tissues in child's are diagnosed on the background of somatic pathology. Widespread, loss of teeth at a young age, adverse effects of periodontal infection on the body defined medical and social importance of unresolved aspects. There are numerous data that 50-100% of periodontal pathology consistent with the pathology of internal organs [2,4,5].

It is believed that changes in periodontal caused by a single inflammation genesis process involving simultaneous of the mouth and digestive tract, which occurs primarily via proteolytic enzymes. That's why for clinicians it is often difficult to establish the primacy of the lesion gastro - intestinal tract or periodontal disease. When these pathological processes are combined it's characterized mutually aggravating occurrence of diseases due to the presence of close functional connection between them [1,6,9].

However, only a few research available that focus on the unity of systemic pathogenic mechanisms that are directly or indirectly involved in the development of periodontal tissue damage associated with the diseases of internal organs. That is why, the problem of finding alternative ways to treat and prevent chronic catarrhal gingivitis in adolescents with chronic gastritis presents scientific and practical interest that determines the relevance of this study. As shows clinical experience in patients with chronic gastritis and duodenitis found growing intensity of caries complications of gingivitis, growth indicators of periodontal indices [7,8,10].

The **purpose** of this research is to study the intensity of chronic catarrhal gingivitis (CCG) in children who have chronic gastritis with using the periodontal indices.

**Materials and methods.** The clinical study with the definition of general health, diagnosis of dental status in 103 persons with chronic gastritis (the main group) aged 12-17 years and 87 persons of the same age, without concomitant somatic diseases (comparative group) was conducted.

A thorough dental examination with using

generally accepted clinical methods with capillary- marginally-alveolar index (PMA) and the index of bleeding gums during interrogation (Mulleman, Cowl, 1972) was carried out [3].

The data are worked out statistically with using the program software Statistica 7.0 (StatSoft Inc.).

**Results and discussion.** To understand the intensity of inflammation in periodontal tissues were analyzed PMA index data depending on age examined (table 1). 12-14 years old children, patients with chronic gastritis, PMA index was (38,31 ± 4,68%) and characterized as medium severity gingivitis, and mentioned indicator was 1.8 times less than the corresponding values in the comparative group of individuals (21,25 ± 4,35)%, p <0.01) in which the index PMA characterized as mild degree gingivitis.

In the age range 15-17 years, teenagers of main group, the value of PMA (48,75 ± 4,81)% characterized as medium severity gingivitis and was 1.27 times higher in the PMA data in children 12-14 years of the same group. The value of PMA in patients from comparative group (34,16 ± 4,87)% was 1.4 times less than the same indicator in the examined main group (p> 0.05).

**Table 1**

Indicators of PMA Index (%) in children, depending on age.

| Age, in years | Main group (n = 103) | Comparative group (n = 87) |
|---|---|---|
| 12-14 | 38,31±4,68 p<0,01 | 21,25±4,35 p<0,01 |
| 15-17 | 48,75±4,81 p>0,05 | 34,16± 4,87 p<0,01 |
| average value | 43,51±4,74 p<0,05 | 27,71±4,61 p<0,01 |

Thus, the average value of the index PMA in children with chronic gastritis (43,51 ± 4,74)%, was 1.6 times more than in the comparative group of persons (27,71 ± 4,61) %, p <0.05).Results of the dynamic study of values PMA depending on age and severity of chronic catarrhal gingivitis (CCG) showed that main group children aged 12-14 years with mild severity of chronic catarrhal gingivitis index PMA equal (24,15 ± 4,21)%, which was 1.4 times more of the data their peers in the comparison group (17,32 ± 4,02)%, p> 0.05). In medium severity CCG in this age group value of PMA in children from main group was (39,18 ± 4,69)%, which was 1.6 times more than the value in the comparison group (24,12 ± 4,69) , p <0.05). In severe degree CCG in this age group values of PMA in main group of people equal (54,60 ± 4,79)%.

In 15-17-year-olds teenagers from the main group mild severity CCG index of PMA amounted (24,95 ± 4,39)%, which was 1.5 times more than similar values in children comparative groups (p> 0.05). Medium degree of severity of CCG in adolescents this age group values of PMA (48,14 ± 4,80)% was 1.4 times higher in children from comparison group (34,15 ± 5,20)%, p <0, 05). In severe degree of CCG in 15-17-year-olds main group examined values of PMA exceeding 1.4 times relative to comparative data group (65,48 ± 4,57)% against (48,05 ± 5,48)%, p <0.05). Thus, the average index of PMA depending on the severity of CCG in main group was higher due to comparative data groups: mild severity CCG - 1.3 times ((24.55)% against (18.34)%, respectively); with medium severity CCG - 1.5 times ((43.66)% against (29.13)%) and in severe degree CCG - 1.2 times ((60.0)% versus (48.05)% ). (figure 1)

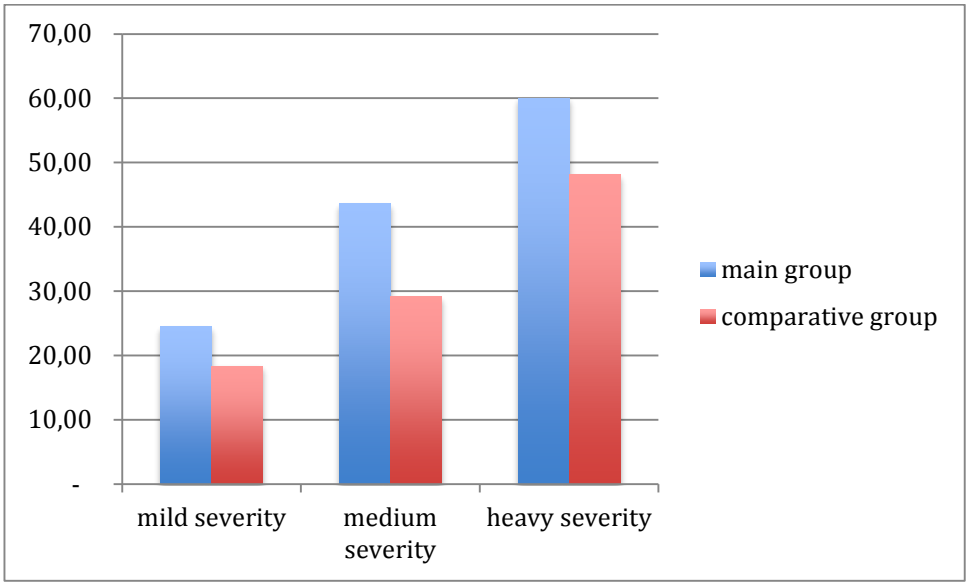


**Figure 1.** Average value of PMA index depending on the severity of CCG in research groups

Evaluation of information the intensity of bleeding gums in children showed that main group people aged 12-14 years with mild gingivitis, bleeding index was equal to (1,27 ± 0,014) points, which was 2.0 times higher than in the corresponding values in the comparative group ((0,61 ± 0,014) points, p <0.01). In a medium severity in children of the main group bleeding index was (1,82 ± 0,013) points, which exceeded the similar value in the comparative group ((1,42 ± 0,015) points, p <0.01) by 1.3 times. In heavy severity of CCG the index bleeding was (2,47 ± 0,014) points. In mild severity of CCG in children of the main group aged 15-17 years the index bleeding exceeded the similar value in the compative group 1.6 times ((1,68 ± 0,012) points against (1,08 ± 0,016) points, respectively, p <0.01). In a medium severity CCG in this age interval the index bleeding with a value of (2,09 ± 0,013) points higher than the corresponding value in the comparative group (1,82 ± 0,015) by 1.2 points (p <0.01). In heavy severity CCG examined the degree of the index bleeding excess value in teens of the main group 1.3 times relative to relevant data in their peers in the comparison group ((2,94 ± 0,014) points against (2,27 ± 0,015) points, respectively, p <0.01).

Thus, on average, children with CCG patients with chronic gastritis, determined index bleeding gums increase 1.5 times relative to the data obtained in children with CCG without systemic diseases (Table 2).

**Table 2**

Indicators of bleeding index in children, depending on age and severity of CCG

| Severity of CCG | Main group (n = 103) | | Comparative group (n = 87) | |
|---|---|---|---|---|
| | 12-14 years | 15-17 years | 12-14 years | 15-17 years |
| Mild | 1,27±0,014 p | 1,68±0,012 p | 0,61±0,014 | 1,08±0,015 |
| Medium | 1,82±0,013 p | 2,09±0,013 p | 1,43±0,014 | 1,82±0,015 |
| Heavy | 2,47±0,014 p | 2,94±0,014 p | - | 2,26±0,015 |
| average value | 1,85±0,13 p | 2,24±0,013 p | 1,02±0,014 | 1,72±0,015 |

According to Fig. 2, established that children and adolescents of the main group with mild CCG bleeding index was 1.8 times higher comparative group ((1.53) points against (0.85)) points; at medium severity CCG - 1.2 times higher than the corresponding values of the comparative group ((1.98) points against (1.63) points) and in heavy degree CCG - 1.2 times ((2.69) points against (2.26) points) respectively.

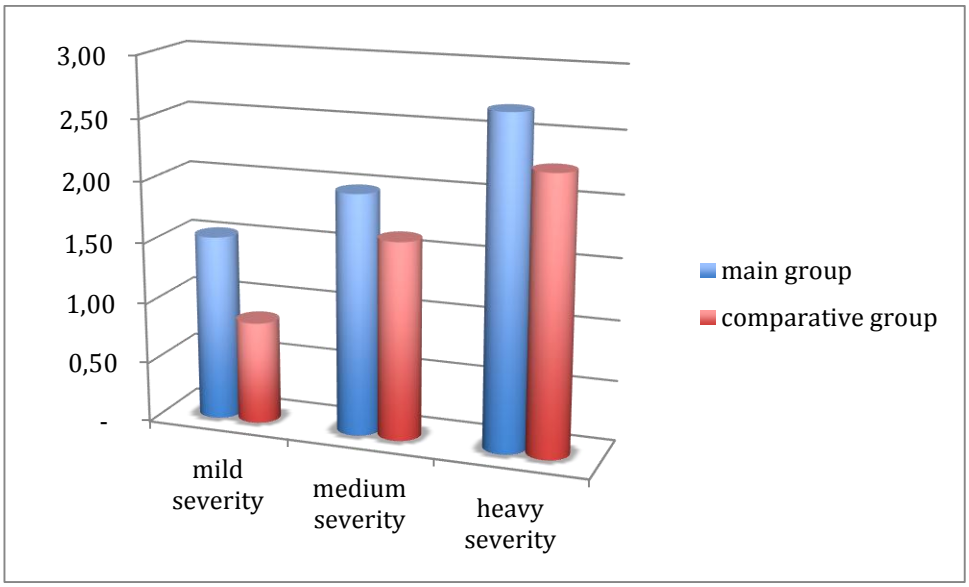


**Figure 2.** Average value of bleeding index depending on the severity of CCG

**Conclusions.** Children with cerebral palsy demonstrated the intensity of inflammation in the periodontal tissues after the PMA index was in 1.6 times higher relatively to the obtained data in somatically healthy children with CCG. With the age, the value of these indices increased in both groups of comparison, however for children and adolescents with chronic gastritis, this process was more pronounced, which probably can be caused by the presence of somatic disease in this group of patients.

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