



ISSN: 2277- 7695

TPI 2014; 3(6): 46-47

© 2013 TPI

www.thepharmajournal.com

Received: 01-07-2014

Accepted: 14-07-2014

**Yu.B. Bodnaruk**

Department of Pediatric Dentistry of  
postgraduate education, Ivano-  
Frankivsk National Medical  
University, Ivano-Frankivsk,  
Ukraine.

**M.M. Rozhko**

Department of Pediatric Dentistry of  
postgraduate education, Ivano-  
Frankivsk National Medical  
University, Ivano-Frankivsk,  
Ukraine.

**Correspondence:**

**Yu.B. Bodnaruk**

Department of Pediatric Dentistry  
of postgraduate education, Ivano-  
Frankivsk National Medical  
University, Ivano-Frankivsk,  
Ukraine.

## The state of periodontal tissues in children with infantile cerebral paralysis

**Yu.B. Bodnaruk, M.M. Rozhko**

### Abstract

The results of estimation of the state of periodontal tissues in children with cerebral paralysis compared with children without concomitant somatic diseases are given in the article. In a study the estimation of periodontal (PMA, CPI) and hygiene (OHI-S) indices, whose data in children with cerebral paralysis exceeded the similar indicators in persons with periodontal disease without concomitant somatic diseases were done.

**Keywords:** Infantile cerebral paralysis, Chronic catarrhal gingivitis, Paraclinical indices.

### 1. Introduction

The problem of periodontal pathology in children is caused by both wide prevalence of the disease and that fact that ill-timed treatment in child's and juvenile age, results then to the irreversible defeats of periodontal tissues in adults [1, 3, 5, 7]. After data of the WHO experts the separate signs or all complex of inflammation in the parodont are diagnosed in 80 % of the child's population.

For today the bank of data of relatively epidemiology descriptions of the prevalence of periodontal disease that testify to proceeding their increase is accumulated for children.

It should be emphasized that gingivitis in children is an independent nosology unit, therefore the etiology and pathogenesis of the disease must be interpreted from the perspective of age and a functional state of the organism [2, 4, 6]. On the other hand, it is considered that gingivitis is an initial stage of inflammatory periodontal disease and more often it is diagnosed in children [1, 2, 6].

The modern conception of the pathogenesis of gingivitis is regarded as a balanced biological system, in which violation of balance there is a pathological process, and first of all, it is a violation of the ratio of "microbial agents – protective mechanisms" [2, 4, 7].

Looking at starting mechanisms of the inflammatory process in gums, account must be taken the state of the general systems of the organism in maintenance of homeostasis. This is especially actual during puberty, when there is a restructuring of the organism, that causes a stream of sympathetic impulses to different bodies and systems [2, 5].

One of the important pathogenesis factors, which stipulates the development of destructive changes in the periodontal tissues, there is the unsatisfactory hygienic state of the oral cavity, which promotes the accumulation of tooth deposits. When there is insufficient hygienic care of teeth, the intensity of tooth deposits correlates with changes of the state of parodont [4, 6].

Because of the functional impairment of the endocrine, immune and other systems, the child's adaptive possibilities are reduced, that makes them the primary defeat under the action of exogenous and endogenous factors [1, 2, 3]. The works of many researchers shows that the prevalence of dental morbidity is depending on the general health of children, which is considered as the main endogenous factor in the development of periodontal disease [3, 6, 7].

Therefore, the purpose of this research was a deep study of the features of the state of periodontal tissues in children with infantile cerebral paralysis.

### 2. Materials and methods

In accordance with the put tasks, the estimation of the state of periodontal tissues in 108 children with cerebral paralysis aged 12-17 and 83 of the same age without somatic diseases were examined. The indices of the state of periodontal tissues (PMA, CPI) and the state of hygiene of the oral cavity (Green-Vermillion index, OHI-S (1964)) were taken into account in the analysis. The obtained data were processed with using statistical programs.

### 3. Results of the investigation and their discussion

As a result of inspection 108 children with infantile cerebral paralysis (the main group), it is established that the mean value of the PMA index in the examined was  $(43.88 \pm 4.75)$  %, that was in 1.6 times higher relatively to the obtained data in children without somatic diseases (the comparison group) –  $(27.25 \pm 4.81)$  %. It should be noted that the prevalence of CCG of easy degree was on the average diagnosed in children of the main group in  $(12.96)$  % of the examined relatively to  $(16.86)$  % in the comparison group, but the mean value of the PMA index in children of the main group increased the similar data in the comparison group in 1.5 times ( $(27.94)$  % against  $(18.34)$  %,  $p < 0.05$ ). Chronic catarrhal gingivitis of the middle degree of weight was objectived in children of the main group in  $(28.51)$  % of cases, that was in 2.2 timer more relatively to the data of the PMA in children of the comparison group  $(13.25)$  %, while the mean value of the PMA in children with cerebral paralysis was in 1.5 times higher relatively to the obtained data in the group of comparison  $(43.66)$  % against  $(29.13)$  %.

The CCG of heavy degree of weight in children of the main group was diagnosed in  $(22.42)$  % of cases at the value of PMA  $(60.0)$  %, while this nosological unit was  $(1.81)$  % in the comparison group at the data of PMA  $(48.05)$  %.

The percentage of healthy sextants in children of the main group was revealed in  $(16.97)$  % of cases, that was  $(1.0 \pm 0.16)$  of the sextant on average on one examined. The intact parodont in the comparison group was diagnosed in  $(76.48)$  % of cases, representing  $(2.75 \pm 0.22)$  of the sextant. An amount of the sextants with bleeding in children of the main group was in 1.3 more relatively to the similar values in children of the comparison group ( $(3.10 \pm 0.22)$  against  $(2.31 \pm 0.21)$ , respectively), while the component of the CPI index "above - and a subgingival dental calculus" was diagnosed in a basic group in 2.0 times more often, than in the examined of comparison group ( $(1.90 \pm 0.15)$  against  $(0.94 \pm 0.11)$ , respectively).

The analysis of values of the OHI-S hygienic index showed that in children with infantile cerebral paralysis "good" and "satisfactory" hygiene of the oral cavity was noted in  $(28.7)$  % of the examined, while in comparison this index was in 2.5 times more  $(72.29)$  %. In the same time, "unsatisfactory" and "bad" hygiene of the oral cavity was determined in  $(71.29)$  % of children in the main group against  $(27.7)$  % of children in the comparison group, that was in 2.6 times more.

**Table 1:** The state of periodontal tissues and hygiene of the oral cavity in children of study groups

| Indicators   | Main group (n=108) |            | Comparison group (n=83) |            |
|--|--------------------|------------|-------------------------|------------|
|  | Abs. number        | %          | Abs. number             | %          |
| PMA index  | 43.88±4.75         |            | 27.25±4.81              |            |
| Prevalence of CCG  |                    |            |                         |            |
| easy degree  | 28                 | 12.96±3.73 | 28                      | 16.86±3.67 |
| middle degree  | 40                 | 28.51±3.23 | 22                      | 13.25±3.25 |
| heavy degree   | 31                 | 22.42±2.78 | 3                       | 1.81±0.80  |
| Mean value of the PMA index of different degrees of weight (%) |                    |            |                         |            |
| easy degree  | 27.94±4.23         |            | 18.34±4.06              |            |
| middle degree  | 43.66±4.69         |            | 29.13±4.69              |            |
| heavy degree   | 60.0±4.79          |            | 48.05±5.48              |            |
| The CPI index  |                    |            |                         |            |
| healthy sextants   | 16.97              |            | 76.48                   |            |
| sextants with bleeding   | 3.10±0.22          |            | 2.31±0.21               |            |
| sextants with dental calculus                                  | 1.90±0.15          |            | 0.94±0.11               |            |
| percentage of healthy sextants                                 | 1.0±0.16           |            | 2.75±0.22               |            |
| The OHI-S index  |                    |            |                         |            |
| good   | 8.33±2.66          |            | 46.99±5.47              |            |
| satisfactory   | 20.37±3.87         |            | 25.30±4.77              |            |
| unsatisfactory   | 27.77±4.31         |            | 18.07±4.22              |            |
| bad  | 43.52±4.77         |            | 9.63±3.23               |            |

### 4. Conclusions

Thus, a large prevalence of CCG at the predominance of middle and heavy form in a result of dental examination of the children of the main group was surveyed, and the intensification of inflammatory processes in parodont was caused by the higher the PMA and CPI indices at the unsatisfactory hygiene of the oral cavity. Most likely, these processes can be explained by interdependency influence of somatic pathology, which aggravates the flow of inflammatory diseases in periodontal tissues at this contingent of children.

### 5. References

1. Bezvushko EV, Klimchuk MA. The impact of environmental pollution on the dental morbidity in children. Environment and health. 2006; 2:65-68.
2. Beloklitskaya GF, Gorban AS. The value of individual hygiene of the oral cavity during the primary periodontic

treatment of patients with generalized parodontitis. Modern dentistry. 2008; 4:49-52.

3. Tchaikovskaya GS, Hnateyko AS, Moscovyak NV. Some markers of diagnosis of the health of children of the primary school age. Pediatrics, obstetrics and gynecology. 2010; 5:49-51.
4. Zagainova NN. The correlation between the intensity of caries, the state of periodontal tissues and hygiene of the oral cavity in children. Journal of dentistry. 2007; 2:51-53.
5. Zerbino DD. Environmental diseases: the statement of a problem. The art of treatment. 2009; 1:65-68.
6. Kaskova LF, Chepelya AV. The impact of antenatal and postnatal risk factors on indicators of caries of a temporary teeth. Ukrainian dental Almanac. 2009, 5:42-46.
7. Casamassimo P. The relationships between oral and systemic health. Pediatric Clinics of North America. 2003, 47, 1149-1157.