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IMPROVEMENT IN THE DIAGNOSIS OF CHRONIC PERIODONTITIS IN CHILDREN

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Abstract:
The clinical development of periodontitis in children differs significantly from the similar pathological process in adults. This distinction arises due to the occurrence of these processes in morphologically and functionally immature tissues, which can exhibit an inadequate response to causal factors.As a result, children are more prone to developing severe forms of periodontitis compared to adults, despite the overall lower prevalence of destructive periodontitis. In fact, chronic periodontitis is responsible for acute inflammatory processes of the maxillofacial region (such as abscess, phlegmon, and lymphadenitis) in 85-98% of cases, and it can also contribute to systemic and other dental diseases.

Keywords: Incidence and discriminant models of chronic periodontitis in children.

RELEVANCE:

The clinical development of periodontitis in children differs significantly from a similar pathological process in adults. This distinction arises due to the course of these processes in morphologically and functionally immature tissues, which are capable of an inadequate response to causative factors [2]. As a result, children are more prone to developing severe forms of periodontitis, despite the lower prevalence of destructive periodontitis compared to adults [2]. Generalized and localized periodontitis in children typically begins in the prepubertal and juvenile age [17]. Chronic periodontitis is responsible for acute inflammatory processes in the maxillofacial region, such as abscess, phlegmon, and lymphadenitis. It also serves as a manifestation of systemic and other dental diseases [13, 14].

However, there is a lack of systematization regarding the relationship between chronic periodontitis in primary and permanent dentition and other inflammatory pathologies that contribute to the development of systemic and other dental diseases [14]. Multivariate mathematical analysis in this context has been limited or nonexistent. This lack of studies hinders the ability to predict the prevalence of chronic periodontitis in children, particularly at the territorial level, and to carry out proactive diagnostic examinations and implement therapeutic and preventive measures [14].In summary, further research and multivariate mathematical analysis are needed to better understand the clinical development of periodontitis in children and to improve prediction, diagnosis, and treatment strategies for this condition in pediatric patients

MATERIALS AND METHODS

The algorithm developed to study the incidence and interrelationships of chronic periodontitis in childhood is a valuable tool for understanding the prevalence and connections of this condition among children. The study conducted for the years 2023-2024 utilized official statistical data from the Department of Social Protection and Health Care of Samarkand.The statistical analysis included a total of 170 cases of chronic periodontitis in temporary and permanent dentition among the child population. Additionally, 84 cases of other dental diseases were considered in the analysis, providing a comprehensive overview of dental morbidity among children during the specified period. The correlation method was employed to examine the relationships between chronic periodontitis and other dental pathologies in children. This method measures the closeness and degree of association between different variables and determines the form and direction of the existing relationship between them [1, 7].

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By applying the correlation method, the study observed both direct and inverse correlation relationships when assessing the association between the incidence of chronic periodontitis and other dental morbidity in children. These findings contribute to a better understanding of the interrelationships between chronic periodontitis and other dental diseases in childhood. The algorithm and statistical analysis provide valuable insights for developing preventive and therapeutic measures, as well as predicting the prevalence of chronic periodontitis among children in Samarkand.

RESULTS AND DISCUSSION

Diagnostic assessment of individual oral hygiene on the basis of appropriate indices in children with chronic periodontitis based on the relevant indices in children suffering from chronic periodontitis revealed a worse condition compared to the control group . Thus, the ONI-S in the main group had an unhappy condition with significant differences. favourable condition with a significant difference in relation to the control ($P<0.001$). PMA index among patients with chronic periodontitis was significantly higher than in the control group, which unambiguously indicates a poor state of oral hygiene. Similar is characteristic for the index PI and cariesogenicity of dental plaque. Particularly significant differences are noted for cariesogenicity of dental plaque. plaque cariesogenicity, the value of which in children with chronic periodontitis is several times higher in the main group ($P<0.0.1$).

Hygiene index name	Main group	Control group
OHI-S, %	2,5±0,01	0,8±0,02
PMA, %	48,6±0,7	9,2±0,4
PI, %	1,3±0,02	0,7±0,01
Dental plaque cariesogenicity %	82,5±0,8	9,3±0,2

In the main group of children with chronic periodontitis, the frequency of unsatisfactory hygiene indices is higher compared to other groups, as indicated in Table 1. Statistically significant differences were observed for all indices.Specifically, the RMA index, which reflects the unsatisfactory state of oral hygiene, was found to be most frequently unsatisfactory in children with chronic periodontitis. Similarly, the PMA index, OHI-S (Oral Hygiene Index-Simplified), and PI (Plaque Index) also showed a high proportion of unsatisfactory results in this group.Furthermore, it was noted that more than half of the examined patients exhibited a high cariesogenicity of dental plaque. This indicates an increased risk of dental caries development in these individuals.These findings highlight the importance of addressing oral hygiene practices and promoting effective plaque control measures in children with chronic periodontitis. Improving oral hygiene can contribute to the prevention and management of periodontal diseases and reduce the risk of dental caries. Mathematical models developed according to the most informative indices of individual oral hygiene of oral hygiene, provide a high quality classification of first and second class bio-objects. The proportion of children with chronic periodontitis incorrectly classified as practically healthy is 12.5%. The proportion of children in the practically healthy class is 12.3%. In the classification of practically healthy children, the number of children with chronic periodontitis wrongly classified in the class of practically healthy children is In the classification of practically healthy children, 12.5% of patients with chronic periodontitis were wrongly included in the group of patients with chronic periodontitis. Results The results show that the developed discriminant models can be effectively implemented in the diagnostic process for the detection of chronic periodontitis in a paediatric cohort the diagnostic process for chronic periodontitis in a paediatric cohort

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