

INDICATIONS FOR THE SPREAD OF CARIES IN CHILDREN WITH DENTAL ANOMALIES IN THE BUKHARA REGION

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Abstract:

The intensity of tooth decay depended on the nature and type of deformation of the dental system and a disorder of chewing food. Objective: determine the intensity and prevalence of permanent dental caries in children with tooth deformities in different age periods. 146 children aged 6-9 years in schools in the Bukhara region were surveyed. Revealed that the prevalence of tooth decay in children at this age is an average of 53.8%; the most significant increase in caries prevalence falls at the age of 6 to 7 years which characterized localization on molars due to specific pathogenetic mechanisms. Children aged 6-9 years had a low level of resistance to molar enamel, and therefore, caries is very common in this group of teeth; no significant differences in the prevalence of permanent tooth decay in children with distal occlusion and children without operational problems in the maxillofacial area; children with distal occlusion were significantly less resistant to permanent tooth enamel than children in the control group. The presented research results can serve as a differential diagnosis for forming health groups in dispensary care of children [1.3.5.7.9.11.13].

Keywords: *children, carious process, dental anomalies, maxillofacial area, enamel resistance, distal occlusion.*

Introduction

Rationale: During the examination of schoolchildren, a reliably higher prevalence of dental caries in case of deformities of the dental system was determined (91%), and a connection between the intensity of caries and dental deformities was established. The index of caries intensity - CFR in schoolchildren with orthodontic pathology was 4.92, reliably exceeding the average value of this index in persons with normal bite - 4.0. The intensity of tooth decay depended on the nature and type of deformation of the dental system and was highest in adolescents with open bite.

Prolonged half-open mouth in such patients inevitably leads to a decrease in salivation, increased

saliva viscosity, which in turn worsens the natural cleanliness of the mouth. Thus, the high incidence and progression of caries in orthodontic patients give grounds to consider deformities of the dental system as a risk factor for this disease. These studies do not analyze the mechanisms of caries development in patients with tooth jaw abnormalities and deformities. The high intensity of dental caries is most often associated with the difficulty of removing the plaque with standard oral hygiene products, which requires additional effort on the part of the patient [2.4.6.8.10].

Study objective: determine the intensity and prevalence of permanent dental caries in children with tooth deformities in different age periods.

Materials and methods. We surveyed 278 children aged 6-9 years in schools in the Bukhara region.

Results. The survey revealed that the prevalence of tooth decay in children at this age is an average of 53.8%. At the same time, at the age of 6 years, the prevalence of caries was 11.1%, at the age of 7 years - 65.2%, at the age of 8 years - 68.2%, at the age of 9 years the prevalence of caries was 71.1% ($r=0.68$; $p<0.001$).

The data shown in fig.1 shows that the most significant increase in caries prevalence falls at the age of 6 to 7 years.

The intensity of caries in children's permanent teeth at early replacement bite was 2.45 ± 0.13 on average. At the same time, the power of dental caries in children aged six years was 0.63 ± 0.04 . In 7-year-old children, the intensity of permanent teeth caries was 2.27 ± 0.09 , in 8-year-old children - 2.67 ± 0.04 , in the 9-year-old group - 3.43 ± 0.15 .

In the age range from 6 to 9 years, caries molars' incidence remains approximately the same ($p>0.01$). A characteristic feature of cavity topography in children in early shift bites is their localization on molars.

The proportion of children with cavities in four molars was 40.11% of all children examined.

This pattern shows that in the early replacement bite period and during tertiary mineralization of teeth, there is a high degree of caries molars infestation due to specific pathogenetic mechanisms.

The resistance of permanent tooth enamel in children aged 6-9 years

We performed an enamel resistance test on both incisors and molars to compare the resistance readings of different groups of teeth.

As a result, it was found that in children with single cavities in permanent teeth, the enamel resistance of the incisors is 3.63 ± 0.16 points, while the resistance of molars is 4.10 ± 0.15 points. Such indices testify to the average degree of enamel resistance.

Children with 3-4 carious defects in permanent teeth had an enamel resistance of 3.78 ± 0.09 points, reflecting the average acid resistance of the enamel, while the resistance of molars was 6.13 ± 0.20 points. However, considering the process of tertiary mineralization and a relatively favorable situation in the oral cavity in such children, their predisposition to caries can be regarded as low.

Enamel resistance test values on incisors in children with four or more cavity caries in permanent teeth were 3.82 ± 0.33 on average, which corresponded to moderate risk of developing tooth decay. The caries resistance of enamel molars in this category of children was meager, at 6.14 ± 0.22 points.

It should be noted that children aged 6-9 years had a low level of resistance to molar enamel, and therefore, caries is very common in this group of teeth.

Intensity and prevalence of dental caries in children with distal occlusion

It compared the intensity and prevalence of temporal and permanent tooth decay in children aged 6-9 with distal occlusion and children without maxillofacial (MFA) functional impairment.

The survey revealed that the prevalence of caries in children with distal occlusion at this age was $54.49 \pm 6.14\%$ on average. In children without functional impairment, the average value was $53.92 \pm 4.18\%$. It found no significant differences in the prevalence of permanent dental caries in children with distal occlusion and children without functional impairment [12.14.16.18].

In assessing the caries intensity of children examined, we found that the caries intensity of temporary teeth in children with distal occlusion (comparison group) was 8.54 ± 0.34 , while in children in the control group (children without distal occlusion), it was 3.82 ± 0.22 .

The intensity of permanent tooth decay was very high for this age and was 3.84 ± 0.18 in children in group 1. Children in the control group had a reliably lower rate of permanent tooth decay than children in the comparison group, which was 1.22 ± 0.34 .

It should note, filled both primary and permanent teeth in 81% of all children. Besides, we have identified 12 cases of premature permanent premolars in children with distal occlusion [18.19].

Thus, our analysis allows us to conclude that children with distal occlusion have significantly higher caries intensity in both temporary and permanent teeth than children without functional disorders of the maxillofacial region. However, we found no significant differences in the prevalence of permanent tooth decay in children with distal occlusion and children without operational problems in the maxillofacial area.

Resistance of tooth enamel in children with distal occlusion

We studied the resistance of permanent tooth enamel in children with distal occlusion and children without functional disorders (control group).

This indicator was in the control group on average of 3.13 ± 0.21 ($t=0.67$, $p>0.05$). We did not identify statistically significant differences in incisor enamel resistance in children with distal occlusion and children without functional impairment.

In analyzing enamel resistance tests on permanent molars, we found that children in the control group had an enamel resistance score of 3.84 ± 0.17 . In contrast, children with distal occlusion had an enamel resistance score two times higher than 6.06 ± 0.27 . The ERT-test values on the incisors of children with distal occlusion were 3.78 ± 0.14 , which was significantly higher than those in the control group (3.13 ± 0.21). Still, the difference in values was not as pronounced as in the molar test in both groups.

Thus, children with distal occlusion were significantly less resistant to permanent tooth enamel than children in the control group. The presented research results can serve as a differential diagnosis for forming health groups in dispensary care of children.

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