

## Prevalence and Intensity of Carious Injury in Children Undergoing Orthodontic Treatment

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**Relevance of research.** The same was observed before bracket fixation, after conducting professional oral hygiene, after training in individual hygienic procedures, when the values of OHI-S and RNR decreased significantly in all groups. If the condition of oral hygiene was determined to be good on the OHI-s index and did not exceed 0.7 values, then – satisfactory on the RNR index was around 1.6. When compared with the previous examination in all patients in Groups 1 and 2 after 1 month after the installation of the apparatus, the index indicators of OHI-s and RNR hygiene increased convincingly, which indicates a deterioration in the hygienic condition of the oral cavity. Thus, the index indicators of hygiene in the OHI-s index were 2.28 and 3.27 times higher in the A1 and A2 control groups, respectively, and 2.49 and 2.54 times higher in the RNR – index, which characterized the hygienic condition as unsatisfactory. Hygienic indexes in V1 and V2 groups did not exceed the initial data, in which the OHI-s index was assessed as satisfactory, and the RNR – hygiene index as unsatisfactory. Subsequent observations found some variation in hygiene index values, remaining satisfactory until the end of the study on the OHI-s index and unsatisfactory on the RNR index, slightly different from the indicators in preventive groups, but significantly better than the values of the initial examination [1.3.5.7.9.11.13.14].

In control groups, the condition of oral hygiene was unsatisfactory in the final review by the evaluation criterion on the OHI-s and RNR hygiene index, and was higher than initial data. The low values of hygienic indices when compared with control groups in preventive groups can be explained by the conduct of professional oral hygiene and the use of treatment – prophylactic agents, which confirms that in the process of orthodontic treatment it is necessary to regularly train, control patients and carry out monthly motivational whitening work. In the course of orthodontic treatment, the assessment of the development of inflammatory conditions in parodont tissues was carried out by determining the RMA index. The data obtained can be deduced in such a way that during the entire treatment, the condition of the parodont tissue was less than 30% in all groups, which corresponded to the assessment criterion of mild gingivitis. At the end of the treatment, the RMA index value differed from the initial data in preventive groups, but was convincingly poor in A1 and V1 control groups, at 103.1% and 128.3%, respectively. According to the WHO criteria, the indicators of the intensity of dental caries ranged from low to high - around 1.96 - 4.67. Before the examination, an oral cavity dating was carried out to all patients, after which only the P component was involved in the index structure. All patients in the review were found to have variations in caries intensity indicators. Thus, the growth of carious cavities in the complex of preventive measures in patients of the A1 Group amounted to 0.17, and in the A2 group – 0.09, respectively. The growth of caries in patients in the V1 cluster was found in both chewing, and as well as contact surfaces of the teeth. The growth of carious cavities in control groups A1 and A2, in which preventive measures were not carried out, respectively amounted to 1.57 out of 0.17.

"R.O.C.S. Caries reduction after use of the drug" Medical Minerals " was 90.2% and 68.5%. In the initial survey of patients, which are solvable and non - solvable orthodontic technologies, the sensitivity of tooth enamel to acid exposure was found to be between  $58.32 \pm 1.37$  -  $68.13 \pm 1.32$ %. To increase the acidic resistance of the enamel, prophylactic subgroups of the 2nd Group contain "R.O.C.S. Medical Minerals " and treatment with the use of Cappa-a course of preventive measures was carried out. Thus, " R.O.C.S. After the use of the drug" Medical Minerals", there was the greatest decrease in test indicators by 27.8% compared to the initial examination. This is called upon by an increase in the acidic resistance of the enamel before the fixation of the solvable and insoluble

orthodontic technique, confirming the importance of carrying out this treatment. It has been found that the process of demineralization of enamel in children with removable orthodontic apparatus is directly related to the applied treatment-prophylactic agents. The results of the examination showed that the processes of enamel remineralization are directly related to the treatment-prophylactic agents used. Thus, intact enamel in the V1 group, compared to the A1 group, was found at 20% higher, the development of medium and deep caries was not recorded, the development of white spot in the A1 group was observed at 30.8% of cases, surface caries at 34.6 medium and deep caries at 3.8 and 7.7%, respectively. It has been found that the processes of enamel demineralization around braces in children are directly dependent on the treatment-prophylactic agents being used. The results of the examination showed that enamel remineralization processes are directly related to the treatment-prophylactic agents being used.

Thus, "R.O.C.S. Medical Minerals" and in patients using kappa, intact enamel after application after 18 months was reported in 83.3% of cases, which was of plausible importance compared to pre-treatment data and the A2 group. Also, medium and deep caries were not recorded in the V2 group, caries in the White dogfight were recorded in 15.4% of cases, surface caries in 1.3% of cases, which is considered to be a low percentage compared to the A2 group indicators. Thus, "R.O.C.S. The use of Medical Minerals and kappa, other remineralizers, allows to stabilize the development of primary caries, increasing the resistance of the hard tissues of the teeth, as evidenced by the clinical assessment using light-induced fluorescence. After 18 months, good results were achieved in 93.3% of children in the V1 Group and in 90.5% of children in the V2 group, which had a convincing character compared to the indicators of the A1 and A2 groups— 68.9% and 65.8% respectively [2.4.6.8.10.12.14].

Thus, despite the introduction of treatment-prophylactic measures, the formation of new carious foci occurred, however, in the main groups, compared to comparison groups, the number of them was 2.2 times less ( $p < 0.05$ ), which indicates that its use is effective in patients who are in Undecidable and Undecidable orthodontic treatment for the prevention and treatment of caries. From the above, it should be noted that from the beginning to the end of our research, R in the patients of the main group (v1, v2 groups).O.C.S. After 1 month of anti-caries activities with the recommendation of Medical Minerals gel, despite the fact that this process is reversible, there has not been a complete disappearance of all carious spots in patients (this may be due to the structure of hard tissues, violation of the diet and the fact that daily hygienic measures are not observed as needed).

"R.O.C.S. Medical Minerals" and the use of Cappa, as well as sanitary-promotional work, the conduct of individual and professional oral hygiene allowed to increase the resistance of tooth hard tissues after 18 months after orthodontic treatment, stabilization of the development of primary caries, as evidenced by a clinical assessment using light-induced fluorescence. The developed complex of modern preventive measures makes it possible to increase the quality of providing orthodontic assistance to prevent the development of the main forms of dental disease in children and their complications. In the conclusion of Chapter Four, we have come to the following conclusions: In orthodontic treatment dynamics, the main legitimacy of tooth hard tissue demineralization processes, manifested by an increase in the wavelength of enamel around the breccias, and a shift from green spectrum to red. In the final examination of patients, the incidence of dental solid tissue light induced fluorescence in children was almost 2 times higher than in children in primary V1 and V2 groups with caries occurrence in A1 and A2 control groups.

**Conclusion.** In children with orthodontic treatment, high phosphorus values ( $r < 0.05$ ) were detected against the background of a decrease in calcic indicators and a normative level of RN. "R.O.C.S. Medical Minerals" and the use of Cappa, as well as sanitary whitening work, carrying out individual and professional hygiene of the oral cavity after 18 months after orthodontic treatment, made it possible to increase the resistance of the hard tissues of the teeth, stabilize the development of primary caries, as evidenced by a clinical assessment using light-induced fluorescence. A complex of developed and appropriate preventive measures, which includes the local use of various treatment-preventive drugs, allows you to improve the hygienic condition of the oral cavity, stabilizes the

condition of the parodont tissues and ensures a decrease in the indicators of the growth of dental caries, which prevents the development of complicated forms of basic dental diseases and allows.

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