

## DIAGNOSTIC OF CARIES BY USING THE MACHINE

QRAYVIEW C

O'. A. Fozilov

Bukhara Medical Institute

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### ABSTRACT

**The relevance of the problem.** The use of fixed orthodontic equipment has greatly expanded the possibilities of treating dentoalveolar anomalies. Its use is effective for normalizing the shape and size of dentitions, correcting the growth and development of the apical bases of the jaw and jaw bones, creating optimal myodynamic balance of muscles, as well as improving the aesthetics and functioning of the dentition. However, the technology of applying braces has significant drawbacks, in particular, the occurrence of bacterial corrosion of the composite around the bracket, carious process, hypoesthesia, gingivitis and periodontitis. In addition, metal locks and ligatures often injure the mucous membrane of the oral cavity and make it difficult to carry out hygiene procedures, which leads to inflammatory periodontal diseases and enamel demineralization.

Caries develops in 15-85% of carriers of the bracket system. If the orthodontist fails to achieve optimal oral hygiene from the patient, to predict the risk of tooth decay and take timely preventive measures, this can end in failure both for the patient and the orthodontist. The patient may experience damage to the tissues of the teeth and periodontium, and the attending physician may be sued for damages. In such situations, American courts, for example, force the orthodontist to pay compensation in the amount of 100-200 thousand US dollars.

Despite the emergence at present of a huge arsenal of tools offered to ensure oral hygiene and the prevention of caries, this problem, as before, remains central to orthodontics. The solution to this problem may depend on the identification of individual characteristics of the sensitivity of the patient's body with dentoalveolar anomalies to the effects of specific factors that can cause caries when using bracket systems and the timely application of adequate preventive measures.

### PURPOSE

Development and implementation of a set of preventive measures aimed at preventing the development of complications during orthodontic treatment of patients using fixed equipment.

The high prevalence of dental diseases among children is associated with negative changes in hard tissues due to the overlay of the braces and other structures.

One of the most pressing and complex problems in pediatric dentistry is the pathology of hard dental tissues in children.

The development of preventive, diagnostic and organizational measures based on the study of monitoring the dental morbidity of children in different age groups determines the relevance of the problem chosen for research, the solution of which is important for practical public health.

Quality of life is an integral characteristic of the patient's physical, psychological, emotional and social functioning, based on the subjective perception of one's health. Assessment of the quality of life allows solving many clinical and medical-social problems:

- provide monitoring of the patient's condition in the dynamics of treatment;
- definition and assessment of the effectiveness of state monitoring;
- assess the need for changes in treatment regimens.

The method of assessing the quality of life is widely used to assess the health status of patients in various fields of medicine. But works on the application of this method in patients with diseases of hard tissues of the teeth of schoolchildren are rare and isolated.

It is known that the medical concept of quality of life includes indicators related to the state of human health in general. However, the maxillofacial system as a unique concentration of important functional elements of various organs occupies a large place in the complex of physical, emotional, intellectual characteristics of patients. Therefore, healthy teeth are an important attribute of the fullness of the psyche and behavioral reactions, starting from an early age.

Given the foregoing, research work in this area of dentistry is relevant and in demand. Clinical examination of children was carried out in the Ramitan district medical association. To fulfill the research goal, 28 children with diseases of hard tissues of teeth of school age 7-17 years were examined. All children studied in secondary schools of the Ramitan region. Analysis of the age-sex composition of the examined showed that according to these parameters, the examined are close to each other, and the groups are representative.

**Schemes for using the innovation facility.** (prescription schemes for the studied drugs, the effects of therapeutic and diagnostic factors, plans for manipulations or diagnostic measures)

The problem of prevention of dental caries and periodontal diseases in the process of orthodontic treatment is especially acute. The practical significance of the issue is determined by the high prevalence of dental caries among the population and the incidence of periodontal tissues. Braces, rings, arches fixed on the teeth significantly impede oral hygiene, which leads in 32.7% of cases to damage to the hard tissues of the teeth, mainly immune to caries surfaces, and in 92% there is an unfavorable periodontal condition. Incorrect orthodontic treatment also contributes to these changes. To prevent such complications, various preparations containing calcium and fluorine have been proposed. However, they do not always give the desired effect, since 65-67% of the examined patients have poor oral hygiene, and local fluoridation is not effective enough due to the rapid loss of calcium fluoride crystals.

For the prevention and treatment of lesions of hard tissues of teeth, a method was proposed for deep fluorination with tifenfluorides, which for a long time emit fluorine in high concentration, contributing to reliable remineralization.

Currently, many fundamental aspects of prevention in the process of orthodontic treatment have not yet been fully resolved. There is no data on the use of the deep fluorination method in orthodontics. The issues of assessing the resistance of tooth enamel and the effectiveness of remineralizing agents using the electrometric method in the process of orthodontic treatment are not adequately covered. There are no effective motivational teaching methods and self-monitoring of the quality of toothbrushing for orthodontic patients. In this regard, the urgent task is the further development of preventive measures in the process of orthodontic treatment.

The results of the study will help to establish risk factors for caries during orthodontic treatment. In the process of orthodontic treatment, an assessment will be given of the condition of the hard tissues of the teeth around the fixed and non-fixed braces. The effectiveness of the complex of preventive measures in patients with a reduced and increased risk of developing dental caries at the stages of treatment with orthodontic appliances will be studied.

According to the developed schedule, the implemented method for the diagnosis of caries using the Qrayview C apparatus was to be carried out after examining the patients. The schedule of tests included: clinical examination and prevention of diseases of hard tissues of teeth. Students from grades 1 to 11 were examined, which correspond to 7-17 years of age, which were divided into groups:

1-group age 7 years-2shk., 2-group age 8 years-2shk., 3-group age 9 years-2shk., 4-group age 10 years-2shk., 5-group age 11 years-2shk., 6 -group age 12 years-3 n., 7-group age 13 years-4sh., 8-group age 14 years-2sh., 9-group age 15 years-3sh., 10-group age 16 years-3sh., 11-group age 17 years-3shk.

## **RESULTS**

In this study, we will use a multivariate analysis of anamnestic, anthropological and clinical and dental data, aimed at identifying the relative role of constitutional and paratonic factors that form the predisposition of patients with dentoalveolar anomalies to caries before and during the use of orthodontic equipment.

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When conducting a cost-effectiveness analysis, the compared options, in contrast to the cost-minimization analysis, are characterized by greater or lesser, but not equivalent, efficiency. In this regard, it is important to assess the degree of expediency of the analysis, depending on the level of reliability of the data.

As a result of the analysis of cost-effectiveness, the ratio "cost / effectiveness" was obtained. These ratios were calculated by the following formula (FillipsS., ThompsonG., 1999).

Thus, the proposed guidelines for the diagnosis of caries using the QrayviewC apparatus for early diagnosis, predicting the outcome of diseases of hard tissues of the teeth allows us to justify the optimal etiotropic treatment. The application of our recommendations to save 50,000 soums in the diagnosis and treatment of one child, a patient with diseases of hard tissues of the teeth.

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