PREVENTION OF CARIES OF THE CHEWING SURFACE MOLARS IN CHILDREN WITH RHEUMATISM

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INTRODUCTION

Despite the development of science and technology, caries remains the main problem of dentistry. In children and adolescents, caries mainly develops in the natural recesses of the milk and permanent molars-pits and fissures. The formation of a carious cavity is possible even before the full eruption of the tooth [Maslak et al., 2000]. In the absence of preventive measures for two years after the eruption of molars, signs of demineralization of the enamel fissures, or the formation of a carious cavity are detected in 70-85% of patients. In the structure of the CPU in 12-15-year-olds, up to 95 % of the removed teeth fall on the first permanent molar. However, a single approach to the prevention of caries of chewing surfaces has not been developed. Various authors suggest differentiated approaches depending on age, individual features of the structure of teeth, the degree of mineralization, the intensity of caries and other factors [Naumova et al., 2014]. There is no single approach to the choice of method of prevention: glass ionomer, composite or varnish. The expediency of using adhesive systems and fluorotic in conjunction with sealants, tactics for sealing fissures with signs of initial carious lesions, and invasive and non-invasive techniques for sealing fissures are also discussed [Deery, 2016].

PURPOSE OF WORK

To conduct a comparative analysis of modern approaches to the prevention of caries of the chewing surface of molars in children and adolescents from the point of view of evidence-based medicine. Analyze the evaluation of the effectiveness of using glass ionomer types of cement and composite sealants with and without the use of adhesive systems and fluorotic. Develop differentiated approaches to choosing a method of prevention of caries of the chewing surface of molars depending on age, individual features of the structure of the teeth, the degree of mineralization, the intensity of caries and other factors.

MATERIAL AND METHODS

To achieve our goals, we searched for publications in the Cochrane, Medline, and PubMed databases for the period from 2019 to 2020. The search included systematic reviews, meta-analyses and randomized clinical studies on the keywords "fissure sealants-fi fissure sealants", "pit and fissure-pit and fissure"," glass ionomer cement — glass ionomer cement, GIC art technique — ART technique". A total of 400 papers were analyzed. The works were grouped by the studied features. Similar data with adequate conditions were combined for analysis. The main criteria for analysis included the total retention of the material at various times, the frequency of development of the carious process in the case of loss of the sealant.

RESULTS AND DISCUSSION

Most papers report on clinical efficacy and economic goals in accordance with the desire to add fissure. The economic effect of caries prevention by fissure sealing is particularly pronounced in countries with a high prevalence and intensity of caries. The" gold standard " is currently considered to be the sealing of fissures with composite sealants. The effect of this sealing method is due to the micromechanical retention of the material after acid etching of the enamel. The retention of the material is enhanced when using adhesive systems [Martignon et al., 2017]. At the same time, Yengopal and Mickenautsch emphasize that only the level of retention of the material can not be equated with its clinical effectiveness, since there is no direct relationship between the retention of the material and the prognosis of caries development in the future [Mickenautsch, Yengopal, 2016]. However, most authors agree that in conditions of high humidity (incomplete teething, lack of rabberdam), the use of glass-ionomer cements is preferable.

It is shown that when applying composite sealants, the use of adhesive systems increases the retention period, without at the same time significantly affecting the level of caries damage in case of loss of coating. It is preferable to use classic etch and rinse adhesives with acid etching rather than self-etching adhesives that provide a lower retention level for 24-48 months [Botton, 2016]. Also, sealing the fissure helps to stabilize the carious process in the early stages, stopping demineralization under the sealer layer. The use of fluorotic (gel) in conjunction with sealing does not affect the retention of the material and caries damage in case of loss, but increases the concentration of fluoride in the oral fluid and reduces the growth of caries on the smooth surfaces of teeth. Fluorine release by glass ionomer types of cement is higher than by composite sealants. Applications of only fluorotic (gel) do not have a significant preventive effect on the development of the carious process in the fissure pits [Paglia, 2016].

CONCLUSIONS

1. The sealing fissure is the most effective method of preventing caries of the chewing surface of molars
2. the Economic effect of sealing fissures is confirmed by numerous studies and is especially pronounced in countries with a high prevalence and intensity of caries.
3. Sealing of fissures helps to stabilize the carious process in the early stages.
4. in permanent teeth with the partial eruption and signs of weak mineralization, glass ionomer cement is highly viscous and application using the concept of ART (finger pressure) is preferred. This statement is also true for breast molars, especially in mass prevention.
5. in fully erupted teeth, despite the fact that the use of composite sealants is considered the "gold standard", it is possible to use glass-ionomer cement, preferably of high viscosity, but this issue still requires further study.
6. when applying composite sealants, the use of adhesive systems increases the retention time of the sealant, preferably using classical adhesives with acid etching, than self-etching adhesives.
7. Fluorolac is effective only in the prevention of caries of smooth surfaces of teeth.

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