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## **CLINICAL EFFICACY OF DIFFERENTIATED TREATMENT REGIMENS OF CARIES IN IMMATURE PERMANENT TEETH**

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The choice of restoration material and treatment regimen for caries of immature permanent teeth in children remains relevant at present. And it depends on the age of the patient and his level of cooperation, the degree of maturity of the permanent tooth, the activity of the carious process and its severity, as well as the group belonging of the tooth and the level of oral hygiene [1, 3, 4].

**Aim.** To evaluate the clinical efficacy of modified glass-ionomer cement for restoration of permanent immature teeth in children with different risk of caries in 2 years.

**Material and methods.** 100 permanent immature teeth in children with a low, moderate and high risk of caries with acute and chronic process were treated using modified glass ionomer cement. Remineralizing therapy was carried out in children with acute caries for 2 weeks before restoration. The duration of remineralizing therapy in children with a high risk and chronic caries was 2 weeks, in the acute caries - 4 weeks. Remineralizing therapy included agents containing calcium and phosphate ions. Assessment of the restorations was conducted in 12 and 24 months according to Ryge criteria which take into account the marginal integrity and discoloration, color stability, surface texture and occlusal wear [2].

**Results.** None of the patients dropped out of the 2 years' study. 100% retention of modified glass-ionomer cement restorations were detected in children with different risk of caries. Patients reported no postoperative sensitivity at 12 and 24 months.

The study restorations demonstrated 100% color stability after 12 months.  $80 \pm 8,94\%$  of restorations in acute and  $90 \pm 6,71\%$  in chronic caries with moderate risk,  $75 \pm 9,68\%$  in acute and  $85 \pm 7,98\%$  chronic with high risk received Alfa ratings after 24 months. The other restorations were rated Bravo because the restorations appeared slightly darker than the adjacent tooth structure.

None of the restorations showed marginal discoloration after 12 and 24 months. Assessment of the marginal integrity based on direct and indirect evaluation was no visible evidence with crevice along the margin: at the 24 months review: an excellent transition from the hard tooth tissue to the filling material was recorded in 100% of cases, which corresponds to criteria Alfa.

Evaluation of restorative texture showed good results. All the restorations exhibited a smooth surface comparable to the adjacent enamel after 1 year.  $85\pm 7,98\%$  of modified glass-ionomer restorations in children with acute moderate caries and  $95\pm 4,87\%$  in chronic moderate caries,  $80\pm 8,94\%$  in acute and  $85\pm 7,98\%$  in chronic caries and high risk were evaluated with Alfa rating after 2 years. The other restorations received the Bravo rating because restorations surfaces were rougher than surrounding enamel but after polishing could be assessed as Alfa.

At 12 months all the restorations were continuous with exiting anatomical form of the tooth. After 24 months, occlusive wear assessment also showed good quality:  $15\pm 7,98\%$  of the restorations in acute process and  $10\pm 6,71\%$  in chronic caries in children with high caries risk were slightly flattened or discontinuous within its anatomical form, but the missing material did not expose the dentin and did not require rework.

It was found that in 100% cases of treatment of children with an acute caries or a high probability of its development, carrying out remineralizing therapy prevented the secondary caries or violation of the marginal adaptation of the filling. No signs of secondary caries were found in any clinical group after 1 and 2 years evaluations.

**Conclusion.** It has been found high effectiveness of the proposed treatment in two years. 80-95% modified glass-ionomer cement fillings were satisfactory, 5-20% of fillings were of acceptable quality and do not require correction or re-treatment.

The use of modified glass-ionomer cement supplemented with remineralizing therapy for the treatment of caries in permanent immature teeth in children with different risk caries provides high clinical efficacy in 85-90% of clinical cases.

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