

**THE USE OF «ARGECEM» FOR CARIES TREATMENT
FOR CHILDREN AND ADULTS**

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Annotation. The article describes the application features of ARGETSEM glass ionomer silver-containing radiopaque two-component cement for the treatment of dental caries in children and adults. The problem of dental caries treatment is one of the most important in dentistry. As a result of a clinical study, the marginal fit of ARGETSEM glass ionomer cement fillings modified with silver fluoride was not noted after 6, 12 and 24 months.

Key words: ARGETSEM, treatment, children, adults, caries.

Аннотация. В статье описаны особенности применения стеклоиономерного серебросодержащего рентгеноконтрастного двухкомпонентного цемента ARGETSEM для лечения кариеса зубов у детей и взрослых. Проблема лечения кариеса зубов является одной из важнейших в стоматологии. В результате клинического исследования краевая подгонка стеклоиономерных цементных пломб ARGETSEM, модифицированных фторидом серебра, не была отмечена через 6, 12 и 24 месяца.

Ключевые слова: ARGECЕМ, лечение, дети, взрослые, кариес

Relevance. Currently, the relevance of dental caries treatment in children of early and preschool age is due to the high prevalence and intensity of the disease, accompanied by a large number of complications and an increase in the need for dental care among the child population [1,3,4].

The treatment of caries in young and preschool children is associated with a number of problems caused not only by the anatomical and physiological features of baby teeth, but also by the complexity of performing many manipulations. Fear of the drill and the need to comply with the doctor's requirements are the main reasons for refusing dental treatment [2,3]. However, modern methods of dental hard tissue preparation, which include the atraumatic method, make it possible to use less invasive interventions in children [2,5].

The method of atraumatic restoration therapy (A. R. T.) is the most gentle approach to the treatment of dental caries, which consists in removing the hard tissues of the tooth damaged by caries manually using special tools and then sealing these areas with cements and does not require local anesthesia [2,5]. Modern filling materials come to the aid of this method, among which a large group are new glass ionomeric cements (SIC), which are rapidly being introduced into practice, which have found their wide application in pediatric dentistry [1,3,4,5]

The purpose of the study. Features of the management and treatment of dental caries in children by traditional and atraumatic methods using ARGETSEM glass ionomer cement.

Materials and methods. We conducted a comprehensive examination of 110 children aged 2 to 6 years. The distribution of children by gender and age is shown in table 1.

Table 1

Distribution by gender and age

Gender	Age				
	2–3 years	3–4 years	4–5 years	5–6 years	Total

Boys	8	13	16	19	56
Girls	10	16	12	16	54
Total	18	29	28	35	110

The study was conducted on the basis of the Department of Hospital Dentistry of the dental clinic in Andijan. The parents were informed about the goals of the upcoming scientific research and gave their voluntary consent for their children to participate in it. The clinical examination included a survey, clarification of the patient's complaints, life history and medical history. Special attention was paid to the presence or absence of general somatic pathology, nutritional characteristics and individual oral hygiene. The objective examination included an examination of the skin, mucous membrane and dentition.

The condition of the hard tissues of the teeth, the marginal fit of the fillings, the depth of the carious cavities, and the density and sensitivity of the dentin were assessed using probing. The children were diagnosed with caries after the examination. In rare cases, patients complained of minor soreness during meals, and probing and percussion were painless. The patients were divided into 2 groups. The first group included 25 children who underwent dental hard tissue preparation using a traditional technique (using a drill). In group II, there were 85 people whose dental caries was treated using an atraumatic technique. In turn, Group II was divided into 2 subgroups. The first subgroup included 40 children whose carious cavities were filled with ARGETSEM glass ionomer cement. The second subgroup consisted of 45 children who were sealed with ARGECEM, modified with silver fluoride. A total of 120 teeth were sealed for moderate caries, 51 of them with ARGETSEM glass ionomer cement (subgroup I) and 69 with ARGETSEM modified with silver fluoride (subgroup II). During the period of oral sanitation in both groups, the behavior of children during the preparation of carious dental tissues for moderate caries was evaluated: using a traditional technique (using a drill)- 25 children have atraumatic dissection using the ART method — 85 children. The child's behavior was assessed according to three criteria:

1) Good: the child is in contact, trusts the doctor, sits well and opens his mouth.

2) Satisfactory: the child makes contact, sits well and opens his mouth himself, but is afraid, crying. Treatment requires persuasion.

3) Unsatisfactory: the child does not make contact well, does not sit well and opens his mouth, full-fledged treatment requires the help of parents and junior medical staff.

In children of group II with a diagnosis of moderate caries, the quality of fillings made of ARGETSEM glass ionomer cement, subgroup I, and ARGETSEM modified with silver fluoride, subgroup II, was evaluated within 6 months, 1 year, and 2 years after the fillings were applied. 3, 6, and 12 months after treatment, during follow-up examinations of patients, a qualitative assessment of the results of the filling was performed according to the following criteria, such as the anatomical shape of the filling and the assessment of the marginal fit. The condition of the filling material in the oral cavity was assessed using a dental mirror or visually. Disturbance of condition and quality may be associated with properties such as solubility, shrinkage, and fluidity. There are the following stages of determining the condition of the seal:

The A-Seal perfectly retains its anatomical shape.;

B- The shape of the seal has been changed, the dentine or lining has not been changed;

C- Loss of material, with exposure of dentine or lining.

To determine the edge fit of the filling material, we used the method of visual examination and probing. The development of the pathological process was indicated by the tactile

sensation of the transition from the filling to the tooth and back. The assessment of regional adaptation was carried out according to a system of clinical criteria, which were proposed in four categories: A — Alfa, B — Bravo, C — Charlie, D — Delta.

A is the absence of a visually detectable defect along the tooth-filling boundary, or the presence of a minor defect, during instrumental examination of which the probe only "catches" or smoothly passes from the filling to the tooth.

C — the presence of a clear gap between the tooth walls and the filling, which does not extend deeper than the enamel-dentine border.

C is the spread of the defect to the dentine or the base of the filling.

D — mobility, breakage and loss of the seal.

The results and their discussion. In the first group (traditional dissection), the majority of children (70%) had unsatisfactory behavior on their first visit. Good behavior was registered in only 10% of children, satisfactory behavior in 20%.

Assessment of children's behavior during oral sanitation using traditional methods. As rehabilitation was carried out using the traditional method, the number of children with unsatisfactory behavior changed slightly, but by the end of treatment, after 2 years, the attitude towards boron machine treatment increased significantly: after 6 months — 80%, 12 months - 85%, after 2 years - 90%. A significant decrease in the number of children with good behavior was noted after 6 months — 5%, after 1 and 2 years the indicators were the same.

15% of children showed satisfactory behavior after 6 months, 10% after 1 year, and after 24 months it dropped to 5%.

Compared to the traditional method, the use of the ART method on the first visit yielded the best results, as good behavior was demonstrated in 79.25% of cases. With each visit, the number of children increased and reached 84% in 6 months, 85.42% in a year, and 94.5% in 2 years.

The number of children with satisfactory behavior using the ART method at the first visit was 15%, after 6 months it did not change, and after 1 year and 2 years - 14.64% and 2.5%, respectively. Bad behavior was observed only on the first visit - 7.12% of children, apparently, this is due to the negative attitude associated with the dentist appointment. A clinical assessment of the condition of the fillings was performed in the II group of patients. In the first subgroup, 100% of the seals were examined six months later. The anatomical shape was preserved and met criterion A. The patients did not complain.

The percussion of the sealed teeth was painless. After 12 months, the patients did not complain. Of the fillings delivered for average caries, 94.74% of Class I and 88.9% of class II were examined. Of the fillings delivered according to Class I, in 67.6% of observations, the anatomical shape of the fillings met criterion A; in 25% of cases, the filling met criterion B (the shape of the filling had changed, the dentin or lining was not exposed). Class II seals met criteria A and B in 69.5% and 22.8% of cases, respectively. After 2 years, 85.14% of Class I seals and 79.8% of class II seals were examined. Upon examination, it was revealed that 57.3% of seals in cash register I and 29.1% in class II met criterion A; in 16.6% and 36.8% met criterion B; and in 16.6% and 17.17% met criterion C. At the same time, patients complained of sensitivity from any kind of stimuli, and the anatomical shape of the seal was disrupted. Assessment of the anatomical shape of fillings made of ARGETSEM glass ionomer cement (subgroup I).

As a result of clinical observations in subgroup II, 100% of fillings made of Aquion ART glass ionomer cement modified with silver fluoride were also examined after 6 months. All sealed cavities of both I and II classes of PO (according to Black) were preserved, patients did not complain, in 100% of cases the anatomical shape of the fillings met criterion A (the

seal perfectly retains its anatomical shape). After 1 year, 83.8% of Class I (Black) and 94.11% of Class II (Black) seals were examined.

Patients also did not complain about various types of stimuli, percussion was painless, and the anatomical shape of the filling met criterion A. After 2 years, 80% of Class I fillings (according to Black) and 90.5% of Class II fillings (according to Black) were examined. It was found that in 75% of Class I and 83.5% of class II (according to Black), the condition of the seals corresponded to criterion A, and in 5% and 6.8% to criterion B. Assessment of the anatomical shape of fillings made of ARGETSEM glass ionomer cement modified with silver fluoride (group II). Clinical studies of the marginal fit of fillings made of ARGECEM and ARGECEM glass ionomer cements modified with silver fluoride were also carried out after 6, 12 and 24 months of follow-up.

After 6 months of follow-up, the results of a clinical study of the marginal fit of fillings in subgroup I showed that in 100% of cases, a violation of the marginal fit was not observed in both classes I and II (according to Black).

After 12 months, a violation of the marginal fit was detected, which corresponded to criterion B (the probe is delayed during movement, there is a visible gap into which the probe penetrates, the dentin and lining are not exposed) accounted for 22.8% of Class I cases and 10.5% of class II cases (according to Black). Upon examination after 2 years in the first subgroup, a significant change was noted along the entire edge between the filling and the cavity wall with penetration in the direction of the pulp, in 13.6% and 13.78% of cases, which corresponds to criterion C.

Conclusion. As a result of a clinical study, the marginal fit of ARGETSEM glass ionomer cement fillings modified with silver fluoride was not noted after 6, 12 and 24 months.

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