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## Assessment Of The Clinical Effectiveness Of The Drug "Denta-Fluo" For Prevention Of Secondary Caries In Treatment With Deep Fluoridation Method

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### ABSTRACT

The article examines the assessment of the clinical efficacy of the drug "Denta-Fluo" for the prevention of secondary caries in the treatment of deep fluoridation.

### KEYWORDS

Remineralization, deep dentin fluoridation, deep caries, copper-calcium hydroxide

### INTRODUCTION

It is known that dental caries is a significant social problem and is considered prevalent in the structure of dental morbidity in the population. The high prevalence and intensity of dental caries is observed in many regions of Uzbekistan, which justifies further developments in the field of prevention and treatment of this disease [1, 2]. It is known that one of the effective anti-cariogenic agents are

fluorides, which slow down the development of caries, enhancing the processes of remineralization and changing the structure of the enamel, making it resistant to the action of acids. Fluorides are also able to inhibit the metabolism of microorganisms, which helps to reduce acid production and prevents the process of enamel demineralization [3,4]

At present, many different drugs have been developed on the world market for more effective prevention and reduction of caries activity, among which much attention is paid to topical preparations containing fluorides of various compounds. For the treatment of caries in the stain stage and the prevention of secondary caries, preparations for deep fluoridation of enamel and dentin are widely used.

The development of a method for deep fluoridation of enamel and dentine with the addition of copper was facilitated by clinical observations confirming that practically no dentine caries occurs under amalgam fillings. Indeed, the composition of the amalgam is capable of restoring a decayed tooth for 10-20 years, since silver and copper quickly kill microorganisms (there is no silver or copper in composite fillings). During the final polymerization, the composite filling shrinks, that is, it decreases in size up to 3%. This means that between a filling with a minimum size of 5 mm with a symmetrical shape and a tooth, the width of the marginal gap is 0.02 mm. Consequently, the tightness of the filling on the border with the tooth is broken, and microbes easily enter the micro-gap between the filling and the tooth wall, thereby causing secondary caries. Combining the aesthetics and shrinkage of the composite filling, they began to use bandings that penetrate into the dentinal tubules, are cemented in them, and adhere to the filling with their other surface. This keeps the filling from falling out, but does not kill germs. Naturally, the development of secondary caries under the filling remained a problem with deep caries lesions of the hard tissues of the tooth.

This problem was solved by the technique of deep fluoridation of hard tooth tissues, first developed by the German professor A.

Knappvost. In the treatment of deep carious tooth cavities, the method is used deep fluoridation of dentin with dentin-sealing liquid [4], including the simultaneous sequential use of fluids of different composition. Copper-calcium hydroxide contained in the liquid has a more powerful disinfecting power than calcium hydroxide, part of the medicinal pads traditionally used in the treatment of deep caries. With deep fluorination, precipitated alkaline copper fluoride has a long-term bactericidal effect. Applied to the bottom and walls of the cavity, the drug is able to prevent secondary caries. [3].

By analogy, in 2019, DentsPfarma LLC developed and presented the first domestic drug "Denta-Fluo" intended for deep fluoridation of enamel and dentin. The Denta-Fluo kit includes liquid and suspension. Liquid - a solution containing copper and fluorine ions. The suspension is a highly dispersed calcium hydroxide in distilled water with the addition of a stabilizer. With the sequential application of a weakly acidic solution of magnesium fluoride silicate (liquid) and highly dispersed calcium hydroxide (suspension), deeply penetrating into the pores of enamel and dentin (about 10 µm deep), on the tooth surface, spontaneous precipitation of highly dispersed calcium fluoride, as well as magnesium fluoride, which has even greater solubility.

Thus, the foregoing served as a rationale for the purpose of our study to assess the clinical efficacy of the drug "Denta-Fluo" for the prevention of secondary caries in the treatment of deep fluoridation.

## RESEARCH MATERIALS AND METHODS

In accordance with the set goal and objectives, treatment was carried out in 46 patients aged 14-25 years. Medium caries was found in 25 patients, deep caries in 21 patients. The

average index of KPU in this group of respondents was 6.4 + 0.8. Before treatment, all patients underwent professional cleaning of all teeth using polishing pastes.

After preparation and antiseptic treatment of carious cavities with medium caries, the prepared cavity was treated with “Denta-Fluo”: first with liquid No. 2, after shaking the contents of the bottle, then with liquid No. 1 and again with liquid No. 2, each layer was dried with an air stream for 15 s, then the enamel surface It was etched and washed with distilled water, the cavities were again dried and restored with a filling of a worn-out hybrid composite material “S-light” using glass ionomer cement “Denta- Cem” as a base lining.

In the treatment of deep caries, the bottom of the prepared cavity was also treated with “Denta-Fluo” and temporarily filled with Tempolat-LS material. The final filling of the tooth was carried out after 2 weeks with the aforementioned “S-light” material, also using the glass ionomer cement “Denta- Cem” as a base lining. with re-treatment of the cavity with “Denta-Fluo”.

After the final treatment of the fillings, the teeth were dried with a warm stream of air, then liquid No. 1 was applied to the surface of the teeth for 30 seconds and the surface of the teeth was immediately treated with liquid No. 2 in the same way, after shaking the contents of the bottle.

As a preventive measure, all patients were recommended to brush their teeth with a paste of their choice 2 times a day - in the morning after breakfast and in the evening after dinner. After each meal throughout the day, a thorough

All patients were under observation: control examinations were carried out after 2 weeks, 4

weeks, and then after 6 months, 1 year in order to assess the quality of the marginal fit of the fillings. At the beginning of the study and during follow-up examinations, the hygienic state of the oral cavity was assessed according to the indicators of the Green-Vermillion hygienic index (OHI).

## RESULTS AND DISCUSSIONS

At the initial examination, all patients complained of a short-term painful reaction of the teeth to various stimuli, the presence of a carious cavity, food jamming. The hygienic index ranged from 1.2 to 2.6 points for the mouth.

Subsequent follow-up examinations after filling carious teeth using deep fluoridation showed no complaints.

In all patients, the indicators of hygiene corresponded to a satisfactory state of hygiene of the shelf index were in the range of 0.4-0.6 points, which indicated a good state of oral hygiene. Probing of the surface of the teeth and fillings showed no signs of a violation of the marginal fit of the filling material or discoloration at the “tooth-filling” border.

Control studies carried out using vital staining also did not reveal any abnormalities in the enamel structure.

## CONCLUSION

Thus, the results of our research testified to the high caries prophylactic effect of the drug “Denta-Fluo”, which allows us to recommend it for the prevention of secondary caries when using the deep fluoridation method.

Dentin-sealing liquid as “Denta-Fluo” does not interfere with the formation of adhesion between the materials with the adhesive system and the tooth tissues. Also, this drug deserves the attention of practicing dentists,

as it is an effective and budgetary remedy in the treatment of deep dental caries.

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