

**POSSIBILITIES OF USING DIAMMINE SILVER FLUORIDE PREPARATIONS IN PEDIATRIC DENTISTRY**

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**Abstract.** Diammine silver fluoride is a promising preparation for use in dentistry, especially for the prevention and treatment of dental caries in children. The advantages and disadvantages of using diammine silver fluoride preparations are presented in the article.

**Keywords:** treatment and prevention of caries, diammine silver fluoride, children.

### **INTRODUCTION**

For a long time, silvering of hard dental tissues has been used as an alternative method for treating enamel caries in temporary teeth and disinfecting root canals of teeth during endodontic treatment.

### **MATERIALS AND METHODS**

First-generation silvering preparations stop the development of the carious process (due to the bactericidal action of silver and coagulation of enamel proteins), but have a number of disadvantages:

1. Esthetics are impaired, since the treated dental tissues are stained black.
2. The carious process progresses with undiagnosed dentin involvement.
3. Irritating effect on the dental pulp with undiagnosed dentin caries.
4. Inactivation occurs under the influence of light.
5. Due to the multi-stage nature of the procedure, a lot of time is required.
6. Several visits are required to carry out a course of silvering.
7. It is necessary to carefully isolate the gingival margin.
8. Risk of chemical burns of the oral mucosa.

### **RESULTS AND DISCUSSION**

In the 1970s, second-generation silver-containing compounds appeared – based on diammine silver fluoride (DSF). Studies of the clinical effectiveness of this compound were started in Japan in the 1970s (R. Yamaga). At the beginning of the 21st century, researchers

from different countries (Spain, China, Australia) published a number of articles devoted to diammine silver fluoride in the world's leading dental journals [1]. These publications confirmed its high clinical effectiveness and outlined a range of unresolved issues related to its use.

#### *Advantages of DSF*

1. High efficiency of caries prevention and treatment. The use of DSF is effective both for the prevention of dental caries and for its treatment. According to J.C. Llodra et al., when DSF is applied to schoolchildren twice a year for 3 years, starting from the age of 6, the reduction in caries on the surfaces of the first permanent molars is 65%, and on temporary canines and molars – 80% [2]. Application of DSF to preschoolers once a year for 30 months leads to a 70–84% (depending on the application technique) reduction in caries on the surfaces of temporary incisors and canines, which is significantly higher than that when using Duraphat fluoride varnish 4 times a year (44–56%) containing 5% NaF [3]. The effectiveness of using DSF preparations for preventing caries of the chewing surface of 603 primary molars in children aged 1–5 years consists in the relatively rare development of caries (19.4%) compared to the use of enamel sealing liquid (22.8%) and 1% sodium fluoride solution (33.1%). Moreover, the frequency of caries development depends on the age of the child, oral hygiene and the type of chewing surface [4]. The reduction of caries of the chewing surface of primary molars 12 months after DSF application is 54.5% compared to the positive control (use of 1% sodium fluoride solution) [4], which allows us to consider DSF silvering as an effective method of mineral sealing of fissures.

2. No irritating effect on the dental pulp and periapical tissues. There is data on the complete absence of complications after silvering with DSF in the case of treating dense dentin [2, 3]. According to Llodra J.C. et al., the incidence of pulpitis in the first permanent molars with carious cavities treated with DSF is 0.2% and does not differ significantly from that in the control group (0.3%) [4].

3. Inexpensive, technically simple and can be used by non-dental personnel. The cost of DSF preparations is less than the cost of alternative methods of treating caries (classical filling, ART filling), and their use does not require expensive equipment, which allows us to recommend their use even in developing countries. It is important that pre-trained medical personnel can carry out DSF applications outside the dental office (at school, in kindergarten).

#### Possibilities of using DSF preparations

1. Prevention of caries of primary and permanent teeth, including fissure sealing.

2. Treatment of caries of primary and permanent teeth.

3. Treatment of carious cavity after preparation. The possibilities of DSF in this area are associated with data on the effectiveness of DSF applications before ART filling of carious cavities [1]. However, it is necessary to take into account that with this technique it is possible not only to stain hard tooth tissues, but also to change the color of the filling material.

Methods of using DSF preparations. There are several slightly different methods of using DSF [2].

The most common method includes the following steps:

1. Preliminary cleaning of the tooth surfaces to be treated with a fluoride-free abrasive paste, followed by thorough rinsing of the cleaned surfaces with water.
2. Isolation of the tooth.
3. Application of the DSF preparation for 40–60 seconds.

The patient is advised to refrain from drinking water and eating food for an hour. This procedure is repeated 1–2 times a year [3].

## **CONCLUSION**

The widespread use of DSF in practical dentistry is associated with the release of the drug "Saforide" (Japan [4]), containing a 38% solution of silver diammine fluoride (44800 ppmF). Relatively recently, DSF preparations began to be produced in other countries: "Safluoride" (30% DSF, Brazil [1]) and "Argenate single-component" (38% DSF, Russia [2]), "Fluoroplat" (38% DSF, Argentina [4]). Silver diammine fluoride is a promising drug for use in dentistry, especially for the prevention and treatment of dental caries in children. However, there are issues requiring further study of DSF preparations and, possibly, their improvement.

## **REFERENCES**

1. Arzhanov N.P. // Dentist (Kharkov). - 2015. - № 1-2.
2. Dedeyan S.A., Abkaryan G.A. Application of the solution "Saforaid" for the prevention and treatment of dental caries and dentin hyperesthesia: a new medical technology. - M., 2018. - 8 p.
3. Korchagina V.V. Achieving maximum dental health in young children through the introduction of modern technologies: Abstract of a PhD thesis. - M., 2018. -35 p.
4. Maslak E.E., Rozhdestvenskaya N.V., Fursik D.I. et al. // Institute of Dentistry. - 2015. - № 3. - R. 82-84.