



Silver Diamine Fluoride in Primary Teeth

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Introduction

Silver Diamine Fluoride or SDF (38% W/V AG(NH₃)₂F, 30% W/W), It's first reported use for dental purpose dates back to as old as 900 years back in Japan for cosmetic blackening of teeth. For more than 5 decades SDF is in the market for arresting caries in Japan, Brazil and Argentina. It's also used for treating dentinal hypersensitivity in these countries.

Japan being the pioneer in regard to research of SDF and tested its effect on caries cessation in 1960. They tested SDF for its ability to halt caries progression and also prevent new caries by surface application of SDF.

Clinical method

According to American Dental Association – Non Restorative Treatments for Carious lesions Clinical Practice Guideline (2018) [1] in order to arrest advanced cavitated lesions on any coronal surface of primary teeth, the expert panel recommends clinicians to prioritize the use of 38% SDF solution (biannual application) over 5% NaF varnish (application once per week for 3 weeks).

Frequency of application

There is no established frequency for SDF application, suggested frequency in children range from annual to biannual to three consecutive weekly application followed by semi annual recall. Horst., *et al.* determined that re application of SDF twice a year significantly increased caries arrestation.

SDF application technique

Few drops of SDF are dispensed in a dappen dish, taking into consideration the number of teeth and surface area to be applied. One drop is sufficient for five surfaces. The tooth/teeth to be treated are then isolated using cotton rolls or gauze pieces and then air dried using a three way syringe. Use a microbrush by dipping it in SDF solution and then applied on the cavitated lesion/surface using a scrubbing motion. The solution is then allowed dry over the tooth surface so it can react with tooth surface for 1-2 minutes and then rinsed off using water jet.

Effectiveness in children/Primary teeth

A study conducted by Chinbinski AC, Wambier LM, Fetrin J, Loguercio AD, Wambier DS, Reis A (2017) [2] concluded that in comparison to active treatment which is usually Atraumatic restorations in these cases, SDF is more effective in controlling or arresting dental caries in primary teeth. Results also showed in an overall analysis the use of SDF is up to 89% [49% - 138%] more effective when compared to other treatments, placebo or no treatment.

Inference

Based on the use of SDF solution (38%) in my clinic on primary teeth in both annual and bi annual application modes, although SDF was found to be affective but discoloration of the teeth caused due to SDF was a major point of concern for the parents of these children. A lot of patients discontinued the treatment because of this factor specially when applied on mild cavitated areas in the anterior region. Parents were informed about it in advance but still it caused distress. So SDF should be used keeping all these factors in mind and also informing the parents even showing pictures to prevent distress and enhance follow up.

Bibliography

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