The Use of Silver Diamine Fluoride in Dentistry in Virginia

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Purpose

- To determine the use of Silver Diamine Fluoride (SDF) in dentistry in Virginia and the factors that affect the practitioners' decision.
- The hypothesis was that formal training on silver diamine fluoride is a major influence in how often a dentist chooses to utilize SDF in their practice. In addition, pediatric dentist utilize SDF more than general dentists

Background

- SDF is a liquid medicament utilized in the dental field.
- While SDF has been FDA approved in the US since 2014 for reduction of dentin sensitivity, it is also used off-label to arrest caries. In 2016, SDF received a working CDT code (D1354).
- Advantages: (1) minimally invasive treatment (2) relatively quick (3) not aerosol producing (4) delay the need for treatment with general anesthesia
- Disadvantages: (1) permanent staining of carious tooth structure (2) staining of clothes (3) temporary staining of soft tissue (4)metallic taste
- It should be avoided in people with a silver allergy.
- A reapplication may be indicated to arrest the caries, and there is no guarantee that it will arrest the caries.
- Anterior teeth have a higher rate of caries arrest compared to posterior teeth.
- Research showed that pediatric dentists who had an increased education about SDF were more likely to utilize SDF in clinical practice.Pediatric Dentists utilize SDF for children with behavioral issues, medically fragile patients, and dental anxiety.[1]
- Research showed that pediatric dentists are the practitioners to most likely utilize SDF. A few of the main barriers for general dentists were the lack of education and the lack of coverage by insurance.[2]
- Providers accepted SDF less compared to parents due to the unesthetic outcome.[3]. Parents were more willing to have staining on anterior teeth if the patient did not have to have general anesthesia or sedation.[4]
- This research has the impact on the community by informing general dentists and specialists about silver diamine fluoride as a treatment option for certain populations.

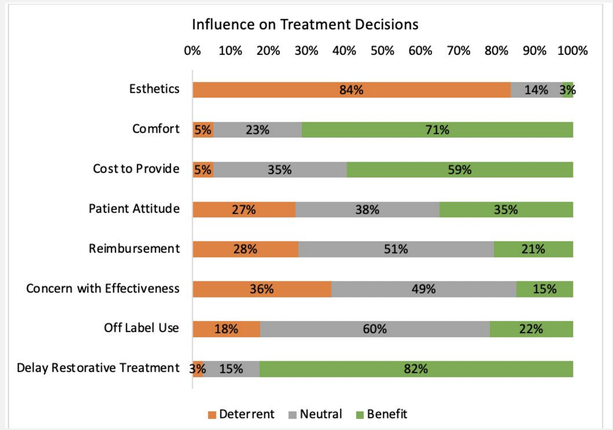
Methods

- This study was a cross-sectional study. Members of the Virginia Dental Association (VDA) were recruited for participation in the survey by email, the VDA Facebook page, and the VDA LinkedIn account.
- Inclusion Criteria: (1) member of the VDA (2) performed treatment that could utilize SDF.
- The survey had approximately 40 questions. The survey questions were developed by modifying a survey by Dr. Marita Inglehart who surveyed pediatric dentists in the United States through the American Academy of Pediatric Dentistry (AAPD).[1] Certain questions were utilized with permission and other questions were adapted.
- The questions of the survey measure the practitioner's demographics, knowledge of SDF, and factors that affect their utilization of SDF.
- At the end of the survey, an example PDF of a SDF consent form and the Chairside Guide: Silver Diamine Fluoride in the Management of Dental Caries Lesions from the AAPD Reference Manual were available for download.

Timeline

Results

- A total of 145 providers responded to the survey (3.9% approx. response rate). Most were general dentists (77%) with ten or more years in practice (69%), in a solo or group practice (64%). Nearly all dentists reported treating children in their practice (95%) and 40 percent reported accepting Medicaid insurance.
- Of the responding providers, 66% reported currently using SDF in their practice. Of those providers who reported using SDF, the most common clinical situations reported were for arresting caries in children with behavioral issues (77%), to delay restorative treatment (73%), in medically fragile patients (67%), for root caries (60%), and for patients with severe dental anxiety (54%).
- The greatest deterrents on the influence on treatment decisions were esthetics, concern of effectiveness, and reimbursement. The greatest benefits on the influence on treatment decisions were delay restorative treatment, comfort, and cost to provide (Figure).



- Self-reported use of SDF was significantly associated with the provider's years in practice (p=0.0053) and if they felt they have received adequate training (p<0.0001).
- Providers who reported using SDF had significantly higher knowledge ratings than those who reported not using SDF (p<0.0001 for all statements).
- Pediatric dentists were more likely to report using SDF (100% vs 61% p=0.0002) and more likely to report feeling like they had adequate training on SDF (95% vs 59%, p=0.0015) compared to general dentists.

Conclusion

The practitioners who utilize SDF have more knowledge about SDF. Pediatric dentists use SDF more and have more knowledge than general dentists. Pediatric dentists reported they had an adequate amount of training on SDF compared to the general dentists. The practitioners that are more recently out of dental school utilize SDF more than those who have been practicing longer. The practitioners who perceived adequate training were more likely to report the use of SDF than those who did not. An increase in training and a higher reimbursement amount would increase the amount the practitioners use SDF.

References

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