

ABSTRACT

Purpose: This study aims to analyze clinical performance between anterior resin restorations and silver diamine fluoride (SDF) application of maxillary anterior primary teeth for children ages 0-6 years old at 6 months after treatment.

Methods: A retrospective chart review was conducted at a pediatric dental clinic located in Laredo, TX. The records were identified by using a search for CDT codes for resin restorations (D2330, D2331, D2332, D2335) and silver diamine fluoride application (D1354) for teeth #D, E, F, G. from 2018 to 2021 for children ages 0-6 years old. Time for follow up post treatment ranged from 6 months to 3 years. Teeth were excluded if no 6 month follow up and/or dental anomaly.

Results: Information from 342 primary teeth was recorded and reviewed. 34% of teeth that received resins and 48% of teeth that received SDF were excluded due to no follow up at 6 months. Success of resin restorations/SDF respectively was 52/42% for children < 3yo and 60/27% for children 3-6 yo. 19% of teeth that received restorative treatment needed re-treatment. 8% of teeth that received resins and 11% of teeth that received SDF needed extractions. 27% of teeth treated with resin in the OR needed retreatment.

Conclusion: The use of resin restorations and SDF on young children shows promising results. The challenges of dental treatment on young children can interfere with the success of the treatment due to lack of isolation and cooperation. It is crucial to educate parents of the importance of follow-ups and recalls to closely monitor restorative treatment and teeth that have been treated with SDF.

MATERIALS and METHODS

Following Institutional Review Board approval from the University of Texas Health Science Center at San Antonio (San Antonio, Texas), a retrospective chart review was conducted at a dental clinics serviced by pediatric dental residents of the University of Texas Health Center at San Antonio: Laredo Dental Clinic- Laredo (Health professional shortage area- HPSA designated). Using Axiom software program, records were identified by using a search for CDT codes for resin restorations (D2330, D2331, D2332, D2335) and silver diamine fluoride application (D1354) for teeth #D, E, F, G. Records were obtained for patients aged 0 to 6 years old at the time of treatment. Patients were divided according to age into two groups (0-3 and 3-6). The treatment meeting the inclusion Criteria were evaluated for:

- Completion of restorative code for restoration (D2330, D2331, D2332, D2335) or silver diamine fluoride application (D1354) for teeth #D, E, F, G.
- Return for follow up and/or recall at 6 months post treatment to review outcome of treatment.
- Location of where treatment was rendered (in office setting vs in hospital setting).

Review of recall and/or follow up appointment clinical exam findings and radiographic findings. Success of restoration was defined as restoration is intact with no recurrent caries, no abscess, no pain. Success of SDF was defined as caries was arrested, no abscess, no pain.

RESULTS

A total of 342 primary teeth were reviewed. The restorative treatment was completed with resin composite or glass ionomer (GI) material and in some cases, strip crown former was used and other restorations were done with a direct technique (Figure 1). SDF application used microbrush and was scrubbed on carious surface of dried tooth for 15-60 seconds (Figure 2).

34% of teeth that received resin/GI restorations and 48% of teeth that received SDF were excluded due to no follow up at 6 months. It is important to consider that many of our patients are referred from outside clinics for treatment and then return to their referring dental office, so there is a lack of follow up outcome of those patients.

Success of resin restorations was 52% for children less than 3 years old and 60% for children 3-6 years old. Success of SDF treatment was 42% for children less than 3 years old and 27% for children 3-6 years old.

19% of teeth that received restorative treatment needed re-treatment. 8% of teeth that received resins and 11% of teeth that received SDF needed extractions. 27% of teeth treated with resin in the OR needed retreatment.

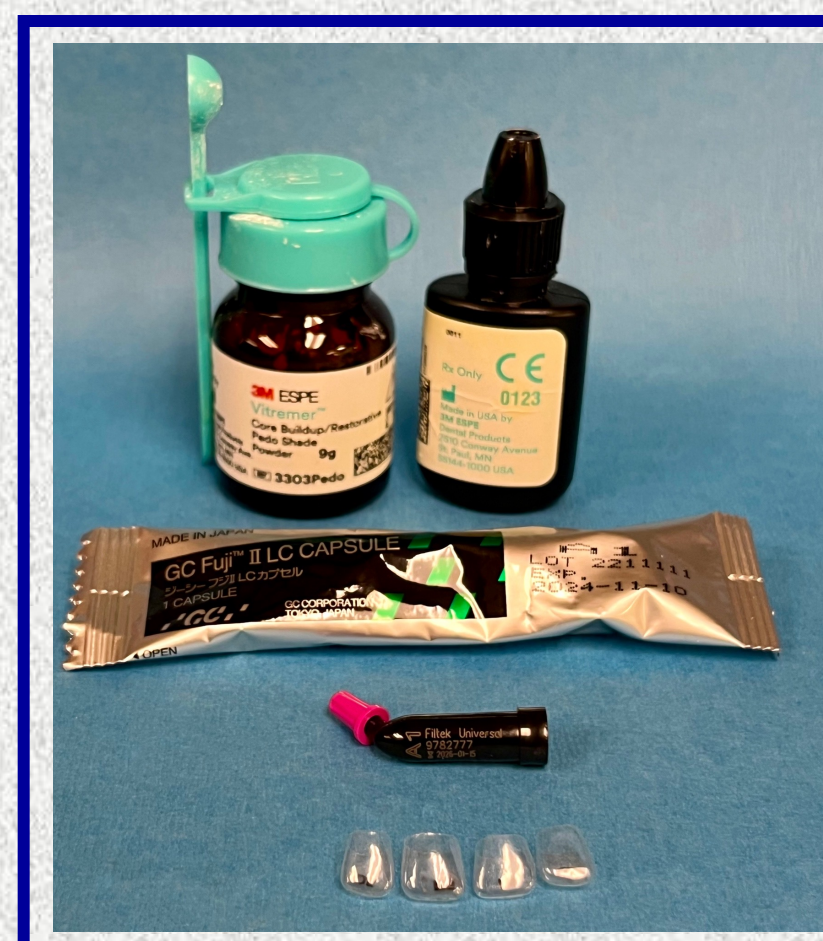


Figure 1. Restorative armamentarium



Figure 2. Silver diamine fluoride armamentarium



Figure 4. Pre and post op Glass Ionomer Strip Crown #E



Figure 5. Pre and Post op SDF Application #D, E, F, G

CONCLUSIONS

- The use of resin restorations and SDF on young children shows promising results for children with early childhood caries.
- The conservative in office treatment options of restorations and/or SDF application can often prevent or delay the need for dental treatment under general anesthesia in a hospital setting.
- The challenges of dental treatment on young children can interfere with the success of the treatment due to lack of isolation and cooperation.
- It is crucial to educate parents of the importance of follow-ups and recalls to closely monitor restorative treatment and teeth that have been treated with SDF.
- Further research is required to evaluate the success of treatment of caries in office setting compared to treatment of caries in hospital setting.

REFERENCES

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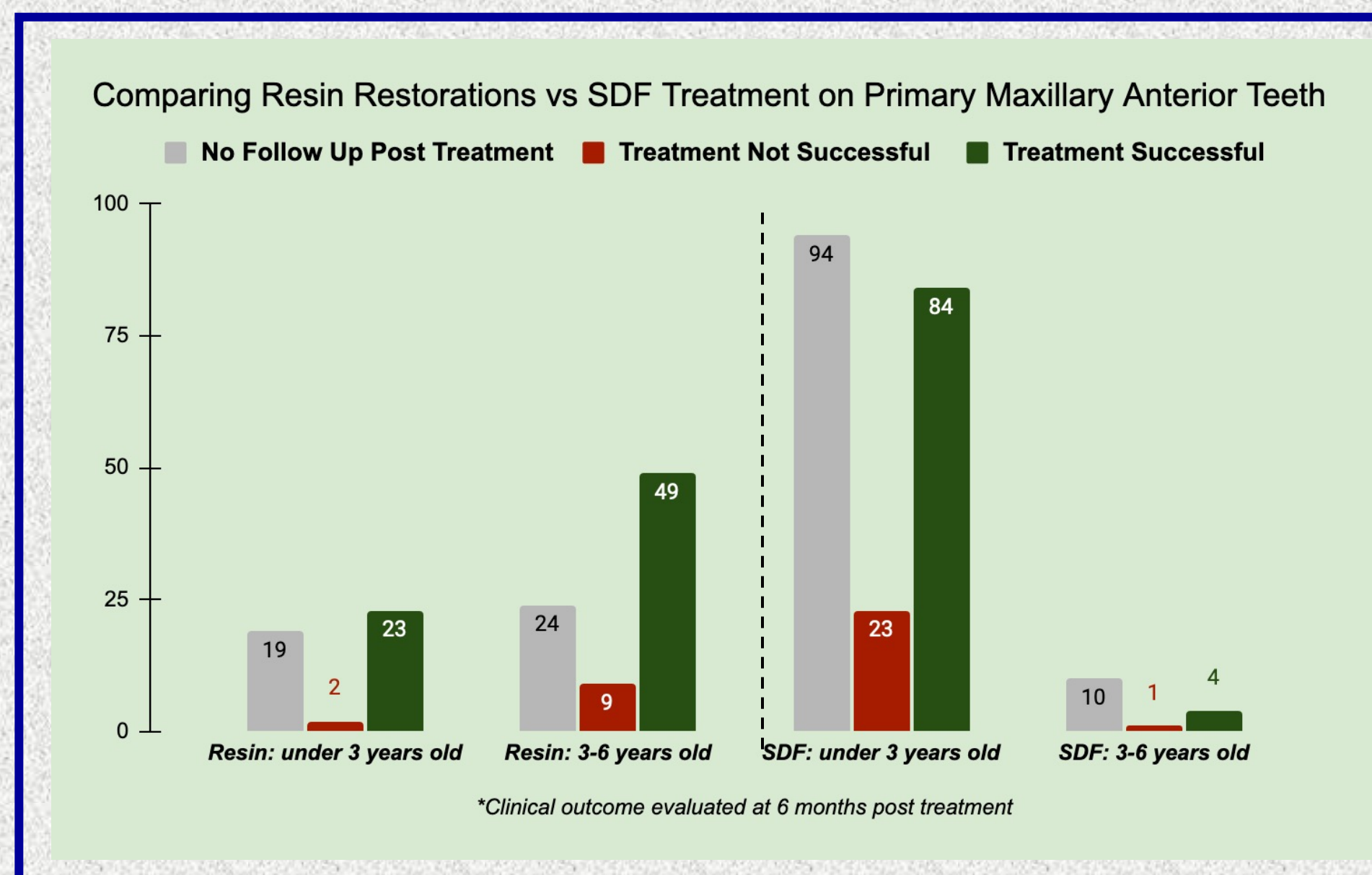


Figure 3