Assessing Treatment Outcomes After SDF Application in a University-based Dental Clinic

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BACKGROUND

Silver diamine fluoride (SDF) was approved by the Food and Drug Administration (FDA) for use in the United States in 2014. Although the initial approval was for reducing tooth hypersensitivity, it is currently being applied more frequently as an off-label use to arrest dental caries.

Multiple studies have shown SDF to be effective as a caries arresting medicament. Caries arrest does not restore the form and function of the dentition. Subsequent minimally invasive restorations such as those used in the silver modified atraumatic restorative technique (SMART) are not as well documented.

The objective of this study was to assess the long-term prognosis of SDF application among pediatric patients at the University of Minnesota Pediatric Dental Clinic.

OBJECTIVES

The primary objective of this study was to assess the long-term prognosis of SDF application among pediatric patients at the University of Minnesota Pediatric Dental Clinic.

The secondary objective of this clinical study was to evaluate the various types of restorations, if any, placed after SDF application.
This study provides useful data to the University of Minnesota, School of Dentistry and local dental providers in understanding the efficacy of SDF in arresting caries.

METHODS

This study reviewed patient charts who received topical application of SDF in the primary dentition to arrest dental caries between 2017 and 2021. Data were abstracted from the electronic health record and this study was determined to be exempt by the IRB STUDY00013841. Data abstracted included the patient's age, gender, medical history as determined by ASA status, Frankl score, carious surfaces, the number of SDF applications, and if any other restorative or surgical treatment was attempted at or after the initial SDF visit.

RESULTS

Table 1: Patient Demographics (N = 52)

Gender		
	Male	24 (46.2%)
	Female	28 (53.8%)
Age (1 – 9 y)		
	< 3 y	16 (30.8%)
	3 – 6 y	22 (19.2%)
	>6 y	13 (25%)
Frankl Score		
	1	15 (28.8%)
	2	15 (28.8%)
	3	13 (25%)
	4	9 (17.3%)
# of SDF Applications		
	1	25 (48.1%)
	2	24 (46.2%)
	3	3 (5.8%)

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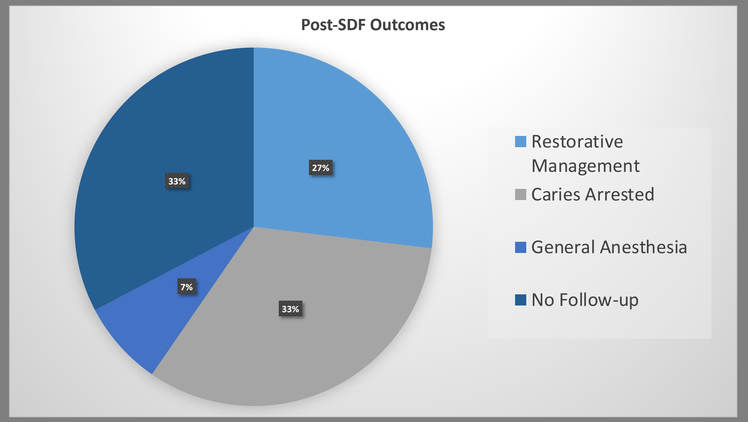
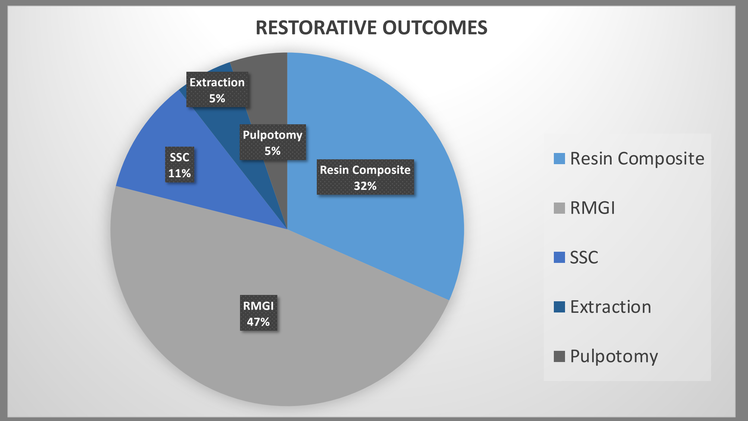
RESULTS





DISCUSSION

This study examined 52 patients who received SDF applications at the University of Minnesota Graduate Pediatric Clinic from 2017-2021.

- Most patients were Frankl 1 or 2 and had 1-2 SDF applications
- One third of patients were eventually treated under GA
- One third of patients had their caries arrested and required no further restorative treatment
- One third of patients have restorative treatment
- Resin or RMGI was was the most common restorative treatment