Future Dental Needs Following Oral Rehabilitation Under General Anesthesia

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INTRODUCTION

Pediatric dental treatment under general anesthesia (GA) is utilized for various reasons including, but not limited to patients with very young age, complex medical/physical/mental conditions, need for extensive treatment, and safety considerations[1]. Full mouth rehabilitation under GA can be more efficient and cost effective than repeated dental visits utilizing other sedation methods.
It has been shown children diagnosed with early childhood caries (ECC) are at high risk for developing new decay after oral rehabilitation despite being placed on increased recall intervals[2]. There is evidence that full coverage restorations, typically stainless steel crowns (SSCs) are more effective than more conservative treatments such as fillings[4].

PURPOSE

The purpose of this study is to determine if patients with untreated primary molars following full mouth rehabilitation under general anesthesia develop new caries requiring aggressive, conservative, or no treatment at follow-up visits.

METHOD

A retrospective chart review was completed of patients age 1 year through 12 years of age who received treatment under general anesthesia at Jordan Valley Community Health Center between 7/01/2016 to 6/30/2018. Future treatment needs were classified as either conservative or aggressive. Conservative treatment modalities included direct restorations. Aggressive treatment of primary molars were considered to be full coverage restorations or extraction. Data was de-identified and stored in REDCap Software (Vanderbilt, Nashville, TN). Statistical analysis was completed by statisticians at NYU-Langone Hospitals.

FIGURES

Table 1. Patient Demographics

Gender	% (n)
Female	53.7 (198)
Male	46.3 (171)
Age	**% (n)**
2-3 years	54.7 (202)
4-5 years	35.2 (130)
≥6 years	10 (37)

Figure 1. Future Treatment and Time to Diagnosis

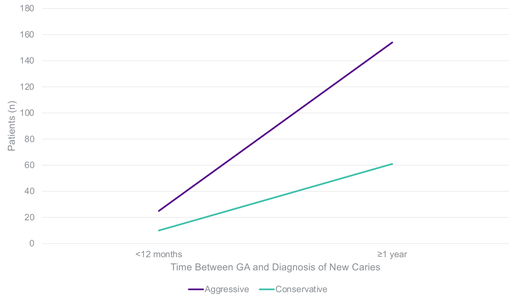
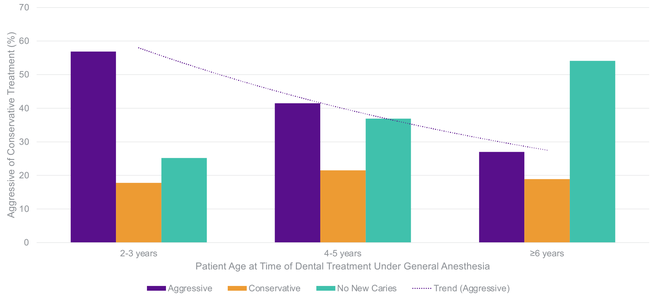


Figure 2. Aggressiveness of Future Treatment in Patient Age Groups



RESULTS

A total of 369 charts met all inclusion criteria. Groups were approximately equal between demographics. Out of 369 charts reviewed, 71 (19%) required conservative treatment while 179 (48%) required aggressive treatment following their initial treatment under GA. The majority of patients in this study required treatment or had new caries findings more than a year after their initial GA treatment (n=215, 58%); however, approximately 1/3 of the studied patients never required further treatment (n=119, 32.2%). The majority of patients who required treatment after their initial GA experience were under 6 years old. Patients over age 6 at the time of their initial treatment were the least likely to require treatment of initially untreated primary molars at subsequent visits.

CONCLUSIONS

Findings of this study indicate that untreated primary molars that require treatment following complete oral rehabilitation under general anesthesia are more likely to require aggressive treatment compared to conservative treatment options. This finding corresponds to findings from previous studies demonstrating a correlation between patients with early childhood caries and future caries experience. In this study, there was no statistical difference between genders of patients in terms of future treatment needs occurring at specific time frames after GA (P>.05) or regarding aggressiveness of treatment required(P>.05). However, age was found to be a statistically significant variable with younger ages being more likely to require aggressive treatment compared to conservative treatment (P=.001) and at a shorter time period following GA (P=.003). This may indicate that aggressive treatment in the general anesthesia setting is most appropriate and potentially cost-saving. Future research should focus on the cost-benefit ratio of performing aggressive treatment on small carious lesions or non-cavitated lesions in high caries risk children.

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