

Relationship among different stages of early childhood caries, fluoride concentration in dental plaque and clinical variables of preschoolers aging 36 to 60 months

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Abstract

The aim of the present study was to assess the relationship among different stages of early childhood caries, fluoride concentration in dental plaque, as well as presence of visible plaque in preschoolers aging 36-60 months. A total of 108 preschoolers, enrolled in public preschools in the urban area of Piracicaba-SP/Brazil, were clinically examined according to Nyvad criteria and the dmf-t (decayed missing and filled surfaces/teeth) was also recorded.

Key words: early childhood caries, dental plaque, fluoride.

Introduction

Early childhood caries (ECC) is defined as the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child 71 months of age or younger¹. The objective of this study was to evaluate the relationship among early childhood caries, fluoride concentration of dental plaque, as well as presence of visible plaque in preschoolers aging 36 to 60 months.

Results and Discussion

The final sample comprised 108 children aging 36 to 60 months. The mean dmf-t score was 1.43. These children were divided in three groups:

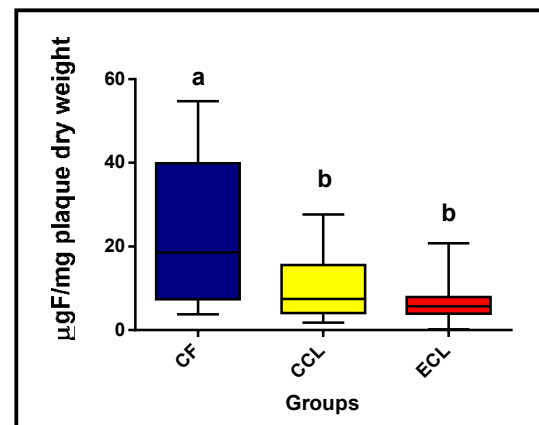
1. Caries-free children (CF) group (n=42);
2. Children presenting early caries lesions (ECL) group (n=14);
3. Children with cavitated caries lesions (CCL) group (n=52).

Table 1. The relationship between early childhood caries stages and dental biofilm. (Significant results evaluated by the Fisher's exact test ($\alpha=0.05$)).

Dental biofilm	CFx ECL		CFx CCL		ECLx CCL	
Present	24(70)	10(30)	24(36)	43(64)	10(19)	43(81)
Ausent	18(81)	4(19)	18(67)	9(33)	4(31)	9(69)
	p=0,2667		p=0,0063*		p=0,2772	

Table 2. Pearson correlation coefficients (r) and probabilities of statistical significance (p) between caries (dmfs) and the variables analyzed among ECL and CCL children.

Variables	dmf-s			
	ECL		CCL	
	r	p	r	p
Fluoride concentration	0.2663	0.1061	0.1435	0.3152
Presence of dental plaque	-0.1807	0.5364	-0.1711	0.2300



* Significant results evaluated using the Kruskal-Wallis non-parametrical test followed by the Student-Newman-Keuls test ($\alpha = 0.05$).

Figure 1. Fluoride concentration in dental plaque of preschool children in the three groups.

Conclusions

There was association between the presence of clinically visible dental plaque and caries cavitated lesion. Fluoride concentration in dental plaque was significantly higher in Caries-free children than in the Cavitated lesion and Early caries lesion children.

Acknowledgement

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¹Drury TF *et al.* J Public Health Dent. 1999;59:192-7.