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Original Research Article.

Early Childhood Caries and Its Association with Maternal Caries Status

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ABSTRACT

Background: Dental caries is a global health problem. It has multifactorial origin and early childhood caries is devastating form of dental caries. Early childhood caries not only affects Child's quality of life but also has impact on health status.

Aim: The objective of this study was to evaluate association of early childhood caries with maternal caries status.

Materials & Methods: A total of 100 patients, pair of mother and child were selected for the study. The age group selected was children ranging from 12 to 36 months of age and their mothers, who were seeking dental care. Oral examination was done for both mother and child.

Results: The caries prevalence in children was 30.2 times higher in the mother who had decayed tooth, prevalence ratio [PR] = 30. Statistical significant association was found between mother and child caries status.

Conclusion: Mother's oral hygiene plays a very important role in caries status of child. Early childhood caries is a preventable disease and with increase in knowledge can help to overcome this issue.

Key words: Early Childhood Caries, Mother, Risk Factors, Mother's Behavior.

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INTRODUCTION

Oral health is very important factor in overall growth and development of a child and it should not be ignored. It affects quality of life, ability to speak, self-esteem, chewing habits etc. ignoring oral health can lead to dental caries.

Dental caries can be prevented if treated at an early stage. Dental caries when compared with other common disease is five times as frequent as asthma and seven times as common as hay fever.[1] Early childhood caries is the new term used in infants and toddlers.[2]

Early childhood caries is defined as the presence of 1 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 younger. In children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (S-ECC). From ages 3 through 5, 1 or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥4 (age 3), ≥5 (age 4), or ≥6 (age 5) surfaces constitutes S-ECC.[3]

Various risk factors are associated with early childhood caries like microbial, dietary factors, and environmental etc. Caulfield PW et al mentioned about vertical and horizontal transmission of bacteria from mother and care givers.[4] So the aim of our study was to evaluate association of early childhood caries with maternal caries status.

MATERIALS AND METHODS

100 patients with age between 12 to 36 months of age along with their mother were selected for the study. Out of 100 patients 60 were males and 40 females (Table 1). Distribution of children according to age was done (Table 2). Ethical committee clearance was obtained. Mothers accompanying child were explained about the study. A written informed consent was obtained from the patient before any procedure. Thorough examination of oral cavity was done for both child and mother using mouth mirror and explorer. Dental caries were diagnosed using Visual and tactile examination as specified by W.H.O.[5]

Following findings were observed:

1. Calculus
2. Plaque
3. Soft caries
4. Hard caries
5. White spot lesion
6. Gingival bleeding

Oral hygiene status was measured each for mother and child. Prevalence of caries was evaluated using decayed, missing and filled teeth (dmft and DMFT). Gingival bleeding was assessed using gingival bleeding score, 0 if bleeding was absent and was scored 1 in presence of bleedings. Mothers were interviewed for some basic questions on oral hygiene practices like brushing habits, frequency of brushing, used of dental floss etc.

Statistical Analysis

Each variable were analyzed and A *p*-value <0.05 was considered statistically significant. Data was analyzed by specific statistical software (IBMSPSS V10 STATISTICS, IBM, ARMONK, USA).

Table 1: Patient's demographic value

Mean age	12 to 36 months
Males	60
Females	40
TOTAL	n = 100

Table 2: Distribution of children according to age group

Groups	Frequency	Percentage
12-18	18	18%
19-22	28	28%
23-26	10	10%
27-30	15	15%
31-36	32	32%
Total	100	100%

p> 0.05; Not significant

Table 3: Eating Habits of Child

Bottle/breastfed to sleep	74%
Wake up at night and breastfed	72%
Added sugar	54%
Maternal sharing of utensils	42.3%

Graph 1: Distribution of frequency of eating habits

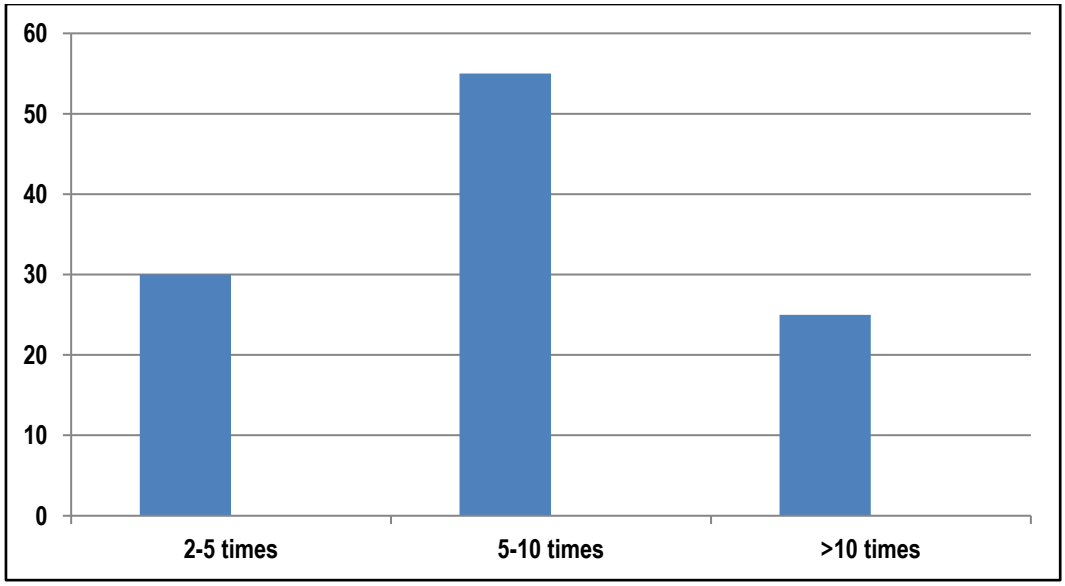

Table 4: Distribution of mother child oral hygiene status

Score	Oral hygiene status of child		Oral hygiene status of mother		p value
Poor	30	30%	28	28%	-
Fair	35	35%	45	45%	-
Good	35	35&	27	27%	-
Total	100		100		0.001

Table 5: Association between caries severity between mother and child

Variables in mother	Variables in child		PR	p value
	YES	NO	(CI-95%)	
Dental caries	69%	31%	30.2	<0.001
Gingival Bleeding	38%	52%	15.4	<0.001
Plaque	76%	24%	4.8	<0.001

RESULTS

A total of 100 mother and child pair was examined. Out of 100 children 18 % of children were caries free and 78% were affected by caries. On age distribution it was found that in our study maximum children i.e. 32% were aged between 31 to 36 months of age (Table 2). Based on the questions interviewed it was found that 52.4% mother were educated only till high school 15% received higher education whereas 32.6 were not educated. Severity of decay was higher among uneducated mothers. Out of 100 mother interviewed 74% said there child fall asleep with feeding bottles in mouth, 70% said there child has habit of waking up in night and were breastfed or bottle fed. 52% mothers said they added sugars to the milk (Table 3). The method of feeding showed significant association with caries activity. In our study

rate of caries were high for those children who had habit of night time feeding.

Out of 100 children 30% had habits of taking milk 2-5 times at night, 55% reported a frequency of 5 – 10 times and 25% reported more than 10 times (Graph 1). In our study correlation between mother and child oral hygiene status was found clinically significant i.e. p-0.001. It was found that caries prevalence in our study was 30.4 times in children whose mothers had dental caries. Gingival bleeding was found in 38% of mother as well as their children and visible plaque was evident in 76%, which was found to be highly significant.

DISCUSSION

Early childhood caries is devastating form of caries affecting both infants and preschool children. Most commonly affected teeth are maxillary incisors and Mandibular molars. Mandibular molars are lucky and they escape from ECC because salivary secretion from sublingual and Submandibular gland protects them. Miles and Ripa reported that Mandibular incisors generally are not affected, due to the child's tongue in the suckling position protecting these teeth from the cariogenic challenge.[6,7] Berkowitz in his study reported that elevated level of S mutans was evident in children suffering from early childhood caries.[8] In 1980 Berkowitz supporting his study said this S mutans are transferred from mother and care givers.[9]

Several authors have reported that the majority of U.S. preschool populations take, or have taken, a bottle to bed.[10,11] In our study 74% children were bottle fed to sleep and 72% were fed during night time (Table 3). According to American academy of paediatric dentistry breast feeding on demand after eruption of teeth is a risk factor in development of caries.[12]

In current study 54% reported use of additional sugar in milk. Increased risk of caries was found in infants who were bottle-fed 5 to 10 times during night time. Van Houte et al reported association between the intake of fermentable carbohydrates and MS acquisition in infants and found early onset of caries in such children.[13] Poor oral hygiene is considered to be important risk factor in causing caries. Oral health factor of mother is also considered as important risk factors by many authors. In our study a positive correlation was found between mother and Childs caries status (Table 5). Our study is in correlation with Ersin et al who reported increased in caries activity in children of mother who had decayed teeth.[14]

CONCLUSION

Most mothers are unaware of early childhood caries and there is lack of knowledge regarding caries. Within limits of our study we found that maternal caries are associated with early childhood caries. Better knowledge in early childhood caries can reduce the risk of it. Preventive educational program for both mother and children can proof beneficial. Feeding child during night time should be avoided and after feeding care should be taken to clean the mouth.

REFERENCES

1. Bagramian RA, Garcia-Godoy F, Volpe AR. The global increase in dental caries. A pending public health crisis. Am J Dent 2009 Feb;22(1):3-8.

2. Centers for Disease Control and Prevention (CDCP), conference. Atlanta, GA, September 1994.

3. Dentistry AAOP. Definition of early childhood caries (ECC). Reference Manual 2005-2006,2007.

4. Caufield PW, Cutter GR, Dasanayake AP. Initial acquisition of mutans streptococci by infants: evidence for a discrete window of infectivity. J Dent Res 1993 Jan;72(1):37-45.

5. Word helath organization. oral health survey; basic method Geneva , Switzerland, WHO, 1997.

6. Milnes AR: Description and epidemiology of nursing caries. J Public Health Dent 56(1):38-50, 1996.

7. Ripa LW: Nursing caries: a comprehensive review. Pediatr Dent 10:268-82, 1988

8. Berkowitz RJ, Turner J, Hughes C: Microbial characteristics of the human dental caries associated with prolonged bottle feeding. Arch Oral Biol 29:949-51, 1984.

9. Berkowitz R J, Turner J, Green P: Primary oral infection of infants with Streptococcus mutans. Arch Oral Bio 125: 221-24, 1980.

10. Kaste LM, Gift HC: Inappropriate infant bottle feeding. Status of the Healthy People 2000 Objective Arch PediatrAdolesc Med 149:786-91, 1995.

11. Powell D: Milk...Is it related to rampant caries of the early primary dentition? J Calif Dent Assoc 4:58-63, 1976.

12. American Academy of Pediatric Dentistry, Reference manual 2003-2004. Pediatr Dent. 2003;25:1–150.

13. vanHoute J, Gibbs G, Butera C (1982). Oral flora of children with 'nursing bottle caries'. J Dent Res 61:382-385.

14. Ersin NK et al. Association of maternal-child characteristics as a factor in early childhood caries and salivary bacterial counts. J Dent Child (Chic). 2006 May-Aug;73(2):105-11.

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