



Prevalence of dental caries in children attended Pedodontic dental clinic Al Mustansiria Collage of Dentistry

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Abstract

The purpose of the study to evaluate the dental caries in children at 4-11 years old of age in pedodontic dental clinic of Al-Mustansiria Collage of Dentistry. The total sample composed of 646 child 329 males and 317 females.

Results showed that the percentage of caries in the occlusal and inter proximal surfaces were higher in females at age 7-9 years old (51.3%.45.7%) than males (40.1%, 44.8%), with statistically high significant difference for both males and females ($P<0.01$).

The prevalence of dental caries for permanent dentition increase with age means (0.0006, 0.0099, 0.0263) for males and means (0, 0011, 0.0072 and 0.012)for females. For primary dentition also highly caries prevalence were showed with increase with age mean (0.077, 0.008 and 0.05) for males and (0.0868, 0.0776 and 0.068) for females .with no significant difference for both males and females.

Key wards: dental caries, children occlusal and interproximal surfaces.

Introduction

dentition. Within the primary, dentition dental caries also varies between first and second primary molars in both maxillary and mandible arch.

Primary teeth are much less susceptible to caries on their occlusal surfaces than the second primary molars erupt earlier.⁽⁵⁾

More than 40%of children develop caries in primary dentition by 6 years of age and more than 85% develop caries in the permanent dentition by age 17.⁽⁶⁾

Moreover, as dental caries doesn't affect teeth and tooth surfaces in the same way, it is appropriate to be aware the distribution.⁽⁷⁾ Caries in primary teeth is assign of high risk of caries in permanent teeth.

Dental caries is one of the most prevalent diseases of people worldwide. Dental caries forms through a complex interaction over time between acid producing bacteria and fermentable carbohydrate, and many host factors including teeth and saliva.^(1,2)

Mutans streptococci are the primary etiologic agent in human dental caries.⁽³⁾

Once the PH in the plaque drops below 5.5 the acid produced begins to demineralize the enamel, this procedure will last for 20 minutes or longer depending on the availability of substrate.⁽⁴⁾

The pattern of dental caries varies between the primary and permanent

calculated by using t-test and ANOVA test.

Results

Table (1) illustrated number and percentage of the sample at age of 4-6 years old, 49 male have 17.5% caries in the occlusal surface and 12.1% caries in the interproximal surfaces, while at the same age 53 female have 14.1% caries in the occlusal surface and 19.2% caries in the interproximal surface, table (2 and 3). Chi-square showed highly significant difference for both males and females in caries of the occlusal and interproximal surface.

No significant differences were found in caries experience in males in all age group while a high significant difference were found in DMFS, dmfs and dmft in females at age group and a significant difference were found in DMFT in all age group.

In males the statistical difference by using analysis of variance (ANOVA) concerning DMFS shows a significant difference between all age groups ($F=8.92$, $df=2$, $P < 0.05$), the analysis variance (ANOVA) concerning dmfs shows a significant difference between all age groups ($F=32.14$, $df=2$, $p < 0.05$), for DMFT it shows a significant difference between all age group ($F=15.05$, $df=2$, $p < 0.05$), for dmft it shows a significant difference between all age group ($F=34.12$, $df=2$, $p < 0.05$).

In female the statistical difference by using analysis of variance (ANOVA) concerning DMFS shows a high significant difference between all age groups ($F=22.72$, $df=2$, $p < 0.01$), for dmfs it showed a high significant difference between all age groups ($F=28.61$, $df=2$, $p < 0.01$), for DMFT it showed significant difference between all age groups ($F=6.63$, $df=2$, $p < 0.05$), for dmft it showed a high significant

The first permanent molars is the first permanent tooth to be erupted, it appears at age (6-7) years, so it is the most expected tooth to have dental caries and most probably missed due to caries.^(8,9)

Materials and methods

The study was carried out among 646 patient, 329 males and 317 females aged between 4-12 years old. The sample consisted of 49, 32, and 148 child at age 4-6, 7-9 and 10-12 years old who had attended the dental clinic in pedodontic and preventive department in Al-Mustansyria Collage of Dentistry with complaint of pain due to caries, during 7 months (November 2009 to May 2010). Each patient has been asked about name, age, address, hospitalization, medication, and habits. Environment exposures were similar for all subjects.

Examinations were carried out in the dental clinic on the dental chair under artificial light by using plane mouth mirror and sharp dental explorer. occlusal and inter proximal surfaces for posterior tooth were also examined.

According to American Dental Association Numbering System approach of teeth examination was followed, starting from the last upper right molar proceeding in an orderly manner from one tooth to the adjacent tooth space reached upper left last molar, then going to the lower left last molar and passing to the lower last right molar.

A coding system was applied for recording dental caries status of primary teeth and a numerical coding system for permanent teeth.⁽¹⁰⁾ Children's teeth were not air dried or cleaned prior to the examinations.

The results were tabulated, and the mean value for each age group was

primary teeth to emerge earlier than those of females.

Table(3) mentioned that at age of 4-6 years old the percentage of interproximal surfaces in males were 12.1% while in females were 19.2% this because the spaces between males teeth is more than in females teeth, this agree with Hikmat.⁽¹³⁾ who studied on 4-5 years old Iraqi children and found that in both arches the primate spaces were most frequently observed (81.7%) of females maxillary primate spaces, while in the mandible the percentage was(84.6%) of males and (72.5%) of females. At age 7-9 and 10-12 years old the occlusal and interproximal caries increased for both males and females, this agree with Ghaib⁽¹⁴⁾ who showed that there is no statistically significant differences between emergence time of corresponding right and left permanent teeth in both male and female in maxilla and mandible on 3000 school children aged (6-15) years old.

Dental caries was found to be increased with advanced age among primary permanent teeth. This finding is in agreement with many Iraqi studies (EL-Samarrai, Al-Obaidi and Al-Weheb)^(15, 16, and 17) and may be attributed to the fact that dental caries is chronic and incremental disease⁽¹⁸⁾. The girls had a higher caries experience than boys; this finding is, in agreement with many studies^(19, 20) attributed to early eruption of teeth.

References

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difference between all age groups ($F=21.92, df=2, p<0.05$).

LSD-test showed that in males at age 4-6 and 7-9 the dmft and dmfs was significant $p<0.05$, while the DMFT was highly significant $p<0.01$. the dmfs was no significant $p<0.05$.

At age group 4-6 and 10-12 the LSD test was highly significant in dmft ,DMFT and DMFS $p<0.01$ while the dmfs was no significant $p<0.05$. At age group 7-9 and 7-10 the LSD test was significant in dmft $p<0.05$, while it was highly significant in DMFT, dmfs and DMFS $p<0.01$

In female the LSD-test at age group 4-6 and 7-9 was significant in dmft $p<0.05$, significant in DMFT $p<0.01$ and non significant in dmfs and DMFS $p<0.05$. At age group 4-6 and 10-12 the LSD test was highly significant in dmft and DMFT $p<0.01$ and non significant in dmfs and DMFS $p<0.05$.

At age group 7-9 an 10-12 the LSD test was highly significant in dmft, DMFT and DMFS $p<0.01$, while it was significant in dmfs $p<0.05$.

Discussion

Table 2 and 3 showed that at age 7-9 years old females have more carious surfaces in both occlusal and interproximal teeth surfaces, this agree with Later Daood⁽¹¹⁾. The permanent teeth in females at all ages emerge earlier than those of males.

At age of 4-6 years old the percentage of occlusal caries in males were higher than in females(17.5%,14.1%).this may be due to the difference in eruption time of primary teeth between males and female, this finding agreed with Kamarco and Qasim⁽¹²⁾.

When studied the time and order of eruption of primary teeth of primary teeth of Iraqi children, and they founded that the males have their

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Table(1) No. and % of Groups

Class	Male		Female		Total	
	No.	%	No.	%	No.	%
4-6	49	14.9	53	16.7	102	15.8
7-9	132	40.1	142	44.8	274	42.4
10-12	148	45.0	122	38.5	270	41.8
Total	329	100	317	100	646	100

Table(2) No. and % of Carious occlusal surfaces for male & female

Class	Male		Female		Total	
	No.	%	No.	%	No.	%
4-6	119	17.5	101	14.1	220	15.8
7-9	272	40.1	366	51.3	638	45.8
10-12	288	42.4	247	34.6	535	38.4
Total	679	100	714	100	1393	100

*Chi-square=17.596 P<0.01 High significant

Table(3) No. and % of Carious inter proximal surface

Class	Male		Female		Total	
	No.	%	No.	%	No.	%
4-6	84	12.1	109	19.2	193	15.3
7-9	313	44.8	259	45.7	572	45.2
10-12	301	43.1	199	35.1	500	39.5
Total	698	100	567	100	1265	100

*Chi-square=15.574 P<0.01 High significant

Table (4) Mean & SD of DMFT, DMFS, dmft & dmfs

Gender	Age Group	DMFT		DMFS		Dmft		Dmfs	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Male	4-6	0.0006	0.0023	0.003	0.014	0.077	0.057	0.246	0.163
	7-9	0.0099	0.0172	0.041	0.056	0.088	0.07	0.217	0.123
	10-12	0.0263	0.0613	0.077	0.069	0.05	0.047	0.119	0.09
Female	4-6	0.0011	0.0037	0.0068	0.0232	0.0868	0.0657	0.244	0.156
	7-9	0.0072	0.0134	0.0372	0.0606	0.0776	0.0666	0.209	0.108
	10-12	0.012	0.025	0.054	0.0725	0.068	0.0567	0.177	0.112