

Gingival health status among 3-5 years old children in Al-Edwania village, Baghdad

Wesal A. Al-Obaidi, B.D.S., M.Sc.⁽¹⁾

ABSTRACT

Background: Periodontal disease is one of the most widespread diseases in Iraq therefore this study was conducted to assess the periodontal condition.

Materials and methods: A sample of 91 children living in AL-Edwania village was examined using plaque and gingival indices.

Results: It showed a high prevalence of gingival inflammation, gingival inflammation increased with age, and females had a significantly higher gingival index mean than males. The mild type of gingivitis was found to be the highest score. Higher gingival and plaque index means in posterior segment were demonstrated than that in anterior segment.

Conclusion: The most common type of gingivitis was the mild. The GI and PII were increased with age and higher among females.

Keywords: Gingivitis, children, Al-Edwania village. (J Coll Dentistry 2005; 17(2):84-86)

INTRODUCTION

Periodontal disease is one of the most widespread diseases, all nations and regions in the world have this disease⁽¹⁾. Epidemiological studies on prevalence and severity of periodontal disease in Iraq are concentrated mostly on adults^(2,3,4) while a few studies have been conducted concerning the gingival health condition of children specially in rural areas^(5,6), therefore, this study was designed to estimate the oral hygiene and gingival inflammation among children in AL-Edwania village which is situated 30km west Baghdad city, to obtain a baseline data aids for comparison with other studies.

MATERIALS AND METHODS

The sample size of the study was composed of 91 children whose ages ranged between 3-5 years. The sample was selected randomly from different areas of AL-Edwania village. Sharp sickle-shaped caries explorers (No.00) and plane mouth mirrors (No.4) with natural light were used for oral examination. Oral hygiene was assessed using the plaque index,⁽⁷⁾ while gingival condition was assessed using the criteria of gingival index system.⁽⁸⁾ Index teeth of Ramfjord⁽⁹⁾ were examined to represent the whole dentition. Only fully erupted teeth were scored, if the index tooth was partially erupted or missing, the segment

would be excluded. For statistical analysis, student T-test was used.

RESULTS

Distribution of the sample according to age and sex is shown in Table (1). The total sample consisted of (91) children, (49) males and (42) females. Table (2) shows that although girls had a higher mean PI than boys, it was not significant. The total means PI was found to be (1.16). The PI and GI scores were increased with age (Tables 2, 3). Table (3) revealed that girls had a significantly higher mean GI than boys for the total sample. PI and GI for anterior teeth were found to be significantly lower than that for posterior teeth ($P < 0.05$) (Table 4). Table (5) demonstrated that (91.3%) of the children were with gingival inflammation, where as (8.7%) of them were with healthy gingiva. The highest percentage of affected children was found to be with mild gingivitis.

DISCUSSION

This study showed that PI mean and GI mean were high, this finding is in agreement with Sadki's study⁽⁵⁾ and in disagreement with AL-Obaidi's study,⁽¹⁰⁾ which may be attributed to type of the geographical location (whether it was urban or rural), that rural people had higher scores than those in other areas.^(3, 11) Although different indices were used, the comparison with other studies showed that gingival inflammation increased with age, this finding is in accordance with many previous

(1) Assistant professor, Department of Pedodontics and Preventive Dentistry, College of Dentistry, Baghdad University.

studies. (5,6,10) This study indicated a high prevalence of gingival inflammation, this comes in accordance with other studies, (3, 6, 12) and it may be attributed to the poor oral hygiene, and that there was a strong correlation between the prevalence and severity of periodontal disease and oral hygiene and it was documented, (3, 7) this study revealed that GI was significantly higher in posterior than in anterior segment, this finding was in accordance with many studies. (5, 12)

Females had a significantly higher GI mean than males; this finding was in disagreement with many studies (3, 5, 10) and in agreement with EL-Samarrai's study. (12) The data showed that the mild type of gingival inflammation had the highest percentage among children, this was in agreement with other studies (10, 13) and in disagreement with AL-Sayyab's study (3) and it may be due to the fact that the commonest type of gingivitis in early childhood is the mild one and that the severity increases with age.

Table 1: Distribution of children according to age and sex.

Age	Male		Female		Both	
	No.	%	No.	%	No.	%
3	11	12.09	12	13.18	23	25.27
4	20	21.98	11	12.09	31	34.07
5	18	19.78	19	20.88	37	40.66
All Ages	49	53.85	42	46.15	91	100.00

Table 2: Plaque index and standard deviation of the mean by age and sex.

Age	Boys			Girls			Both		
	No.	Mean	±S.D	No.	mean	±S.D	No.	mean	±S.D
3	11	0.76	0.50	12	0.93	0.42	23	0.85	0.46
4	20	1.05	0.42	11	1.20	0.42	31	1.10	0.42
5	18	1.31	0.48	19	1.48	0.77	37	1.39	0.64
All Ages	49	1.08	0.50	42	1.25	0.63	91	1.16	0.57

Table 3: Gingival index and standard deviation of the mean by age and sex

Age	Boys			Girls			Both		
	No.	Mean	±S.D	No.	Mean	±S.D	No.	Mean	±S.D
3	11	0.64	0.31	12	0.58	0.45	23	0.52	0.39
4	20	0.54	0.37	11	0.84*	0.32	31	0.65	0.38
5	18	0.94	0.79	19	1.22	0.85	37	1.08	0.82
All Ages	59	0.67	0.58	42	0.94**	0.68	91	0.73	0.56

*t=2.19, P<0.05, d.f=29

** t=2.10, p<0.05, d.f=89

Table 4: Plaque index and gingival index of anterior and posterior segments.

Age	Sex	No.	PII		GI	
			Ant Mean±SD	Post Mean±SD	Ant Mean±SD	Post Mean±SD
3	M	11	0.77±0.48	0.74±0.53	0.41±0.37	0.53±0.30
	F	12	0.83±0.39	0.98±0.46	0.46±0.40	0.64±0.49
	Both	23	0.80±0.43	0.86±0.50	0.44±0.38	0.59±0.40
4	M	20	0.96±0.41	1.13±0.39	0.47±0.49	0.60±0.44
	F	11	1.05±0.49	1.23±0.46	0.65±0.37	0.91±0.36
	Both	31	0.99±0.43	1.16±0.41	0.53±0.45	0.71±0.44
5	M	18	1.06±0.59	1.39±0.50	0.78±0.83	1.01±0.80
	F	19	1.32±0.83	1.53±0.76	1.03±0.92	1.27±0.87
	Both	37	1.19±0.72	1.46±0.64	0.91±0.87	1.14±0.84
All ages	M	49	0.95±0.50	1.13±0.52	0.57±0.63	0.73±0.61
	F	42	1.11±0.67	1.29±0.65	0.77±0.71	1.00±0.71
	Both	91	1.02±0.58	1.21±0.59*	0.66±0.67	0.86±0.67**

*t=2.18, P<0.05, d.f=180

**t=2.01, p<0.05, d.f=180

Table 5: Distribution of children in relation to severity of gingival inflammation by sex.

Scores	Male		Female		Both	
	No.	%	No.	%	No.	%
0	4	8.1	4	9.5	8	8.7
0.1-1	38	77.6	26	61.9	64	70.3
1.1-2	6	12.3	10	23.8	16	17.6
2.1-3	1	2	2	4.8	3	3.4

REFERENCES

- 1- WHO. Epidemiology, etiology and prevention of periodontal disease. Technical Report Series; 1978, No. 621. WHO Geneva, Switzerland.
- 2- Ghali R. Oral health status and treatment needs among students of Baghdad University. (Thesis) ; 1989.
- 3- AL-Sayyab M. Oral health status among 15-year-old school children in central region of Iraq. (Thesis) ; 1989.
- 4- Rawenduzy K. Pattern of periodontal breakdown among a selected adult population living in rural areas in the southern part of Iraq. (Thesis) ; 1992.
- 5- Sadki M, AL-Azawi L. Gingival health status among children and teenagers in Badran village, Baghdad. Iraqi Dent J 1997; 20: 139-44.
- 6- AL-Sayyab M. Periodontal treatment needs among Iraqi children living in two Iraqi villages, Sheha and Albu Etha. J College of Dentistry 1995; Accepted for publication.
- 7- Silness J, Loe H. Periodontal disease in pregnancy II. Correlation between oral hygiene and periodontal condition. Acta Odont Scand 1964; 22: 121-35.
- 8- Loe H, Silness J. Periodontal disease in pregnancy. Acta Odont Scand 1963; 21: 533-51.
- 9- Ramfjord SP. Indices for prevalence and incidence of periodontal disease. J Periodontol 1959; 30: 51-9.
- 10- AL-Obaidi W. Oral health status in relation to nutritional status among kindergarten children in Baghdad, Iraq. (Thesis) ; 1995.
- 11- AL-Alousi W, Legler D, Janison H. Methods for a survey of oral health of secondary school students in Iraq. Iraqi J Dent Res 1981; 2: 33.
- 12- EL-Samarrai S. Oral health status and treatment needs among preschool children in Baghdad, Iraq. (Thesis) ; 1989.
- 13- Stamm JW. Epidemiology of gingivitis. J Clin Periodontol 1986; 13: 360-6.