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Original Research

Assessment of Periodontal Diseases among 8 to 14 year Old Children

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ABSTRACT:

Background: Results from the past studies show that gingivitis and periodontitis of varying severity is nearly universal in children and adolescents. Hence; under the light of above mentioned data, the present study was undertaken for analysing the periodontal diseases among children of 8 to 14 years of age. **Materials & Methods:** A total of 400 children reporting to the pediatric dentistry department were analyzed. Complete demographic details of all the children were recorded. Clinical examination of all the children was carried out using a mouth mirror and a William's probe. Only patients within the age group of 8 to 14 years were analyzed. Gingival index (GI) was assessed in all the patients. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. **Results:** A total of 88 children were affected with periodontal pathologies. Therefore, prevalence of periodontal diseases among the present study population was 22 percent. Non-significant results were obtained while comparing the age-wise and gender-wise distribution of patients with periodontal diseases. Among the patients with the age group of 8 to 10 years, the mean gingival index per patients was 0.44 while the mean pocket depth was 1.75 mm per patient. Among patients with 10 to 12 years of age, mean gingival index per patients was 0.98 while the mean pocket depth was 2.12 mm per patient. **Conclusion:** A pediatric dentist should have thorough knowledge of various periodontal pathologies affecting children population, along with interdisciplinary treatment required for handling such patients.

Key words: Children, Periodontal diseases, Prevalence.

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INTRODUCTION

Epidemiologic studies indicate that gingivitis of varying severity is nearly universal in children and adolescents. These studies also indicate that the prevalence of destructive forms of periodontal disease is lower in young individuals than in adults.[1- 3]Children and adolescents can have any of the several forms of periodontitis as described in the proceedings of the 1999 International Workshop for a Classification of Periodontal Diseases and Conditions (aggressive periodontitis, chronic periodontitis, and periodontitis as a manifestation of systemic diseases). However, chronic periodontitis is more common in adults, while aggressive periodontitis may be more common in children and adolescents.[4, 5]Successful treatment of aggressive periodontitis depends on early diagnosis, directing therapy against the infecting microorganisms and providing an environment for healing that is free of infection.[6, 7] Hence; under the light of above mentioned data, the present study was undertaken for analysing the periodontal diseases among children of 8 to 14 years of age.

MATERIALS & METHODS

The present study was conducted in the department of pediatric dentistry of the dental institute and it included assessment of periodontal diseases among children of 8 to 14 years of age. Ethical approval was obtained from institutional ethical committee and written consent was obtained from parents/guardians of all the patients after explaining in detail the entire research protocol. A total of 400 children reporting to the pediatric dentistry department were analyzed. Complete demographic details of all the children were recorded. Clinical examination of all the children was carried out using a mouth mirror and a William's probe. Only patients within the age group of 8 to 14 years were analyzed. Gingival index (GI) were assessed in all the patients based on criteria described previously in the literature. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS

software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

RESULTS

Prevalence of periodontal pathologies in the study population is shown in Table 1. In the present study, a total of 400 children within the age group of 8 to 14 years were analyzed. Among this study population, a total of 88 children were affected with periodontal pathologies. Therefore, prevalence of periodontal diseases among the present study population was 22 percent.

Table 2 shows the age and gender-wise destitution of patients with periodontal pathologies. In the present study, mean age of the patients with periodontal diseases was 11.8 years. Majority of the patients with periodontal diseases in the present study belonged to the age group of 10 to 12 years. 37.5 percent of the patients of the present study belonged to the age group of 12 to 14 years. Only 22 percent of the patients were between the age group of 8 to 10 years. Non-significant results were obtained while comparing the age-wise distribution of patients with periodontal diseases. 56.8 percent of the patients with periodontal pathologies were males while the remaining 43.2 percent of the patients with periodontal pathologies were females. Non-significant results were obtained while comparing the gender-wise distribution of patients with periodontal diseases. Table 3 shows the mean gingival index and pocket depth in patients with periodontal diseases. Among the patients with the age group of 8 to 10 years, the mean gingival index per patients was 0.44 while the mean pocket depth was 1.75 mm per patient. Among patients with 10 to 12 years of age, mean gingival index per patients was 0.98 while the mean pocket depth was 2.12 mm per patient.

Table 1: Prevalence of periodontal pathologies in the study population

Parameter	Number
Number of patients with periodontal pathologies	88
Percentage of patients with periodontal pathologies	22 percent

Table 2: Age and gender-wise destitution of patients with periodontal pathologies

Parameter		Number of patients	Percentage of patients	p-value
Age group (years)	8 to 10	20	22.7	0.15
	10 to 12	35	39.8	
	12 to 14	33	37.5	
Gender	Males	50	56.8	0.33
	Females	38	43.2	

Table 3: Mean gingival index and pocket depth in patients with periodontal diseases

Age-group (years)	Number of patients	Mean gingival index/ patient	Mean pocket depth/ patient (mm)
8 to 10	20	0.44	1.75
10 to 12	35	0.58	2.12
12 to 14	33	0.98	2.30

DISCUSSION

In medical dictionaries, the word periodontium comes from the Greek terms peri-, which means “around,” and -odons, which means “tooth.” Literally, it means that which is around the tooth. Periodontium includes the tissues that surround and support the teeth. Those tissues are gingiva, cementum, periodontal ligaments, and alveolar bone. A long time ago, it has been found that periodontium of the primary dentition differs from that of the permanent dentition in several aspect.[6- 8]

In the present study, a total of 400 children within the age group of 8 to 14 years were analyzed. Among this study population, a total of 88 children were affected with periodontal pathologies. Therefore, prevalence of periodontal diseases among the present study population was 22 percent.Epidemiological studies suggest that gingivitis is common in children and adolescent and untreated cases may progress to severe breakdown of periodontium and loss of teeth in the adult. Although the prevalence of destructive forms of periodontal diseases is lower in young individuals than in the adults, cases describing radiographic evidence of bone loss around primary dentition in children have been documented. It has been reported that chronic mild gingivitis characterized by the presence of gingival inflammation without detectable loss of bone is common in children. Early diagnosis of gingival diseases and appropriate therapeutic measures can ensure greater chances to prevent future periodontal diseases.[7- 9]

In the present study, mean age of the patients with periodontal diseases was 11.8 years. Majority of the patients with periodontal diseases in the present study belonged to the age group of 10 to 12 years. 37.5 percent of the patients of the present study belonged to the age group of 12 to 14 years. Only 22 percent of the patients were between the age group of 8 to 10 years. Non-significant results were obtained while comparing the age-wise distribution of patients with periodontal diseases. Chronic periodontitis with slow rate of progression and no site specificity with attachment and bone loss consistent with local irritating factors of plaque demonstrates predominantly horizontal pattern of bone loss with extent determined by percentage of site involvement. AP occurs in localized and generalized forms. Localized AP (LAP) has a circumpubertal onset with interproximal attachment loss in at least two permanent teeth, out of which one being a permanent first molar with two or fewer permanent teeth other than the first molars or incisors involved.[9- 11]

In the present study, 56.8 percent of the patients with periodontal pathologies were males while the remaining 43.2 percent of the patients with periodontal pathologies were females. Non-significant results were obtained while comparing the gender-wise distribution of patients with periodontal diseases. Balaji SK et al estimated the prevalence of chronic periodontitis in a sample urban population (<18 years) in Tamil Nadu. A total of 1000 individuals (<18 years) were selected and screened for their periodontal status, oral hygiene status (OHI), and the periodontal inflamed surface area (PISA) in an outreach

center located in Chennai, India. A high prevalence of periodontal disease was observed in the study population (42.3%). Among the urban participants, age, cigarette smoking, pan chewing, decayed, missing, and filled teeth scores, OHI scores, and PISA scores were found to be significantly associated with periodontitis ($P < 0.05$). Periodontitis prevalence appears to be high even in areas with adequate access to oral health care and an inflammatory burden risk exists in a definitive manner.[11]
In the present study, among the patients with the age group of 8 to 10 years, the mean gingival index per patients was 0.44 while the mean pocket depth was 1.75 mm per patient. Among patients with 10 to 12 years of age, mean gingival index per patients was 0.98 while the mean pocket depth was 2.12 mm per patient.Goswami S et al determined the prevalence of gingivitis and periodontitis among preschool children in Kolkata. The gingival index (GI) and pocket depth of fully erupted teeth of 200 children were measured. The comparison (t-test) of mean pocket depth was least (0.89 mm) between 3- and 4-year-old children and was highest (3.09 mm) between 2- and 4-year-old children. The mean GI among boys and girls differ significantly ($P < 0.001$). The boys had a higher GI and pocket depth than girls the mean GI in school going children was 0.67 ± 0.22 and in nonschool going children, it was 1.189 ± 0.12, and mean pocket depth was 2.05 ± 0.32 and 2.77 ± 0.55, respectively. The mean GI and pocket depth in children of upper and lower socioeconomic condition differ significantly. Preschool children in and around Kolkata suffered from varying degree of gingival diseases, and comprehensive preventive programs are needed to improve their oral health.[12]

CONCLUSION

Under the light of above obtained data, the authors conclude that a pediatric dentist should have thorough knowledge of various periodontal pathologies affecting children population, along with interdisciplinary treatment required for handling such patients. However; further studies are recommended.

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