



Pattern of juvenile periodontitis in Lagos University Teaching Hospital Dental Centre

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Abstract

Objective: The aim of the survey was to study the pattern of juvenile periodontitis patients that presented at the Lagos University Teaching Hospital Dental Centre from November 1999 to March 2004.

Methods: Through review of case files of patients, twenty six juvenile periodontitis patients, within the age range of 18 and 30 years were identified and their dental records reviewed.

Results: There were 11 males and 15 females, giving a male female ratio of 0.73:1. Overall, the maxillary and mandibular incisors were the most missing tooth type (47.54%), particularly in the 20 - 24 year age group. Comparatively, more incisors were missing in females compared to males. Conversely, tooth mobility was more common in males; 60% of severely mobile teeth were seen in males. These patients were found to have poor facial aesthetics.

Conclusion: Given the late presentation of juvenile periodontitis found in the study, it is recommended that check-ups of patients at the dental clinics for early diagnosis of juvenile periodontitis and regular check-ups to prevent the rapid progression of this condition in juveniles should be

Introduction

Juvenile periodontitis (JP) is a manifestation of early-onset periodontitis. It has been defined as severe attachment and bone loss around the first molars and incisors (localized type) and involving more than two additional non-firsts molar or incisor teeth (generalized type).¹ Bear also defined JP as a rapidly progressive clinical condition different from adult periodontitis since it starts from around puberty and occurs commonly in females with some familial disposition.^{2,3}

The prevalence of JP varies according to race. In a study of 5,000 American naval recruits, Blacks were 21 times more likely to be affected than Whites.⁴ Furthermore; the study found that Black males were twice as likely as Black females to have JP whereas White females were four times more likely than White males. In another study of American subjects between 14 and 17 years, the prevalence of JP was 5 times higher in Blacks compared to Whites.⁵

Typically, juvenile periodontitis occurs in individuals between the ages of 12 and 26 years. Credible reports have established both a microbial component and other interacting host factors to its etiology.^{3,4} Microorganisms

Capnocytophaga species have been isolated in cases of periodontitis. These studies have highlighted various reasons to explain the pattern of attendance of these patients at dental clinics and they include proclined incisors mobile, migrating and missing teeth, formation of diastema, occasional pain and associated periodontal abscess.^{6,7} This report therefore aims at determining the pattern of clinical presentation of juvenile periodontitis in a hospital-based setting with a focus on missing teeth and tooth mobility.

Methodology

A four-year retrospective case review of records of patients seen at the Dental Clinic of the Lagos University Teaching Hospital, Nigeria was undertaken. Between November 1999 and March 2004, 8,105 patients were attended to at the clinic. Review of the records showed that 26 patients had been diagnosed as having juvenile periodontitis within the period. The case records of all these patients with a diagnosis of juvenile periodontitis were retrieved from both the oral diagnosis clinic and dental records unit and relevant information regarding sex, age, presenting complaint, missing and present teeth and mobility of teeth were extracted and recorded.

Table 1: Age and sex distribution of the patients

Age group in years	Sex (%)		Total (%)
	Male (%)	Female (%)	
15 - 19	1 (3.8)	0 (0)	1 (3.8)
20 - 24	5 (19.2)	10 (38.5)	15 (57.7)
25 - 29	4 (15.4)*	3 (11.5)*	7 (26.9)
30 and above	1 (3.8)**	2 (7.7)*	3 (11.5)
Total	11 (42.3)	15 (57.7)	26 (100)

X² = 2.10, df = 2, p = 0.35
* Collapsed for statistical analysis

Table 2: degrees of tooth mobility in the various age group number of mobile teeth in the 26 patients (%)

Age Group (Years)	Degree of tooth mobility			Total (%)
	I (%)	II (%)	III (%)	
15 - 19	2 (0.9)	2 (0.9)	10 (4.5)	14 (6.4)
20 - 24	32 (14.5)	34 (15.5)	17 (7.7)	83 (37.7)
25 - 29	72 (32.7)	21 (9.5)	11 (5)	104 (47.3)
30	12 (5.5)	2 (0.9)	5 (2.3)	19 (8.6)
Total	118 (53.6)	59 (26.8)	43 (19.5)	220 (100)

Teeth mobility was categorized into three groups of I, II and III.³ Grade I - Just discernible 0.2 - 1mm movement in a horizontal direction. Grade II easily discernible and over 1mm labiolingual displacement and Grade III - Well-marked labiolingual displacement, mobility of the tooth up and down in an axial direction.³ The oral cleanliness of these groups of patients was good to satisfactory.³

Data were subsequently analyzed using the statistical software SPSS version 11. Descriptive statistics, Chi-square tests were used as appropriate. Significance was inferred at P-levels less than 0.05.

Results

Of the 26 cases of juvenile periodontitis seen during the period under review, 11 were males while 15 were females giving a male: female ratio of 1:1.4. There was no statistically significant difference in the gender distribution within the various age groups (P = 0.35). The ages of the patients ranged from 18 to 30 years with a mean age of 24 years ± 3.5 years. The mean ages for males and females were 24.2 ± 4.07 and 23.9 ± 3.08 years respectively. The difference in the mean ages by sex was not statistically significant. Majority of them, 84.6% were within the third decade of life with those in the 20 - 24 years age group accounting for 57.7% of the cases (Table 1).

The degree of tooth mobility seen in the various age groups is shown in Table 2. Overall, there were 220 mobile teeth in the 26 patients. Grade I mobility (53.6%) was the commonest in all cases, followed by grades II (26.8%) and III (19.5%). Similarly, patients in the third decade of life recorded the highest incidence of tooth mobility with the 25 - 29 and 20 - 24 years age brackets accounting for 47.3 and 37.7% respectively. There were also appreciable reductions in the number and severity of mobile teeth with increase in the age of patients.

Male subjects (39.1 %) presented with fewer mobile teeth than their female (69.1 %) counterparts (Table 3) and the differences were statistically significant (P < 0.05). Furthermore, more males recorded grade III type mobility unlike in the grades I and II where females recorded higher numbers.

A total of 83 teeth were observed to be missing in all cases (Table 4). The incisors were the most frequently missing (68.7%) followed by the first molars (19.3%). Patients in the third decade also recorded the highest number (72.3%) of missing teeth with those in the 20 - 24 years age bracket accounting for 48.2%. With increasing age, the number of missing teeth reduced. There were more missing teeth in females compared to their male counterparts and this was statistically significant (P = 0.02). While females had a

Table 3: degrees of tooth mobility according to gender

Gender	Degree and number of mobile teeth (%)			Total (%)
	I (%)	II (%)	III (%)	
Female	99 (45)	36 (16.4)	17 (7.7)	152 (69.1)
Male	19 (8.6)	23 (10.5)	26 (11.8)	68 (30.9)
TOTAL	118 (53.6)	59 (26.8)	43 (19.5)	220 (100)

X² = 31.5, df = 2, P = 0.00.

Table 4: Distribution of missing teeth by age and sex

Variable	Type and number of missing teeth				Total
	Incisors	Ist molar	Premolars	Other molars	
Age group					
15 -19	4 (4.8)	2 (2.4)	1 (1.2)	0 (0)	7 (8.4)
20 – 24	29 (34.9)	7 (8.4)	3 (3.6)	1 (1.2)	40 (48.2)
25 – 29	11 (13.3)	6 (7.2)	3 (3.6)	0 (0)	20 (24.1)
30	13 (15.7)	1 (1.2)	1 (1.2)	1 (1.2)	16 (19.3)
Total	57 (68.7)	16 (19.3)	8 (9.2)	2 (2.4)	83 (100)
Sex					
Male	20 (24.1)	10 (12)	6 (7.2)*	1 (1.2)*	37 (44.6)
Female	37 (44.6)	6 (7.2)	2 (2.4)*	1 (1.2)*	46 (55.5)
Total	57 (68.7)	16 (19.3)	8 (9.6)	2 (2.4)	83 (100)

higher number of missing incisors, conversely, there were more cases of missing first molars and premolars among males (Table 4).

Discussion

Juvenile periodontitis (JP) occurs in children and young adults in otherwise healthy individuals.³ The early loss of teeth seen in JP can be distressing for affected individuals as it is aesthetically unpleasant. Several epidemiological studies have described the prevalence of JP to be 0.1% to 20%.⁷ This very wide range may reflect either varying criteria of case definition and if true, possibly differences due to geographic and racial factors.⁸

The higher relative prevalence of JP among females found in this study is comparable to findings from other studies.^{9, 10} Recent reports have presented strong evidence that the reported predominance in females could be explained by case ascertainment bias.^{4, 11, 12} This occurs because of the tendency for females to seek assistance for dental care earlier than their male counterparts and also because of the failure of male relatives of probands to respond to invitations to participate in family-based studies of JP.

It is generally accepted that the age of onset of JP is at or around puberty, although clinical presentation is often much later and the lesion may have progressed extensively before a diagnosis is made.^{7, 11} The findings of the present study are consistent with this observation and similar to the findings by Arowojolu, where peak age of presentation was beyond the circumpubertal period⁶. The painless and insidious nature of JP as well as poor utilization of dental services by Nigerians except when there is a felt need may be responsible for these differences.¹³

It is noteworthy that an appreciable proportion of patients with JP presented with both Grades II and III mobility. This might be due to the fact that young adults with JP in many instances have advanced periodontal destruction before they present themselves at the dental clinic.

agreement with a previous Nigerian study, which reported higher occurrence than in developed countries.¹⁴ Figures quoted for missing maxillary and mandibular central incisors were 23 and 10% compared with 2 and 0.5% in the United Kingdom. The high mortality of incisors amongst adolescents in that study was attributed to prevalence of periodontal disease.

In conclusion, public enlightenment should be intensified, highlighting the need for individuals with dental problems to present early to the dentist in order to avoid the rapid progression, and functional and aesthetic complications of JP.

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