



A Retrospective Study of Some Socio-Demographic Factors Associated with Pericoronitis in Nigerians.

Une étude rétrospective de certains facteurs socio-Demographic associés à Pericoronitis dans Nigériens

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ABSTRACT

BACKGROUND: Pericoronitis is an infectious disease of the operculum overlying an erupting or semi-impacted tooth particularly the lower third molars. It is a painful, sometimes debilitating and common periodontal emergency commonly found in young adults.

OBJECTIVE: The purpose of this study was to determine the socio-demographic factors related to pericoronitis among Nigerians and compare these factors to other similar studies.

METHODS: The patients included in this retrospective study were those who with a diagnosis of pericoronitis from January 2000 to December 2006. Socio-demographic and clinical data such as sex, age, tooth/teeth affected by pericoronitis and date of presentation were retrieved from the records of the Oral Diagnosis Clinic

RESULTS: During the study period, 373 patients presented with pericoronitis, 222 (59.5%) were female and 151 (40.5%) were male. The peak age of occurrence of pericoronitis was 19–23 years, accounting for 170 (45%) of the patients. The occurrence of pericoronitis was highest in the month of February, 67 (18%), followed by January (14.5%). The lower left third molar 169(45.3%) was more affected than the lower right third molar 138(37.1%) or combination of either lower third molars 66(17.7%). More females 136(68.1%) than males 64(32.3%) were affected particularly in the younger age groups 14-23 years.

CONCLUSION: Pericoronitis occurs more often in adult female Nigerians while the lower left third molar is the commonest tooth associated with this condition. Further studies are required to elicit the predisposing factors in this group of Nigerians. *WAJM* 2007; 26(4): 302–305.

Keywords: *Pericoronitis, Socio-demographic factors, Molar teeth, in Pericoronitis, Dentistry, Preventive ad Pericoronitis*

RESUME

CONTEXTE: Pericoronitis est une maladie infectieuse de l'opercule en éruption recouvrant une ou semi-dent particulièrement touché le tiers inférieur molaires. C'est un douloureux, débilitants et parfois commune parodontale urgence communément trouvées chez les jeunes adultes.

OBJECTIF: L'objectif de cette étude était de déterminer les facteurs socio-démographiques liés à pericoronitis entre Nigériens et comparer ces facteurs à d'autres études similaires.

METHODES: Les patients inclus dans cette étude rétrospective étaient ceux qui, avec un diagnostic de pericoronitis de janvier 2000 à décembre 2006. Socio-démographiques et des données cliniques telles que le sexe, l'âge, la dent affectée par pericoronitis et de la date de présentation ont été retrouvés sur les dossiers de l'oral Diagnostic Clinique

RÉSULTATS: Au cours de la période d'étude, 373 patients présentaient avec pericoronitis, 222 (59,5%) étaient de sexe féminin et 151 (40,5%) étaient de sexe masculin. Le pic de l'âge de survenue des pericoronitis a 19-23 ans, qui représente 170 (45%) des patients. La survenue de pericoronitis était le plus élevé au cours du mois de février, 67 (18%), suivie de janvier (14,5%). La troisième molaire inférieure gauche 169 (45,3%) a été plus touchée que la troisième molaire inférieure droite de 138 (37,1%) ou la combinaison des deux tiers inférieur molaires 66 (17,7%). Plus de filles 136 (68,1%) que chez les hommes 64 (32,3%) ont été particulièrement touchés appartenant aux groupes d'âge 14-23 ans.

CONCLUSION: Pericoronitis survient plus souvent chez les femmes adultes Nigériens en bas à gauche tandis que le troisième molaire est la dent associés à cette condition. D'autres études sont nécessaires pour obtenir les facteurs de prédisposition dans ce groupe de Nigériens. *WAJM* 2007; 26(4): 302–305.

Mots-clés: *Pericoronitis, facteurs socio-démographiques, molaire dents, dans Pericoronitis, de dentisterie, de prévention ad Pericoronitis*

INTRODUCTION

Pericoronitis is an inflammatory and infective condition of the soft tissues contiguous to and overlying a tooth crown, most frequently encountered in the lower third molars.¹ It is one of the common periodontal emergencies presenting in late adolescents and young adults.²

The term, *pericoronitis* was first introduced to the dental literature by Bloch in 1921.¹ Difficult menstruation^{3,4} virulence of bacteria, low resistance and iron deficiency anemia,^{5,6} mental stress, physical fatigue and concurrent illness such as upper respiratory tract infection^{5,7,8,9} including poor oral hygiene and opposing tooth cuspal trauma have been found implicated in the aetiology of this condition. Recently, malaria was suggested as a predisposing factor among Nigerians.¹⁰

The symptoms of this lesion may range from mild discomfort to a very painful state. The sequelae of such an infection is well recognised, as it may spread anteriorly or posteriorly along the fascial planes to involve the vestibular, buccal, submasseteric, submental, submandibular and pterygoid spaces.¹¹ The clinical effects of this could be trismus, swelling of the face, cellulitis, extra-oral sinus formation and Ludwig's angina, which are of considerable clinical importance. Patients are therefore to be well informed about therapeutic alternatives, possible complications and the consequences of no treatment.¹²

The increasing prevalence of *pericoronitis* as reported in another study⁴ with the recent association with malaria and the relatively few reported studies in this environment has necessitated its retrospective appraisal. Therefore, an initial survey of some socio-demographic factors of this condition is investigated and compared with similar studies.

SUBJECTS, MATERIALS AND METHODS

This was a retrospective study. The information for this study was retrieved from the oral diagnosis clinic daily record book of the Lagos University Teaching Hospital Dental Centre from January 2000 to December 2006. The oral diagnosis

clinic of the department of Preventive Dentistry is the first point at which a patient reports for dental consultation in our centre. Cases of *pericoronitis* were selected from the record book of the clinic and biographical information such as sex, age and date of presentation noted. The affected tooth or teeth were also noted from the records. The total number of patients seen over the same period was also retrieved. A diagnosis of *pericoronitis* was made based on a study by Better et al¹³ i.e. the presence of the following features: Pain or tenderness of a swollen operculum over a partially or fully erupted third molar, presence of trismus or pus discharge.

The number of diagnosed cases of *pericoronitis* over this period was 373. Patients were divided into six 5-year age groups ranging from 14 years to 39 years and over. The data obtained were statistically analysed using EPI-Info 6.04 statistical software. The incidence rates and frequencies were also determined. Statistical significance was put at $p < 0.05$.

RESULTS

During the study period, 373 patients whose ages ranged from 14 years to 39 years and above.

With a mean (SD) age of 24.73(6.14) years were diagnosed with *pericoronitis*.

There were more females 222 (59.5%) than males 151 (40.5%) seen. The peak age of incidence of *pericoronitis* was in the 19-23 year age group (45.6%) followed by the 24-28 year age group (26.3%) and the 29-33 year age group (11%). The least affected (<10%) were the 14-18 year age groups and the 29 year age groups and above (Fig. 1).

The lower left third molar was the most common site of *pericoronitis* 169(45.3%),

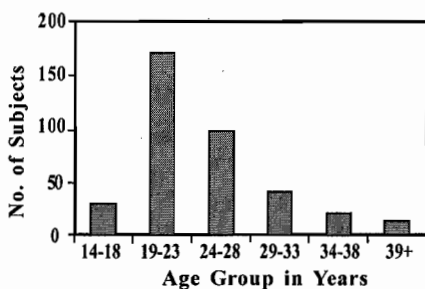


Figure 1: Distribution of Subjects affected by Pericoronitis according to age.

followed by the lower right 138(37%). Both lower third molars were affected in 66 (17.7%) patients. Although generally more females presented with *pericoronitis* than their male counterparts, this difference was not statistically significant.

Table 1: Distribution of Pericoronitis Patients according to Gender

Age group (Years)	Sex (%)	
	Male	Female
14-18	10(33.3)	20(66.7)
19-23	54(31.8)	116(68.2)
24-28	50(51.0)	48(49.0)
29-33	22(53.7)	19(46.3)
34-38	13(61.9)	8(38.1)
39≥	2(15.4)	11(84.6)
Total	116 (40.8)	168 (59.2)

DF = 5, $\chi^2 = 20.87$, $P = 0.001$

There were significantly more females 136(68%) than males 64(32%). Affected particularly in the younger age group, 14-23 years. Within this group, there was an increase in number of both sexes affected by *pericoronitis* with increasing age. After the peak at 19-23 years, there was a decrease in number affected with increasing age (Table 1). The majority of *pericoronitis* cases were seen in the 19-23 year age group, 170(45.6%) with the lower left third molar being affected 75(44.1%) more than the lower right third molar 64(37.6%). Within all the age groups, the lower left third molar was the most affected with the exception of the 34-38 year age group. The least affected was the 39 year age group and above (Table 2). During the 7-year study period, majority of the patients with *pericoronitis* presented in February (18%) particularly in years 2000, 2003, 2004 and 2005 then followed by January (14.5%) March (10.7%), May (10.2%). The month of November, October and April were the months they least presented (i.e. < 5%). This was statistically significant ($p < 0.05$). Table 3. When considering the lower right molars more females, 89(64.5%), were affected than males 49(35.5%). There was also a similar sexual pattern when considering the lower left third molar and concurrent attack of *pericoronitis* on both lower third molars.

Table 2: Distribution of Pericoronitis Patients by Affected Lower Third Molar

Age group (in years)	Third Molar Affected				Total			
	48 (Right)		38 (Left)		48/38			
	n	%	n	%	n	%	n	%
14-18	4	13.3	17	56.7	9	30.0	30	8.0
19-23	64	37.6	75	44.1	31	18.2	170	45.6
24-28	40	40.8	42	42.9	16	16.3	98	26.3
29-33	13	31.7	21	51.2	7	17.1	41	11.0
34-38	11	52.4	8	38.9	2	9.5	21	5.6
39≥	4	30.8	8	61.5	1	7.7	13	3.5
Total	136	36.5	171	45.8	66	17.7	373	

P = 0.17, df = 10, $\chi^2 = 14.15$

Table 3: Frequency Distribution of Patients with Pericoronitis by Month and Year

Month	Year 20-(N(%))							
	00	01	02	03	04	05	06	Total
January	7(13.0)	1(1.9)	7(13.0)	12(22.2)	14(25.9)	10(18.5)	2(5.6)	54(14.5)
February	8(11.9)	2(3.0)	1(1.5)	23(34.3)	17(25.4)	14(20.9)	2(3.0)	67(18.0)
March	0(0)	2(5.0)	8(20.0)	0(0)	22(55.0)	7(17.5)	1(2.5)	40(10.7)
April	0(0)	0(0)	2(11.1)	0(0)	9(50.0)	5(27.8)	2(11.1)	18(4.8)
May	7(18.4)	3(7.9)	6(15.8)	3(7.9)	1(2.6)	12(31.6)	6(15.8)	38(10.2)
June	0(0)	0(0)	1(2.8)	0(0)	0(0)	6(16.7)	29(80.6)	36(9.7)
July	2(10.0)	6(30.0)	4(20.0)	0(0)	0(0)	1(5.0)	7(35.0)	20(5.4)
August	0(0)	10(43.5)	2(8.7)	0(0)	0(0)	0(0)	11(47.8)	23(6.2)
September	3(12.5)	2(8.3)	1(4.2)	0(0)	0(0)	1(4.2)	17(70.8)	24(6.4)
October	2(11.8)	8(47.1)	4(23.5)	0(0)	0(0)	3(17.6)	0(0)	17(4.6)
November	7(50.0)	4(28.6)	2(14.3)	0(0)	0(0)	1(7.1)	0(0)	14(3.8)
December	1(4.5)	9(40.9)	5(22.7)	7(31.8)	0(0)	0(0)	0(0)	22(5.9)
Total	37(9.9)	47(12.6)	43(11.5)	45(12.1)	63(16.9)	60(16.1)	77(20.9)	373

DISCUSSION

The prevalence of pericoronitis in this study was 3.4%. This is greater than that noted in a previous Indian study¹ which was 1.79%. In the current study, females were significantly more affected than males (1.5:1) particularly in the younger age groups. This finding was in agreement with Kay,⁷ Bataineh (1:3:1)⁴ and Piironen and Ylipaavalniemi (2:1)¹⁴ however, in the Indian study¹, more males were affected in a ratio of 3:2.

An attributable reason for the preponderance of pericoronitis among females observed by Kay³ was that the pericoronitis attacks coincided with the pre-menstrual and immediate post-menstrual periods. He also noted that a greater number of pregnant women

developed pericoronitis during the second trimester. This suggests further research into the predisposing factors of pericoronitis in our environment. Stress has also been associated with many medical and dental conditions with Kay³ also suggesting that emotional or physical stress as possible important factors in the pathogenesis of pericoronitis. Stress has been found to lessen salivary flow, which in turn reduces the mechanical or chemical debridement by saliva and normal lubrication of saliva. This may then result in an increased susceptibility to plaque accumulation and eventual inflammation.

Majority of the pericoronitis patients were in the age group 19-23 years (quinquennium), the peak period within which mandibular third molars normally

erupt.¹⁵ This finding is in accordance with that reported in the Indian¹ and Jordanian⁴ studies. Both studies reported a peak occurrence in the 21-25 years age group. There is a decline in pericoronitis attack from the peak age group with increasing years further supporting the fact that this condition relates more to the period of eruption of the mandibular third molars.

Bilateral concurrent pericoronitis was noted in 17.7% of our patients, which was somewhat similar to the findings of Sangal¹ (12%). However, Kay⁷ reported only 3% in his series. A reason suggested by Sangal¹ for this difference was that most of the impacted or partially erupted teeth remain unattended to in their patients, which may lead to occasional attacks of pericoronitis and may thus occur on both sides of the jaw concurrently. In this current study, lower left mandibular was more affected than the lower right mandible. Other studies^{1,7,11} only report a high occurrence of unilateral pericoronitis but with no disparity to either side of the mandible.

The majority of our patients presented predominantly between January and March (43.2%) with a peak seen in February (18%). The peak levels of pericoronitis noted in the English study⁷ was in the month of March (spring), in the Jordanian⁴ study April and September, while in the Indian¹ study no significant variation was noticed in the monthly distribution of pericoronitis. From this, there appears to be a high number of attacks of pericoronitis in the earlier quarter of the year.

An explanation suggested by other studies for the high frequency of pericoronitis in these seasons (spring/autumn) was that there was a high frequency of upper respiratory tract infection around the attack of pericoronitis. It has been reported that upper respiratory tract infection weakens the general condition of patients thus increasing the risk of pericoronitis. Moreover, another predisposing factor (i.e. malaria) noted to weaken the general condition has recently been reported to be a predisposing factor to pericoronitis in our environment.¹⁰

Further research is therefore needed to investigate the predominant period these medical conditions occur and if they

coincide around the attacks of pericoronitis. Other predisposing factors such as stress around college examinations, physical fatigue and emotional stress have also been associated with the occurrence of pericoronitis.

CONCLUSION

Pericoronitis occurs more often in young adult female Nigerians compared with their male counterparts. The lower left third molar is the commonest tooth associated with this condition. However, further studies are required to elicit the predisposing or risk factors implicated in this vulnerable group of Nigerians. The incidence appears to be slightly higher when compared to other studies. Pericoronitis particularly around the third molars may affect a wide age range of patients, but was seen most frequently between the ages of 19 and 28 years with a peak incidence in the 19-23 year age group, which is the period when

mandibular third molars normally erupt.

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