FREQUENCY OF CHRONIC PERIODONTITIS IN A CROSS SECTION OF PAK ARMY PERSONNEL

M. Parwez Chaudhry, *Zubair Babar, **Fahmeed Akhtar

AM College Rawalpindi, *Armed Forces Institute of Dentistry Rawalpindi, **PN Karachi

ABSTRACT

Objective: To determine the frequency of periodontitis in lower ranks of Pakistan Army.

Designed: A descriptive study..

Place and Duration of Study: The study was conducted at Armed Forces Institute of Dentistry, Rawalpindi between Aug 2003 and Feb 2005.

Subjects and Methods: This is a in which Periodontal status of maxillary and mandibular incisors and permanent first molars in five hundred and fifteen personnel of the Pakistan Army was evaluated using plaque index, probing depths, attachment loss, bleeding upon probing, tooth mobility and presence of calculus.

Results: One hundred and sixty five (32.04%) subjects had 5 mm or deeper probing depths as well as associated attachment loss of at least 2 mm and were considered to be suffering from Chronic Periodontitis.

Conclusion: The study detected that a noticeable percentage of subjects in this population had a substandard level of oral hygiene and consequently suffered from Chronic Periodontitis.

Keywords: Chronic periodontitis, diagnosis, prevalence, oral hygiene

INTRODUCTION

Chronic Periodontitis is the most common type of periodontal disease and is the main cause of loss of teeth in later adult life. It is an inflammatory destructive process characterized by loss of connective tissue attachment and alveolar bone supporting the teeth. [1]

As long as inflammation is confined to the marginal gingiva, the term plaque induced gingivitis is used to designate the inflammatory lesions, but once the lesions extend to include the destruction of the connective tissue attachment of the teeth and the supporting alveolar bone, the disease is termed as periodontitis [2].

Survey of a cross section of Pakistan Army troops was carried out at Armed Forces Institute of Dentistry Rawalpindi, in order to identify and quantify prevalence of periodontitis in the lower ranks.

Correspondence: Brig Zubair Babar, Classified Specialist in Periodontology, Dy Comdt, Armed Forces Institute of Dentistry Rawalpindi.

SUBJECTS AND METHODS

Five hundred and fifteen personnel from various army units stationed at Rawalpindi were selected for this survey.

The screening examination was done when the individuals were called up for their annual dental inspection at AFID between Aug 2003 and Feb 2005. A dental officer assisted by a dental assistant undertook the examination. Sterile periodontal probes with 3mm markings, mouth mirrors, explorers, disposable gloves, masks and other paper products were employed.

The mesial, buccal, distal and lingual/palatal surfaces of the first four molars, the four maxillary incisor teeth and four mandibular incisor teeth were evaluated. If any of these teeth were missing they were

identified and noted. No substitute teeth were evaluated. The plaque index of Silness and Loe was recorded for the same four surfaces on each of the twelve evaluated teeth. Probing depth measurements for the four surfaces of each evaluated tooth were recorded in millimeters. Attachment loss for each of the four surfaces was evaluated as present or absent whenever the tip of the probe was at least two millimeters apical to the cementoenamel junction. The presence or absence of bleeding upon probing and supragingival/subgingival calculus were recorded using 0-3 scale.

STATISTICAL ANALYSIS

Data had been analyzed using SPSS 10.0. Dexriptive statistics were used to describe the data.

RESULTS

During the study, 515 subjects were evaluated mean age of the subjects was 26 years ranging from 17 years to 55 years of age. (table-1) indicates rank structure of the individuals.

Periodontitis Detection

One hundred and sixty five (32.04%) individuals of the screened population had probing depths greater than or equal to 5mm including at least 2mm of clinical attachment loss (table-2). These individuals were considered to have periodontitis.

Pocket Depth and Clinical Attachment Loss

For the individuals diagnosed as suffering from periodontitis, 96% of the subjects had one or more probing depths of 5mm or more (fig. 1). In the rest of the personnel, 15% had one or more probing depths of 5mm. 33% to 40% of the molars and 10% to 17% of the incisors in the individuals diagnosed as suffering from periodontitis were periodontally involved. Ten (6%) individuals amongst those suffering from periodontitis demonstrated various degrees of furcation involvement of molars.

Plaque Index

In general almost all the subjects presented with heavy accumulation of plaque. 10% to 50% of the teeth evaluated in the study had mean plaque scores greater than two. Molar teeth displayed higher plaque scores than the incisor teeth.

Bleeding Sites

When any of the monitored gingival sites bled upon probing, the tooth was considered to be positive for bleeding on probing (fig. 2).

Calculus

Four hundred and sixty three subjects (89.9%) presented with significant deposits of supragingival as well as subgingival calculus.

Table-1: Frequency of distribution relevant to rank and age - mean age 36 years (min 17 yeas – max 55 years) n=515.

Rank	No	Percentage
Sep	305	59.22%
NCOs	110	21.37%
JCOs	100	19.41%

Table-2: Number and percentage of subjects diagnosed as periodontitis positive (n=515).

Rank	OR	NCOs	JCOs	Total	%age
Periodontitis	31	53	81	165	32.04
Non Periodontitis	274	57	19	350	67.96

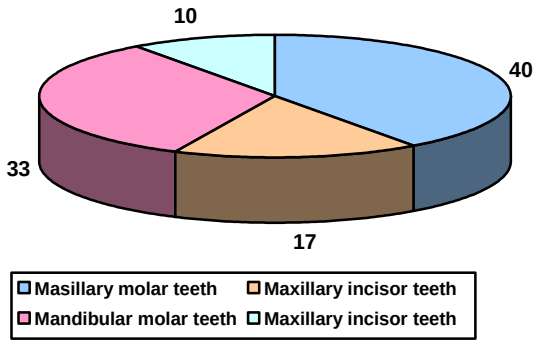

Fig. 1: Percentage of teeth with probing depths of 5 mm or greater.

DISCUSSION

Concepts of the pathogenesis of Chronic Periodontitis have been developed through clinical and microscopic observations, including human and animal studies, as well

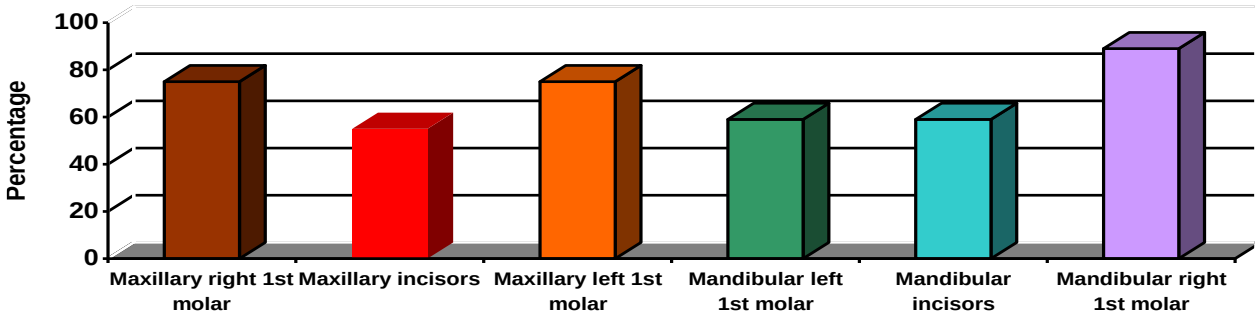

Fig. 2: Percentage of teeth with bleeding sites.

as through the use of ultrastructural, histometric, and biochemical methods. However, the sequence of events in the transition from a normal periodontium to the characteristic lesion of chronic destructive (adult) periodontitis has not been precisely determined. The development of a gingival pocket and its transition to periodontal pocket is still the subject of considerable research [3].

Although there is some evidence for the presence of bacteria in severe, advanced cases of periodontitis, invasion of tissues in adult periodontitis has not been demonstrated through experiments or through morphological observation, either because of technical difficulties or because invasion does not occur.

It is assumed that chronic gingivitis with time progresses to periodontitis. This assumption is based on the clinical experience and cross sectional surveys, however this does not imply that all gingivitis progresses unrelentingly to periodontitis, nor does it imply that periodontitis is a relentlessly progressive disease. It is thought that bone loss associated with Chronic Periodontitis is an intermittent process, periods of active destruction alternate with periods of relative inactivity and even attempts at healing [2,4].

There is overwhelming evidence that dental plaque is the essential aetiological agent in Chronic Periodontitis, however various local factors and systemic factors that alter the host response to local irritants could influence the development and progression of the lesions.

Local factors include malaligned occlusal relationships of the teeth, lack of lip seal or mouth breathing, faulty restorations, carious cavities, food impaction and badly designed partial dentures [5].

The systemic factors associated with increased prevalence and severity of periodontitis or modifying the course of the disease are nutritional, hormonal, haematological and genetic [5].

In order to prevent or to control the periodontal disease, plaque must be prevented from forming, or must be removed before it produces inflammatory changes in the gingiva.

The purpose of this screening was to identify and quantify the proportion of lower ranks afflicted by periodontitis, involving the first molars and incisors. The results of the screening procedures were limited by the facilities. The screening process used in this study identified patients with clinical signs of periodontitis at early stages of the disease, so that the loss of teeth could be avoided at the earliest.

This study demonstrated that it was effective in identifying the prevalence of periodontal disease in the population selected for the study. However, the clinical screening undertaken was not sufficient to determine if the periodontitis seen was a sequel to localized juvenile periodontitis [5].

CONCLUSION

Results obtained during the course of the study portrayed a substandard level of oral hygiene in a significant percentage (89.9%) of the subjects, as reflected by the high scores of plaque as well as supragingival/subgingival calculus. As a consequence prevalence of Chronic Periodontitis was observed in an appreciable number of the screened patients (32.04%).

Since inadequate standard of oral hygiene remains to be the prime contributory factor in the aetiology of Chronic Periodontits considerable stress on institution of oral hygiene measures is the need of the hour, alongwith patient motivation and alleviation of local contributory factors, periodic dental examinations and timely prophylaxis.

REFERENCES

1. Kaslick R, Chasens A. Periodontosis with Periodontitis: a study involving young adult males. Part I. Review of literature and incidence in a military population. Part II. Clinical, medical and histopathologic studies. *Oral surg Oral Med Oral Pathol* 1968; 25(3): 305-50.
2. Carranza FA. *Glickman's Clinical Periodontology*. 9th ed. Philadelphia: W. B. Saunders; 2002. p. 64, 65, 67, 347.
3. Rmfjord SP, Ash MM. *Periodontology and Periodontics: modern theory and practise.* Saint Louis: Ishiyaku EuroAmerica; 1996. p. 47.
4. Lindhe J. *Textbook of Clinical Periodontology*. Copenhagen: Munksgaard; 1989. p. 156-7.
5. Manson JD. *Outline of Periodontics*. 3rd ed. Oxford: Wright; 1995. p. 40, 41, 71, 73, 74, 109.