

FREQUENCY OF GINGIVAL AND PERIODONTAL DISEASES AMONG TROOPS DEPLOYED IN OPERATIONAL AREA

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ABSTRACT

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Objective: To find the frequency of periodontal disease among troops deployed in operational area and to evaluate the treatment needs which might be helpful in the oral health policy planning and specific intervention against periodontal disease.

Design: Descriptive study.

Place and Duration of Study: The study was conducted at 140 mobile dental unit Swat from Dec 2009 to June 2011.

Subjects and Methods: The periodontal status of 1500 personnels of Pakistan Army was examined using Basic Periodontal Examination Index. Data was evaluated by SPSS version 16. Percentage of various gingival and periodontal disease traits was calculated and treatment needs determined.

Results: Out of total 1500 subjects 12.8% subjects were having satisfactory periodontal health and required no treatment whereas 38.3% were having gingivitis requiring oral hygiene instruction and prophylaxis. Gingivitis modified by local factors was seen in 23.5% and required oral hygiene instruction and correction of modifying factors. Some (13.6%) were having mild periodontitis and required scaling, root planning and oral hygiene instruction whereas 11.8% were having moderate or advance periodontitis and required comprehensive periodontal treatment including surgical treatment.

Conclusion: A large number of cases (82.7%) of gingivitis and periodontitis were detected in subject population which shows lack of awareness and self-consciousness among troops regarding their oral hygiene.

Keywords: Frequency, Gingivitis, Periodontitis.

INTRODUCTION

Periodontal disease is one of the most prevalent diseases throughout the world varying in degree from mild to severe and is the main cause of tooth loss¹. It is an inflammatory destructive process characterized by loss of connective tissue attachment and alveolar bone supporting the teeth². As long as inflammation is confined to the marginal gingiva, the term 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 periodontitis³. In older adults it may increase patient's risk for developing

systemic diseases such as diabetes mellitus, lung diseases, heart diseases, stroke and associated with preterm low birth weight babies⁴.

The importance of health in general and oral health in particular entails a particular consideration and repercussion from military point of view because of the direct and indirect consequences for the services and deployment caused by loss of oral health^{5,6}. Although Annual dental inspection (ADI) of all units of Pakistan army is regularly conducted by army dental corps but results of epidemiological studies are not encouraging².

This survey was designed to study the periodontal health status and treatment needs of troops deployed in operational area of Swat. This information may be helpful for establishing priorities and determining the quantity of prevention and treatment services required.

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SUBJECTS AND METHODS

Fifteen hundred personnel with age range of 17 to 55 years including both officers and soldiers from various units deployed at operational area Swat from Dec 2009 till June 2011 were selected. Subjects were screened for periodontal health during annual dental inspection 2010-11. After taking informed consent subjects were examined by the same dentist helped by the dental assistant. Basic periodontal examination (BPE) which is the modified version of original Community Periodontal Index of treatment Needs (CPITN) was carried out for subjects to screen the presence of disease and evaluate treatment needs. WHO (E) probe was used as basic tool of measuring. All teeth were examined at six sites (disto-buccal, buccal, mesio-buccal, disto-palatal, palatal and mesio-palatal). Highest measurement of sextant was taken for that and

BPE score index of subject. Full periodontal pocket charting, plaque and bleeding scores were recorded for a sextant qualifying scores 3. Full periodontal charting including gingival recession measurements, plaque, bleeding scores and extent of furcation involvement was recorded for a sextant scored 4 or above. Data was analyzed using SPSS version 16. Percentages of gingival and periodontal disease traits were calculated and treatment needs determined. Various codes of index used are summarized in table-1.

RESULTS

Total 1500 subjects aged from 17 to 55 years with mean age of 31 years (SD=5.5) were examined. One hundred and ninety two (12.8%) subjects were having complete periodontal health and required no treatment. While 87.2% were having gingival and periodontal diseases out of which 575 (38.3%) were having gingivitis and

Table-1: Basic periodontal examination (BPE) index used to examine the subjects.

Code	Examination finding	Disease	Treatment required
0	No pocket exceeding 3 mm, no calculus or overhangs, no bleeding on probing (BOP)	Periodontal health	No treatment is required
1	No pocket exceeding 3 mm, no calculus or overhangs, but BOP present.	Gingivitis	Oral hygiene instruction (OHI) and prophylaxis
2	No pocket exceeding 3 mm but calculus or other plaque retentive factors present and BOP also present	Gingivitis modified by plaque retentive factors	OHI, scaling and correction of plaque retentive factors
3	Pocket greater than 3.5 mm but lesser than 5.5 mm, calculus or other plaque retentive factors present and BOP also present	Mild periodontitis	OHI, scaling, root planning and correction of plaque retentive factors. Full periodontal charting, plaque and bleeding score is recorded
4 or *	Pocket greater than 6 mm, calculus or other plaque retentive factors present and BOP also present	Moderate or advance periodontitis	OHI, scaling, root planning, correction of plaque retentive factors and surgical perio treatment. Full periodontal charting, plaque, bleeding score, gingival recession, furcation and mobility score is recorded

highest score of any sextant was considered as required oral hygiene instruction and

prophylaxis, 353 (23.5%) were having gingivitis modified by local factors and required oral hygiene instruction and removal of modifying factors. Two hundred and four (13.6%) were having mild periodontitis and required scaling, root planning and oral hygiene instruction. One hundred and seventy seven (11.8%) were having moderate or advance periodontitis and required comprehensive periodontal treatment including oral hygiene instruction, scaling, root planning and surgical periodontal treatment (Figure-1).

DISCUSSION

Periodontitis is a group of inflammatory diseases that affect the connective tissue attachment and supporting bone around the teeth. Concepts of the pathogenesis of chronic periodontitis have been developed through clinical and microscopic observations, including human and animal studies².

There is overwhelming evidence that dental plaque is the essential etiological agent in chronic periodontitis, however various local and systemic factors that alter the host response could influence the development and progression of the lesions. These factors include mal-aligned occlusal relationships, lack of lip seal or mouth breathing, faulty restorations, carious cavities, food impaction and badly designed partial dentures and stress. It has been strongly suggested that stress related body distress is important risk indicator for periodontal diseases^{7,8}. As for in our study troops were deployed in ops area where hostile operational environment accentuated with cold weather compels troops increased use of sweets, tea, tobacco and smoking, all of which are risk factors to gingivitis.

Epidemiologic studies show that gingivitis is ubiquitous in populations of children and adults globally. It has been estimated that more than 82% of adolescents in the United States have overt gingivitis. Qurens has reported et al 40.3% gingivitis in US army personnel⁹. A survey on Spanish military troops revealed that only 7.2% of the samples were healthy, while 10.1%

presented with bleeding, calculus was present in 72.6%, whereas 7.8% and 2.3% respectively had pockets of 4-5 mm or of 6 mm or more⁵. Similar or higher frequency of gingivitis has been reported in children and adolescents in other parts of the world¹⁰. Albandar in an overview concluded that subjects of an Asian ethnicity had the third highest prevalence of periodontitis¹¹. Shah in her report for the National commission

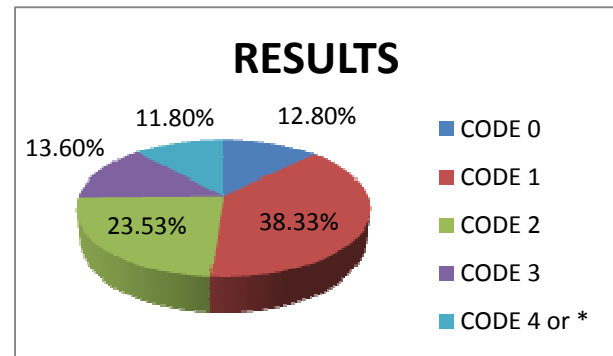


Figure-1: Percentage of subjects with different basic periodontal examination (BPE) index scores.

on macroeconomics observed that advanced periodontal diseases if not treated properly may affect 40 to 45% of the population of India¹².

Pakistan is a developing country where both chronic and aggressive periodontitis was observed in 69.82% males and 30.18% females⁴. Another study showed prevalence of periodontitis in women of childbearing age group in Pakistan ranging from 22% suffering from bleeding gums to 34% having calculus deposition. Almost 17% of these women were found to be suffering from advanced periodontal diseases¹³. In a survey on Pakistan armed forces personnel in 1956 stated that major problem of Pakistani troops was condition of their teeth and gums which showed 65.3% of gum recession with debris and 26.9% of marginal swellings of the gums¹⁴.

This study was designed to find the frequency of periodontal diseases among troops of Pakistan deployed in ops area Swat. Basic periodontal examination which is the modified

version of original CPITN was used to evaluate periodontal condition and treatment needs. CPITN was jointly developed by WHO and Federation Dentaire International (FDI) and since then it has been used worldwide to study the periodontal diseases in population at community level, as well as its treatment needs. It is claimed to be simple, rapid, inexpensive, easily applied index, which require minimum equipment, is widely applied and has an international uniformity^{1,15}. Similar results to ours were reported by Chaudhary et al in Pakistan army personnel who reported 32.04% periodontitis².

Efforts need to be focused on raising population's awareness of the importance of oral hygiene and on early diagnosis of gingival and periodontal problem. A preventive and curative oral and dental health policy adapted to the military environment, defining resources, objectives and priorities, needs to be planned and implemented

CONCLUSION

A large number of cases (87.2%) of gingivitis and periodontitis is detected in subject population which shows lack of awareness and self-consciousness among troops regarding their oral hygiene.

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