

## PERIODONTAL DISEASE AWARENESS AMONG MEDICAL DOCTORS

Mohammad Nasir Shah, Shakeel Anwar, Akbar Khalil, Shamim Akhtar

Khyber College of Dentistry, Peshawar

### ABSTRACT

**Objective:** To study the level of awareness regarding periodontal diseases among medical doctors.

**Material and Methods:** In this cross-sectional qualitative study a total of 250 questionnaires were distributed equally among the medical doctors of Khyber Teaching Hospital (KTH) and Hayatabad Medical Complex (HMC). Each participant was given a self-administered, pre-tested, multiple choice question-type questionnaire to solve. Questions were asked about specific oral diseases or their treatment and the participants were asked to tick mark one of three given answers which comprised of "yes, no, don't now".

**Results:** A total of 250 medical doctors were approached and questionnaire were distributed among them of which 163(65%) responded positively. Among these respondents 62% were of the opinion that gingivitis and periodontitis were different diseases, 76% of them replied that mouth was not the only source of bad breath, 49% agreed that chronic periodontitis is a risk factor for coronary heart disease(CHD), 33% were of the opinion that chronic periodontitis during pregnancy can lead to low birth weight in new born, 54% replied that there exists a positive relationship between periodontitis and diabetes mellitus, 79% were of the view that smoking affects periodontal health. 46% replied that visits to the dentists should be 6 monthly. 43% said that scaling damages teeth, 42% of doctors replied that gum recession was not treatable.

**Conclusion:** Majority of medical doctors had good knowledge about periodontal diseases but most of them had inadequate awareness regarding the relationship between periodontal diseases and other systemic diseases. Similarly, most of medical doctors were not aware about the different treatment procedures of periodontal diseases. Therefore, an integrated teaching of medical and dental sciences is recommended.

**Key words:** Periodontal diseases, Coronary heart disease, Low birth weight, Diabetes mellitus.

### INTRODUCTION

Periodontology is among the fastest growing dental specialties. Its services include preventive and curative aspects of oral health. Systemic ramifications of periodontal diseases have been implicated in a wide range of conditions such as coronary heart disease, stroke, atherosclerosis and low birth weight<sup>1</sup>.

Gram-negative infection is a predominant cause of periodontal diseases which results in severe inflammation, with a potential of vascular dissemination of microorganisms and their toxic byproducts throughout

the body<sup>2</sup>. It is the most common oral infection in India, with a prevalence rate of 66.2% among individuals of age 15 years and about 89.2% among adults in the age group of 35-44 years<sup>3</sup>. Potential impacts of many systemic disorders on periodontium are well documented, through recent evidences it is suggested that periodontal infections can significantly increase the risks for certain systemic conditions and/or alter the natural course of systemic diseases<sup>4,6</sup>.

According to estimates more than 500 different bacterial species are shown to be capable of colonizing the mouth of an adult<sup>7,8</sup>. Systemic reactions with the potential vascular dissemination of these microorganisms and their toxins via the sulcular epithelium, such as, Lipopolysaccharides (LPS) throughout the body induces major vascular responses<sup>2,6</sup>. This host response can offer explanatory mechanisms for the interaction

---

#### Correspondence:

Dr. Mohammad Nasir Shah

Assistant Professor, Department of Periodontology

Khyber College of Dentistry, Peshawar

Cell: 0333-9131996

Email address: mnshah85@hotmail.com

between periodontal infections and variety of systemic disorders e.g. coronary heart diseases<sup>9-12</sup> coronary heart disease related events such as infarction, angina and atherosclerosis<sup>12,13</sup> stroke<sup>4,14</sup> diabetes mellitus<sup>15,16</sup> preterm labour<sup>17-19</sup>, chronic obstructive pulmonary disease<sup>20,21</sup> and hospital acquired pneumonia<sup>4,22,23</sup>. In susceptible individuals, it can act as an independent risk factor for systemic diseases<sup>1</sup>. Fortunately, this risk factor is readily modifiable.

As medical curriculum is deficient in providing the required space for oral health, hence, many medical doctors are not familiar with the oral cavity and oral diseases<sup>2</sup>.

Given the high prevalence of periodontal diseases and its association with systemic diseases, patients visiting medical practitioners may not be receiving the required education and guidance<sup>2</sup>.

Therefore, the present study was carried out to understand the level of awareness regarding periodontal disease among medical doctors so that their training needs with respect to the subject under study may be realized.

**MATERIALS AND METHODS**

This study was carried out in two tertiary care teaching hospitals namely Khyber Teaching Hospital and Hayatabad Medical Complex, Peshawar, Khyber Pakhtunkhwa, Pakistan. Medical doctors from these two medical institutions affiliated to Khyber Medical University were included in the study in order to rule out institutional bias. Consent for conducting the study was obtained from the concerned authorities of the institutions selected for study after appraising them regarding the purpose and significance of the study, as well as ensuring anonymity of the institutions and the respondents. A verbal consent was obtained from all participants. 250 doctors were selected randomly in equal numbers from both these institutions who were posted in different wards of these hospitals. The purpose of the study and all the terms used in the study were explained to the respondents and were ensured maintaining total confidentiality. Each participant was given a self-administered, Multiple Choice Questions type questionnaire to solve. The questionnaire was developed to assess the knowledge of medical doctors regarding pathogenesis of periodontitis, its relationship with systemic diseases, its prevention and treatment. The questionnaire had a total of 10 questions and

the respondents were asked to tick mark one of three answers from “yes, no, doesn’t know”. The data thus collected were compiled and analyzed using SPSS version 16 and interpreted. In order to summarize the awareness level, responses were graded from 0-10 based on the correct responses. The respondents securing 0-4, 5-7, 8-10, marks were graded as having awareness level as poor, fair, and good, respectively. Results were expressed in terms of percentage.

**RESULTS**

A total of 250 medical doctors from different wards of KTH & HMC were provided with the questioner. Only 163 (65%) respondent positively. Among these respondents 62% were of the view that gingivitis and periodontitis are not the same diseases whereas 19% said they were same diseases and 19% had no idea about it. Majority of the doctors 76% answered that mouth is not the only cause of Halitosis similarly 79% replied that smoking affects periodontal health (Fig-1).

About systemic effects of periodontitis, 49% thought that it is a risk factor for coronary heart disease , only 33% replied that periodontitis in pregnant

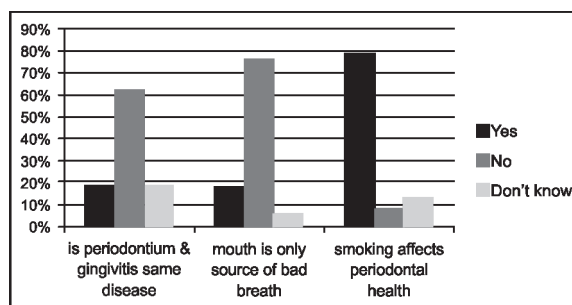


Fig-1: Responses regarding awareness about periodontal diseases

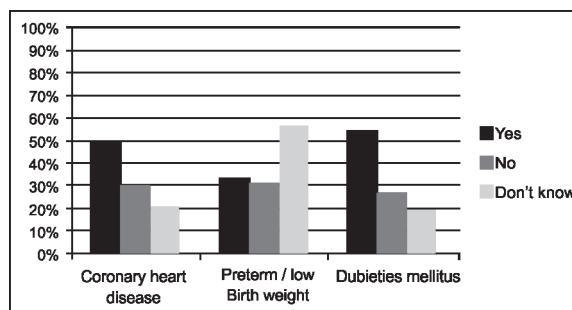


Fig-2: Distribution of responses regarding periodontal diseases as risk factor for various systemic diseases

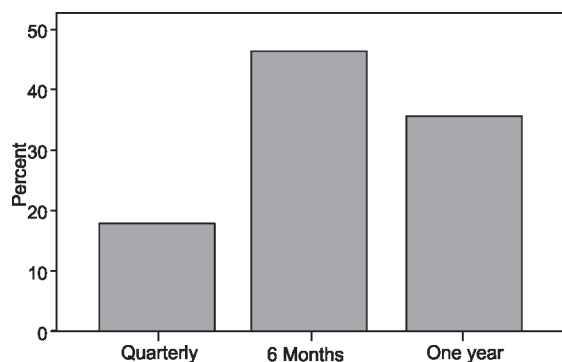


Fig-3: Level of awareness about visit to dentist

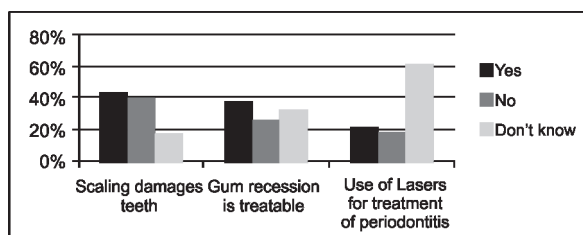


Fig-4: Distribution of responses regarding periodontal treatment

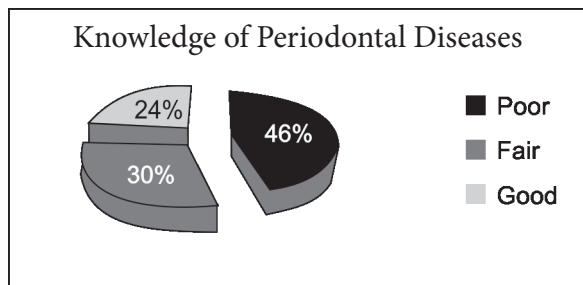


Fig-5: Level of knowledge of periodontal diseases among medical doctors

women leads to preterm/low birth weight babies, 54% were of the opinion that periodontitis is a complication of diabetes mellitus (Fig-2).

Regarding visit to the dentist, 46% of doctors replied that dentist should be visited after every 6 months (Fig-3) while 43% replied that scaling by a professional damages teeth, 37% of doctors said that gum recession is treatable whereas 42% replied negatively, while 61% of doctors did not have any information about lasers being used in dentistry for periodontal problems (Fig-4)

Among the 163 respondents only 24% had good level of awareness regarding the inter relationship between the systemic and dental diseases as shown in Fig-5.

## DISCUSSION

Periodontal disease is considered as a complex infectious disease which results from interplay of bacterial infections and host-responses to bacterial challenges. The present study shows that medical doctors had limited awareness level in regards to the systemic effects of periodontal disease. Similar finding have been recorded by Gur and Majra<sup>24</sup> and Quijano et al<sup>25</sup>. The reason for the limited awareness may be due to the fact that specialization has lead to the isolation of medical practitioners<sup>26</sup>.

In a similar study by Gur and Majra<sup>27</sup> in India on medical interns reported that medical interns in primary level hospitals to tertiary care level hospitals had poor knowledge about periodontal diseases and their relationship with systemic diseases. In another study in Chennai, India, Srinidhi<sup>28</sup> found out that medical practitioners had good Dental/periodontal diseases awareness. Another study conducted by Tarannum<sup>29</sup> in the State of Karnataka, India, reported that General practitioners & Gynecologists had good level of awareness of association between periodontal diseases and preterm low birth weight babies.

These findings raise important questions. As we know the high prevalence of periodontal disease and its impact on oral health and the risk of its association with systemic diseases, patients seeking advice from medical physicians may not receive the much needed advice, education and guidance. An increased awareness of certain aspects of periodontal disease and its link to systemic conditions are important, and patients should be counseled about this information at each healthcare contact they have, whether it is with a dentist, a physician, or any other healthcare provider.

## STUDY LIMITATIONS

This study was carried out in one area only; hence, the finding may not be applicable on the national scale. Furthermore, all medical doctors could not be included in the study because of their different duty schedules. This may have led to some bias; therefore, a similar study on a larger scale is required for more representative findings.

## CONCLUSION

The level of awareness regarding the systemic effects of periodontal disease among medical doctors is only 24%.

**RECOMMENDATIONS**

More space be allocated to the subject of dental sciences in the medical curriculum to improve physicians' ability to contribute to oral health and stress be given to integrated teaching of medical and dental sciences in order to produce thorough professionals who can serve the humanity in a better way.

**REFERENCES**

1. Thomas BS, Bhat M, Nair S. Periodontal diseases and awareness among patients. *Indian J Dent Res* 2005;16:103-8.
2. Mealy BL, Klokkevold Perry R. *Periodontal Medicine: Carranza's Clinical Periodontology*. 9th ed. New Delhi: Elsevier; 2004.229-44
3. National Oral Health Survey and Fluoride Mapping: Dental Council of India. New Delhi: Dental Council of India 2004 pg.13. Last accessed on 2010 March 10.
4. Mealy BL. Influence of periodontal infections on systemic health. *Periodontology* 2000. 1999; 21:197-209.
5. Rai B. Systemic Effect of Oral Disease. *Internet J Family Pract* 2007; 5:1.
6. Page RC, Beck JD. Risk assessment for periodontal diseases. *Int Dent J* 1997; 47:61.
7. National Oral Health Care Program. Ministry of Health and Family Welfare. New Delhi: Government of India; 2003.
8. Moore WE, Moore LV. The bacteria of periodontal disease. *Periodontology* 2000. 1996; 5:66-77.
9. Beck J , Garcia R, Heiss G, Vokonas PS, Offenbacher S. Periodontal disease and cardiovascular disease *J Periodontol* 1996; 67:1123-37.
10. Beck JD, Offenbacher S, Williams R, Gibbs P, Garcia R. Periodontitis: A risk factor for coronary heart disease? *Ann Periodontol* 1998; 3:127-41.
11. Mattila KJ, Valtonen VV, Nieminen M, Huttunen JK. Dental infection and the risk of new coronary events: Prospective study of patients with documented coronary artery disease. *Clin Infect Dis* 1995; 20:588-92.
12. Rai B, Kharb S. Effect of scaling and root planning in periodontitis on peripheral blood. *Internet J Dent Sci* 2008; 6:1.
13. Mattila KJ, Valle MS, Nieminen MS, Valtonen VV, Hietaniemi KL. Dental infections and coronary atherosclerosis. *Atherosclerosis* 1993; 103:205-11.
14. Syrjanen J, Peltola J, Valtonen V, Livanainen M, Kaste M, Huttunen JK. Dental infections in association with cerebral infarction in young and middle aged men. *J Intern Med* 1989; 225:179-84.
15. Sammalkorpi K. Glucose intolerance in acute infections. *J Intern Med* 1989; 225:15-9.
16. Grossi SG, Genco RJ. Periodontal diseases and diabetes mellitus: A two-way relationship. *Ann Periodontol* 1998; 3:51-61.
17. Hill GB. Preterm birth: Association with genital and possible oral micro flora. *Ann Periodontol* 1998; 3:222-32.
18. Offenbacher S, Jared HL, O'Reilly PG, Wells SR, Salvi GE, Lawrence HP, et al. Potential pathogenic mechanisms of periodontitis-associated pregnancy complications. *Ann Periodontol* 1998; 3:233-50.
19. Dasanayake AP. Poor periodontal health of pregnant women as a risk factor for low birth weight. *Ann Periodontol* 1998; 3:202-7.
20. Hayes C, Sparrow D, Cohen M, Vokonas PS, Garcia R1. The association between alveolar bone loss and pulmonary function. The VA longitudinal study. *Ann Periodontol* 1998; 3:257-61.
21. Beck JD. Periodontal implications: Older adults. *Ann Periodontol* 1996; 1:322-7.
22. Pugin J, Auckenthaler R, Lew DP, Suter PM. Oropharyngeal decontamination decreases incidence of ventilator-associated pneumonia. A randomized, placebo-controlled, double blind clinical trial. *JAMA* 1991; 265:2704-10.
23. Stoutenbeek CP, van Saene HK, Miranda DR, Zandstra DF, Langrehr D. The effect of oropharyngeal decontamination on the incidence of nosocomial respiratory tract infections. *J Trauma* 1987; 27:357-63.
24. Gur A, Majra JP. Knowledge, Attitude and Practices Regarding the Systemic Effects of Oral Diseases among the Medical Practitioners. *Int J Dent Sci* 2009; 6: 25-9.
25. Quijano A, Shah AJ, Schwarcz AI, Lalla E, Ostfeld RJ. Knowledge and orientations of internal medicine trainees towards periodontal disease. *J Periodontol* 2010; 81:359-69.
26. Gur A, Majra JP. Has specialization isolated practitioners? *Indian J Dent Res* 2010; 21:144-5.
27. Gur A, Awareness regarding the systemic effects of periodontal diseases among medical interns in India, *J global infect Dis* 2011;3:127-7
28. S Srinidhi, Awareness of Dental/periodontal diseases among general practitioners, *J oral health comm. Dent* 2011;5(2):73-78
29. Tarnnum F, Awareness of the association between periodontal Diseases and preterm birth among General dentists, general practitioners and gynecologists. *India, J public Health* 2013;57: 92-5