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PERIODONTAL DISEASE-SYSTEMIC DISEASE INTER RELATIONSHIP QUESTIONNAIRE STUDY

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ABSTRACT

Aim: To determine the awareness among patients about the interrelationship between periodontal and systemic diseases.
Method and method: A survey was conducted among 60 patients who visited dental hospital in the form of questionnaire. 12 questions were framed to evaluate the awareness among patients about periodontal and systemic diseases inter relationship.
Results: 60 patients were surveyed. About 75% of them were not aware that periodontal disease is correlated with systemic diseases like diabetic mellitus, cardiovascular diseases, haematological disorders, hormonal discrepancies and oeteoporosis.
Conclusion: The awareness about the interrelationship of periodontal and systemic diseases among patients is very minimal.

KEYWORDS: **Periodontal disease, Systemic disease, Diabetes mellitus.**

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INTRODUCTION

The teeth in response to bacterial accumulation or dental plaque, on the teeth. The chronic and progressive bacterial infections leads to loss of tissue attachment and alveolar bone destruction.[1] Periodontal disease may be associated with cardiovascular disease due to mutual risk factors, the presence of pathogens associated with periodontal infection should be localized in serum or atheromatous plaques.[3] Periodontal disease is one of the many complications resulting from type I and type II diabetes. Studies have shown that periodontal disease is a significant risk factor for low birth weight[12] and bone loss is a feature shared between periodontal disease and oeteoporosis. Hence a study was planned to evaluate the awareness of the common people about the interrelationship of the periodontal disease with systemic disease.

MATERIALS AND METHODS

The aim of the study is to determine the awareness among patients about the interrelationship between periodontal and systemic diseases. A cross sectional survey was conducted among patients visiting dental hospital. A simple random sampling was done. All patients above the age of 35 years and below the age of 65years were included in the survey. The information was collected using self explanatory questionnaire. Twelve questions were chosen to assess the patients health problem and their awareness about inter relationship between periodontal disease and systemic disease. The nature and purpose of the survey were explained to the patients and written consent was obtained. The questionnaires were handed to the patients during their regular visit to dental hospital. The questionnaire was printed in English as well as regional language Tamil. [see table 1]

RESULTS

The first question was to know about the medical history of the patients. Among 60 patients 16.6% patients had diabetic mellitus and 8.3% had bone disease and 1.6% had heart and hormonal problems. Following this the questions were framed to evaluate the awareness of the patients. Almost 60% patient does not know that periodontal disease is the complication of the diabetic disorder[see table 2] and only 26.6% knows that there is correlation between systemic and periodontal disease. About 55% of patients felt that it is necessary to have a dental opinion during pregnancy and 31.6% told that they do not know whether to have a dental opinion or not and 75% of them were not aware that periodontal disease is common during pregnancy.[see table 4] 88.3% of the patients surveyed told they does not know about that the cardiovascular disease is related to periodontal disease [see table 3]and 84% does not know hematological disorders are correlated with the periodontitis. 75% of patients participated in the survey were not aware of the relationship between bone disorders and periodontal disease.

DISCUSSION

Diabetes mellitus is a metabolic disorder characterized by hyperglycemia due to defective secretion or activity of insulin. *P.gingivalis* [2] have the ability to invade deep vascular endothelium associated with the periodontium and can be found within pathological vascular plaques.[3,4] the patho physiology of diabetes is similar to that of periodontal disease. The study by Grossi et al [5] indicated that the effective control of periodontal infection in diabetic patients could reduce the level of glycemic control seems to be the key factor. Efforts should be directed at preventing periodontitis in patients who are at the risk of diabetes, as well as in those patients with poor metabolic control. Prevention and control of periodontal disease must be considered as an integral part of diabetes control. [6,7,8] Pre term low birth weight (PLBW), is a birth weight of less than 2500g with a gestational age of less than 37 weeks. Buduneli et al [12] study suggested that periodontal disease had a contributory role in PLBW. F.nucleatum, a gram negative anaerobe ubiquitous to the oral cavity, was isolated from

amniotic fluid, placenta, and chorioamnionic membranes of women delivering prematurely.[13] Case control and prospective studies have shown preliminary evidence of the treatment of periodontal disease as a method for preventing PLBW.[14] Cardiovascular disease is a common cause of death, accounting for 29% of deaths worldwide.[2] Etiologically, the chronic presence of periodontal microbes can lead to atherogenesis via two pathways: 1) direct invasion of the arterial wall[3] and 2) the release, in response to infection, of systemic inflammatory mediators with atherogenic effects.[9] *P.gingivalis* have demonstrated the ability to interact with the endothelial surface and to induce smooth-cell proliferation, causing damage and impairing the vasomotor functionality of the endothelial cells. [10,11,15] Periodontal disease is characterized by the resorption of bone, and the loss of soft tissue attachment of the tooth. Due to commonality of bone loss between periodontal disease and osteoporosis the outcomes of both are similar. Oral osteopenia and systemic osteopenia share risk factors including age, estrogen deficiency[16] and smoking. Parathyroid hormone functions as a mediator of bone modeling and as an essential regulator of calcium homeostasis.

2	Do you know oral disease is an indicator of systemic disease?	Yes	No	Dont know
3	Do you know diabetic patient will have gum problem?	Yes	No	Dont know
4	Will long term diabetes increase the severity of gum disease?	Yes	No	Dont know
5	Will severe gum problem worsen diabetes?	Yes	No	Dont know
6	Do you think treating diabetes will cure gum problems?	Yes	No	Dont know
7	Will diabetes cause loosening of teeth?	Yes	No	Dont know
8	Is gum disease common during pregnancy?	Yes	No	Dont know
9	Do you think regular check up to dentist is necessary during pregnancy?	Yes	No	Dont know
10	Will gum problem leads to heart problem?	Yes	No	Dont know
11	Do you think blood disorders cause gum problem?	Yes	No	Dont know
12	Will bone disease cause loosening of teeth?	Yes	No	Dont know

Table 1
Questionnaire

Name: Age/Sex: Op no:

1.Do you have any of the following problem?
a) diabetes b) heart problem c) blood problem d) hormonal problem e) bone problem

Table 2

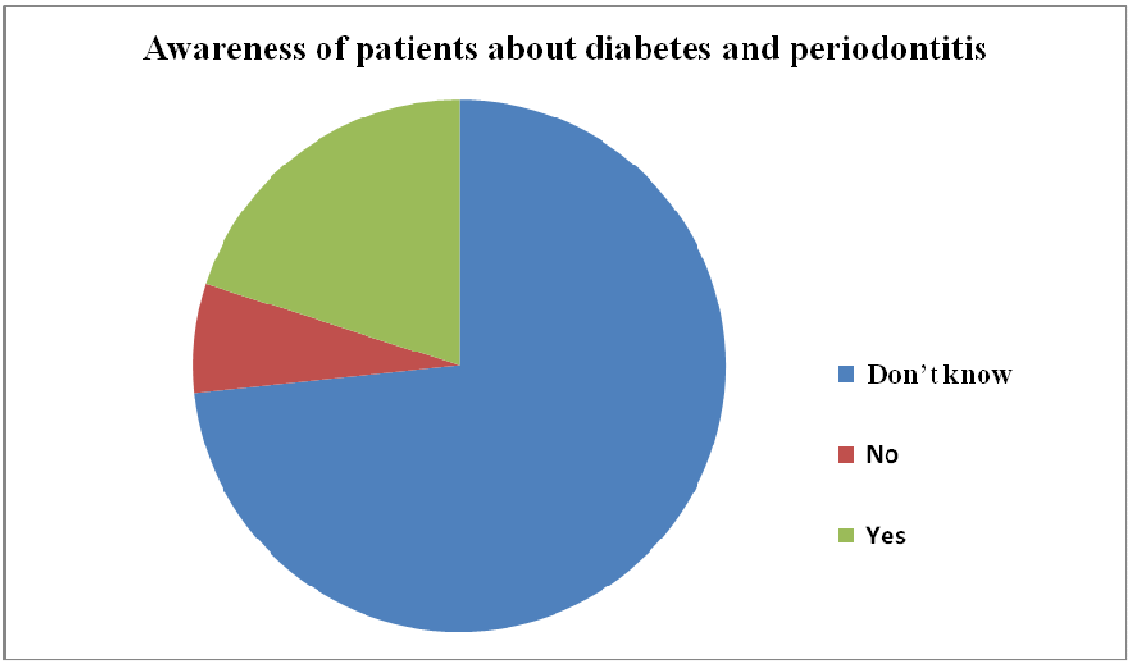
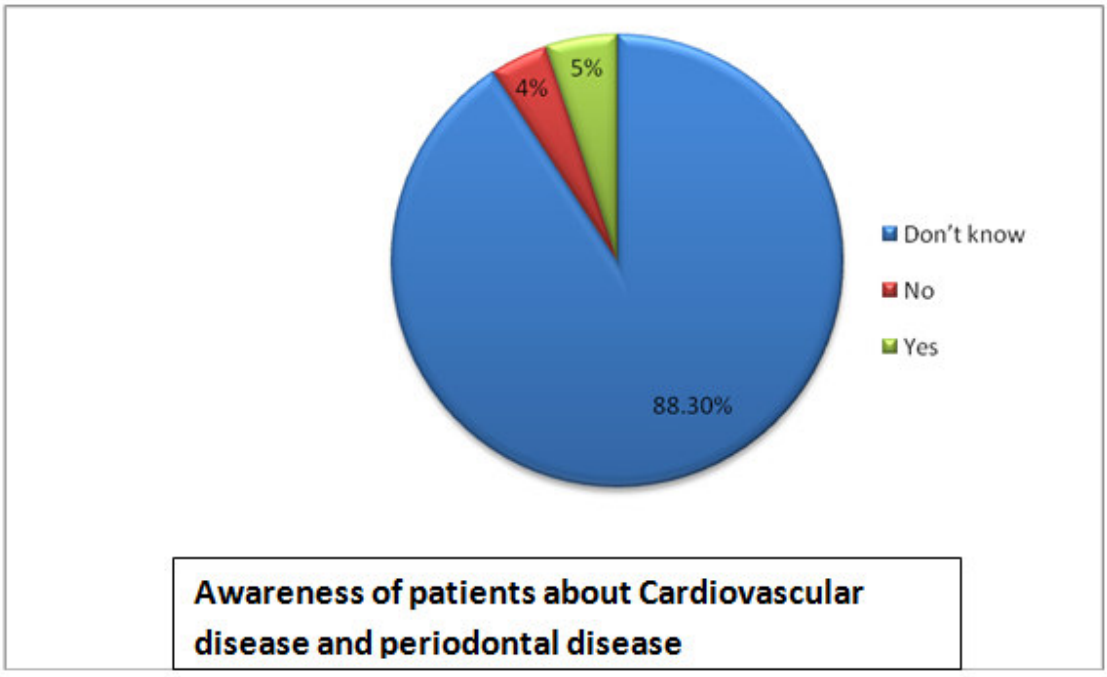


Table 3



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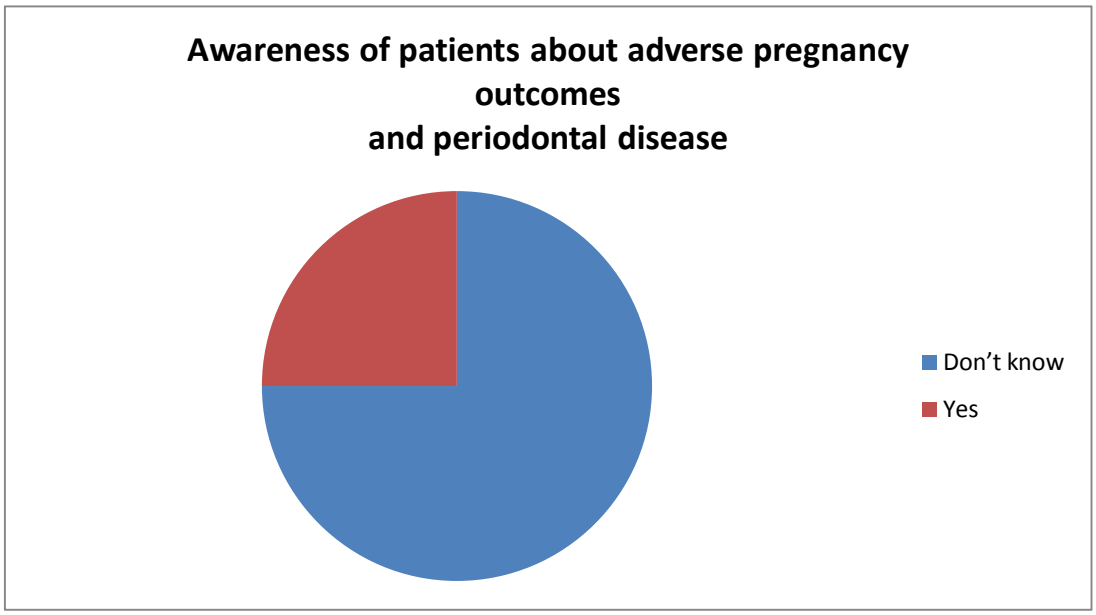

CONCLUSION

Periodontal disease is a risk factor for the development of various systemic conditions like diabetes, cardiovascular disease, osteoporosis and adverse pregnancy outcome. Many researches and studies were conducted to establish the relationship between the periodontal disease and systemic diseases. The awareness about the interrelationship among patients is very minimal. Awareness should be made available to the public and steps should be taken to prevent and to reduce the periodontal disease thereby reducing the systemic disease.

REFERENCES

1. Misrath Banu, Jaiganesh Ramamurthy. Periodontitis a risk factor for pre eclampsia in pregnant women, IJPBS 2014;5(2): 736-739.
2. Amar S, Han X. The impact of periodontal infection on systemic diseases. Med Sci Monit 2003; 9: RA 291-9.
3. Haraszthy VI, Zamson JJ, Trevian M, Zeid M, Genco RJ. Identification of periodontal pathogens in atheromatous plaques. J Periodontol 2000; 71: 1554-60.
4. Chun YH, Chun KR, Olguin D, Wang HL. Biological foundation for periodontitis as a potential risk factor for atherosclerosis. J Periodontol Res 2005; 40: 87-95.
5. Grossi SG, Zambon JJ, Ho AW, Koch G, Dunford RG, Machtel EE, et al. Assessment of risk for periodontal disease. I. Risk indicators for attachment loss. J Periodontol 1994;65:260-7.
6. Christgau M, Palitzsch KD, Schmalz G, Kreiner U, Frenzel S. Healing response to non surgical periodontal therapy in patients with diabetes mellitus: clinical, microbiological, and immunologic results. J Clin Periodontol 1998; 25: 112-24.
7. Stewart JE, Wager KA, Friedlander AH, Zadeh HH. The effect of periodontal treatment on glycemic control in patients with type 2 diabetes mellitus. J Periodontol 2001; 28: 306-10.
8. Offenbacher S, Salvi GE. Induction of prostaglandin release from macrophages by bacterial endotoxin. Clin Infect Dis 1999;28:505-13.

9. Loos BG, Craandijk J, Hoek FJ, Wertheim-van Dillen PM, van der Velden U. Elevation of systemic markers related to cardiovascular disease in peripheral blood of periodontitis patients. J Periodontol 2000; 71: 1528-34.
10. Khlgatian M, Nassar H, Chou HH, Gibson FC 3rd, Genco CA. Fimbria dependent activation of cell adhesion molecule expression in *Porphyromonas gingivalis* infected endothelial cells. Infect Immun 2002;70: 257-67.
11. Schachinger V, Britten MB, Zeiher AM. Prognostic impact of coronary vasodilator dysfunction on adverse long term outcome of coronary heart disease. Circulation 2000;101: 1899-906.
12. Buduneli N, Baylas H, Buduneli E, Turkoglu O, Kose T, Dahlen G. Periodontal infections and preterm low birth weight: a case control study. J Clin Periodontol 2005;32: 174-81.
13. Han YW, Redline RW, Li M, Yin L, Hill GB, McCormick TS. *Fusobacterium nucleatum* induces premature and term still births in pregnant mice: implication of oral bacteria in preterm birth. Infect Immun 2004; 72: 2272-9.
14. Lopez NJ, Silva ID, Ipinza J, Gutierrez J. Periodontal therapy reduces the rate of preterm low birth weight in women with pregnancy associated gingivitis. J Periodontol 2005; 76: 144-53.
15. Amar S, Gokce N, Morgan S, Loukideli M, Van Dyke TE, Vita JA. Periodontal disease is associated with brachial artery endothelial dysfunction and systemic inflammation. Arterioscler Thromb Vasc Biol 2003; 23: 1245-9.
16. Genco RJ, Grossi SG. Is estrogen deficiency a risk factor for periodontal disease? Compend Contin Educ Dent Suppl 1998; 22: S23-9.