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Original Research

Assessment of factors leading to peri- implantitis- A clinical study

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ABSTRACT:
Background: Dental implant applications have become more frequent in order to treat both aesthetic and functional disorders. The present study was conducted to assess factors leading to peri- implantitis. **Materials & Methods:** The present study was conducted on 125 patients who received 240 dental implants in last 1 year of both genders. Diabetic status, alcoholism and smoking habits were retrieved from case history proforma. A thorough clinical and radiographical examination was done. Reason of Peri- implantitis was recorded. **Results:** Out of 125 patients, males were 75 and females were 50. Males had 135 and females had 105 dental implants. Among smokers, 15 had Peri- implantitis, non smokers had 4, alcoholics had 8, non alcoholics had 2, diabetic had 5 and non- diabetic had 1. The difference was significant ($p< 0.05$). **Conclusion:** Authors found that there were more cases of peri-implantitis in smokers, diabetics and in alcoholics.
Key words: Diabetes, Peri-implantitis, Smokers.

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INTRODUCTION

Dental implant applications have become more frequent in order to treat both aesthetic and functional disorders caused by tooth loss. However, even if the implants can retain their presence in the mouth for a long time, the majority of the implants experience implant-related diseases.[1] In the literature review, peri-implant diseases are divided into two groups: Peri-implant mucositis and peri-implantitis. Both of them are associated with an inflammatory reaction in the peri-implant tissues. Implant systems today, have come a long way to provide comfort and long-term success in patients requiring implant-supported prosthesis as part of oral rehabilitation. The ongoing research in this area has made it even possible for dental implants to be available at very affordable cost, to enable the technology reach the masses.[2]

Implant failure has drastically reduced, mainly due to the research contribution in areas of good sterilization, diagnostic aids, three-dimensional imaging, bone grafting, the composition of the metal used, implant design, implantation techniques, and to name a few. Although dental implants are very promising today, peri-implantitis and implant failures are still a cause for major concern.[3]

The influence of the different risk factors, together with their specific weight and role in favouring peri-implant disease, needs to be fully clarified to elucidate the health/disease process affecting the marginal tissues surrounding dental implants. Strict disease definitions,

accurate stratification of the study groups and control of the confounders are crucial points to design appropriate trials, in order to evaluate the impact of each single risk factor in promoting the development of this multifactorial pathology.[4] The present study was conducted to assess factors leading to peri- implantitis.

MATERIALS & METHODS

The present study was conducted in the department of Periodontics and two multispeciality clinics. It comprised of 125 patients who received 240 dental implants in last 1 year of both genders. The study was approved from institutional ethical committee. All participants were informed regarding the study and written consent was obtained.

Data related to participants such as name, age, gender etc. was recorded. Diabetic status, alcoholism and smoking habits were retrieved from case history proforma. A thorough clinical and radiographical examination was done. Reason of Peri- implantitis was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of participants

	Total- 125	
Gender	**Males**	**Females**
Number	75	50
Number of implants	135	105

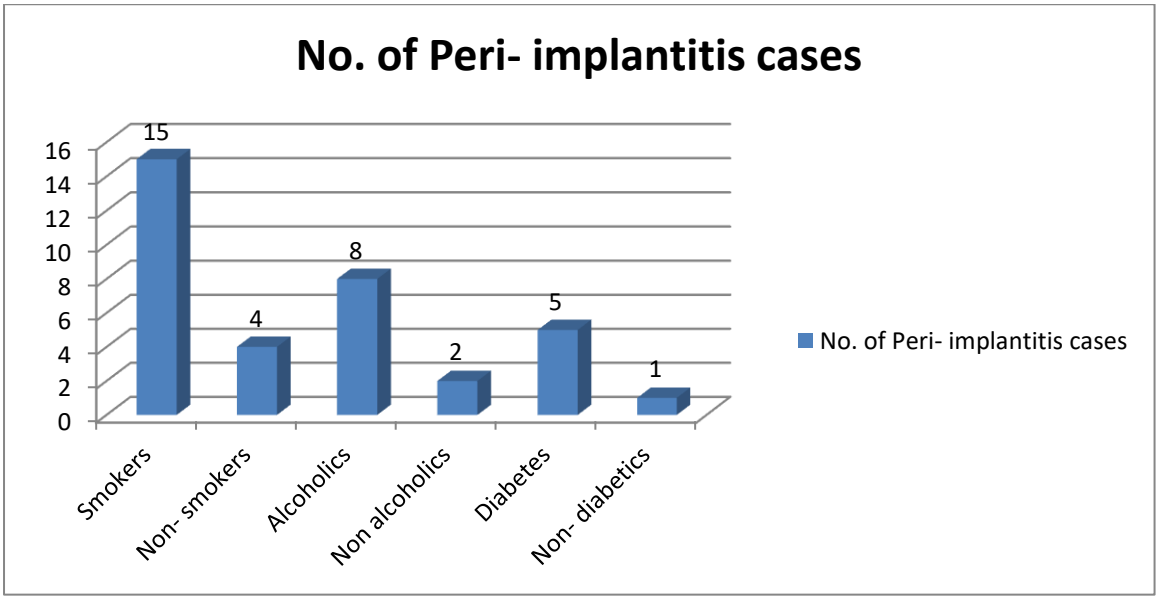
Table I shows that out of 125 patients, males were 75 and females were 50. Males had 135 and females had 105 dental implants.

Table II Assessment of Habits & Peri- implantitis

Habits	**No. of Peri- implantitis cases**	**P value**
Smokers	15	0.01
Non- smokers	4	
Alcoholics	8	0.04
Non alcoholics	2	
Diabetes	5	0.04
Non- diabetics	1	

Table II, graph I shows that among smokers, 15 had Peri- implantitis, non smokers had 4, alcoholics had 8, non alcoholics had 2, diabetic had 5 and non- diabetic had 1. The difference was significant ($p < 0.05$).

Graph I



DISCUSSION

Over the last decades, the use of implant-supported dental rehabilitations has known a significant increase. Despite a high overall success rate, various risk factors can negatively affect the predictability of dental implants, leading to peri-implant tissue inflammation, bone resorption and, ultimately, to implant loss. Among them, history of periodontal disease and smoking habits have often been identified as conditions favouring the onset of peri-implant pathologies. Even if several longitudinal studies have been conducted on these issues, showing some evidence of a negative impact on implant success, recent systematic reviews on this topic did not draw definitive conclusions.[5] Peri-implant mucositis and peri-implantitis are two common predisposing conditions contributing to implant failures today. According to the 6th European workshop on Periodontology (EWOP), peri-implant mucositis is defined as a reversible inflammatory reaction in the soft tissues surrounding a functioning implant. Peri-implantitis is defined as the presence of inflammation characterized by the loss of supporting bone around an implant in function.[6] The present study was conducted to assess factors leading to peri- implantitis.

In this study, out of 125 patients, males were 75 and females were 50. Males had 135 and females had 105 dental implants. Rodriguez et al[7] conducted a study to assess for alcohol and tobacco usage using AUDIT SCORE and Fagerstrom questionnaire and were also screened for peri-implantitis. There was the increase in the incidence of peri-implantitis in patients with the habit of smoking, poor oral hygiene, and those with implants placed in the maxillary bone.

We found that among smokers, 15 had Peri- implantitis, non smokers had 4, alcoholics had 8, non alcoholics had 2, diabetic had 5 and non- diabetic had 1. Galindo-Moreno et al[8] have studied the association between alcohol consumption and marginal bone loss and that alcohol-induced more serious peri-implantitis than cigarettes. Studies on genetic traits have shown conflicting results with no conclusive evidence either proving or disproving an association.

As the periodontitis is more common in diabetic patients, glycemic control is also related with peri-implant disease. Although the role of distinct physiological mediators in pathogenesis is not fully understood, evidence suggests that proinflammatory gene expression in peri-implantitis regions is affected by glycemic control. Ferreira et al.[9] exhibited patients with diabetes mellitus are more tendency to develop peri-implant than non-diabetic patients also the risk of diabetes and the increased risk of peri-implantitis were statistically related. In diabetics, poor metabolic control has been shown to provide a more favorable environment for infection and loss of implants.[10]

Smoking has been associated with a long duration of peri-implantitis scores and continues to be reported in literature as a potential risk factor for the survival of osseointegrated implants.[11] At the literature to assess whether treated periodontitis and smoking cues could be considered as risk factors for adverse outcomes in dental implants, either alone or in combination. Cigarette was accepted as an important risk for peri-implantitis formation in 3 of 4 systematic complements. Although the majority of studies report high implant survival rates ranging from 80% to 96% in smokers, the implant survival rate is statistically lower than in those who do not use cigarettes in most studies.[12]

CONCLUSION

Authors found that there were more cases of peri-implantitis in smokers, diabetics and in alcoholics.

REFERENCES

1. Mardinger O, Oubaid S, Manor Y, Nissan J, Chaushu G. Factors affecting the decision to replace failed implants: A retrospective study. J Periodontol 2008;79:2262-6.
2. Lindhe J, Meyle J, Group D of European Workshop on Periodontology. Peri-implant diseases: Consensus report of the sixth european workshop on periodontology. J Clin Periodontol 2008;35:282-5.
3. Zitzmann NU, Berglundh T. Definition and prevalence of peri-implant diseases. J Clin Periodontol 2008;35:286-91.
4. Murray CM, Knight ET, Russell AA, Tawse-Smith A, Leichter JW. Peri-implant disease: Current understanding and future direction. N Zealand Dent J 2013;109:55-62.
5. Nguyen-Hieu T, Borghetti A, Aboudharam G. Peri-implantitis: From diagnosis to therapeutics. J Investig Clin Dent 2012;3:79 94.
6. Karoussis IK, Salvi GE, Heitz-Mayfield LJ, Brägger U, Hämmerle CH, Lang NP, et al. Long-term implant prognosis in patients with and without a history of chronic periodontitis: A 10-year prospective cohort study of the ITI dental implant system. Clin Oral Implants Res 2003;14:329-39.
7. Rodriguez-Argueta OF, Figueiredo R, Valmaseda-Castellon E, Gay-Escoda C. Postoperative complications in smoking patients treated with implants: A retrospective study. J Oral Maxillofac Surg 2011;69:2152-7.
8. Galindo-Moreno, Persson GR. Periodontitis as a potential risk factor for peri-implantitis. J Clin Periodontol 2009;36 Suppl 10:9-14.
9. Ferreira SD, Silva GL, Cortelli JR, Costa JE, Costa FO. Prevalence and risk variables for peri-implant disease in brazilian subjects. J Clin Periodontol 2006;33:929-35.
10. Koldsland OC, Scheie AA, Aass AM. The association between selected risk indicators and severity of peri-implantitis using mixed model analyses. J Clin Periodontol 2011;38:285-92.
11. Rodriguez-Argueta OF, Figueiredo R, Valmaseda-Castellon E, Gay-Escoda C. Postoperative complications in smoking patients treated with implants: A retrospective study. J Oral Maxillofac Surg 2011;69:2152-7.
12. Costa FO, Takenaka-Martinez S, Cota LO, Ferreira SD, Silva GL, Costa JE, et al. Peri-implant disease in subjects with and without preventive maintenance: A 5-year follow-up. J Clin Periodontol 2012;39:173-81.