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## ORIGINAL RESEARCH

# Assessment of incidence of peri- implantitis among patients with Dental Implants

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***ABSTRACT*:**
**Background:** Dental Implant is one of the most important scientific and surgical achievements The present study was conducted to assess prevalence of peri- implantitis. **Materials & Methods:** The present study was conducted on 65 patients who received 125 dental implants in last 2 year of both genders. In all patients, a thorough clinical and radiographical examination was done. Periodontal status, diabetic status, alcoholism and smoking habits were also recorded. Reason of Peri- implantitis was established. **Results:** Out of 65 patients, males were 35 and females were 30. Males had 68 and females had 52 dental implants. In healthy subjects, 2, in gingivitis patients 3 and in periodontitis patients 7 had peri- implantitis. Among smokers, 10 had Peri- implantitis, non smokers had 2, alcoholics had 8, non alcoholics had 4, diabetic had 7 and non- diabetic had 5. The difference was significant ($p< 0.05$). **Conclusion:** Out of out of 120 dental implants, the prevalence of peri- implantitis found to be in 12 (10%). Risk factors of peri-implantitis were smoking, diabetes, alcoholism and periodontal diseases.
**Key words:** Diabetes, Peri-implantitis, Smokers.

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## INTRODUCTION

Dental Implant is one of the most important scientific and surgical achievements that have been worked on and developed over the last three decades. Effective and innovative solutions were achieved for many patients who need to replace their missing teeth in a modern unconventional ways. 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]

The success rate of osseointegrated dental implant is high, however many practitioners confront some complications that affect the long-term success of dental implant. 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. Peri-implant mucositis can be described as a reversible inflammatory reaction of the soft tissues surrounding an implant whereas peri-implantitis can be identified by inflammatory reactions associated with bone loss around the implant.[2]

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.[3]

There are many risk factors affecting the survival rate of dental implant, including occlusal overload, preoperative or postoperative infection, inadequate bone quality or quantity. Other related factors are the patient's overall health, oral hygiene, in addition to the technique and experience of the operator.[4]The present study was conducted to assess prevalence of peri- implantitis.

## MATERIALS & METHODS

The present study was conducted in the department of Periodontics. It comprised of 65 patients who received 125 dental implants in last 2 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. In all patients, a thorough clinical and radiographical examination was done. Periodontal status, diabetic status, alcoholism and smoking habits were also recorded. Reason of Peri- implantitis was established. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Gender | Males | Females |
|---|---|---|
| Number | 35 | 30 |
| Number of implants | 68 | 52 |

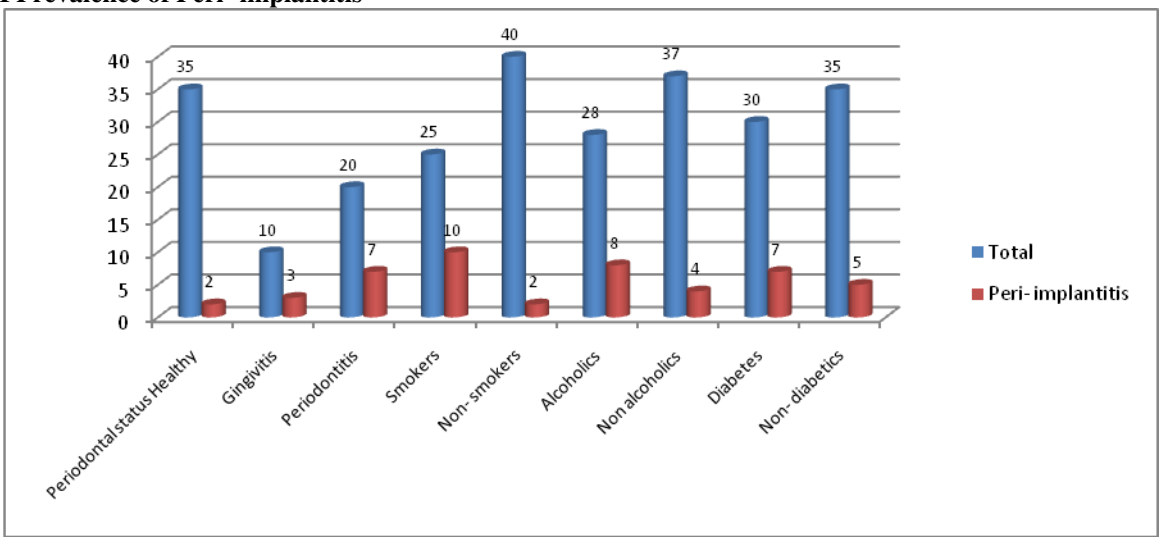
Table I shows that out of 65patients, males were 35 and females were30. Males had 68 and females had 52 dental implants.

**Table II Prevalence of Peri- implantitis**

| Habits | Total | Peri- implantitis | P value |
|---|---|---|---|
| **Periodontal status Healthy** | 35 | 2 | 0.05 |
| **Gingivitis** | 10 | 3 | |
| **Periodontitis** | 20 | 7 | |
| **Smokers** | 25 | 10 | 0.01 |
| **Non- smokers** | 40 | 2 | |
| **Alcoholics** | 28 | 8 | 0.04 |
| **Non alcoholics** | 37 | 4 | |
| **Diabetes** | 30 | 7 | 0.04 |
| **Non- diabetics** | 35 | 5 | |

Table II, graph I shows that in healthy subjects, 2, in gingivitis patients 3 and in periodontitis patients 7 had peri-implantitis. Among smokers, 10 had Peri- implantitis, non smokers had 2, alcoholics had 8, non alcoholics had 4, diabetic had 7 and non- diabetic had 5. The difference was significant ($p< 0.05$).

**Graph I Prevalence of Peri- implantitis**



## DISCUSSION

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.[5]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. Peri-implant mucositis and peri-implantitis are two common predisposing conditions contributing to implant failures today.[6]The present study was conducted to assess prevalence of peri- implantitis.

In this study, out of 65 patients, males were 35 and females were 30. Males had 68 and females had 52 dental implants. A et al[7] found that a cross-sectional study was carried out for 67 patients who had 188 dental implant supported prosthesis with at least 1 year of loading time. Modified plaque index (mPI), modified gingival index (mGI), probing depth, bleeding on probing, suppuration and mobility data were collected. Radiographs were required to evaluate supporting bone levels around implants with severe inflammatory signs. Findings revealed that on patients level (30%) of cases were with healthy implants, (43%) of cases were with peri-implant mucositis and (27%) with peri-implantitis. The overall outcome on implant level was (27%) healthy implants, (51%) with peri-implant mucostitis and (22%) with peri-implantitis. Highly statistic significance association was found between healthy periodontium and healthy peri-implant tissue status. Patients with a history of periodontitis and active periodontal disease were more prone to develop peri-implant diseases. Plaque accumulation around dental implants, function time, increased number of placed implants, implant supported by full arch fixed denture and overdentures were the most involved risk factors.

We found that in healthy subjects, 2, in gingivitis patients 3 and in periodontitis patients 7 had peri- implantitis. Among smokers, 10 had Peri- implantitis, non smokers had 2, alcoholics had 8, non alcoholics had 4, diabetic had 7 and non- diabetic had 5.Galindo-Moreno et al[8] included sixty-nine patients in the study. Each patient received a fixed full-arch prosthesis supported by two mesial axial and two distal tilted implants to rehabilitate the upper arch, the lower arch, or both. Three hundred thirty-six implants for 84 restorations were delivered. Patients were scheduled for follow-up visits every 6 months in the first 2 years and yearly after. At each follow-up visit peri-implant mucositis and peri-implantitis were diagnosed if present. The overall follow-up range was from 12 to 130 months (mean 63,2 months). Three patients presented peri-implantitis. The prevalence of peri-implant mucositis ranged between 0 and 7,14% of patients (5,06% of implants) while the prevalence of peri-implantitis varied from 0 to 4,55% of patients (3,81% of implants).

As the periodontitis is more common in diabetic patients, glycemic control is also related with peri-implant disease.[9] 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. In diabetics, poor metabolic control has been shown to provide a more favorable environment for infection and loss of implants. 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.[10]

Costaet al[11] 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.

## CONCLUSION

Authors found that out of out of 120 dental implants, the prevalence of peri- implantitis found to be in 12 (10%). Risk factors of peri-implantitis were smoking, diabetes, alcoholism and periodontal diseases.

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