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

Deepak Kochar, Avineet Kaur, Surinder Sachdeva, Bikramdeep Singh, Mohit Kamra, Swati Chhabra

1 Professor, 2 Assistant Professor, 3 Professor & HOD. Department of Periodontics, M.M College of Dental Sciences & Research, Maharishi Markandeshwar (Deemed to be University), Mullana Ambala, Haryana, India; 4 Private practitioner, Bani Dental Clinic, Patiala, Punjab; 5 Professor, Department of Prosthodontics, M.M College of Dental Sciences & Research, Maharishi Markandeshwar (Deemed to be University), Mullana Ambala; 6 Postgraduate 3rd Year Student, Department of Conservative Dentistry & Endodontics, M.M College of Dental Sciences & Research, Maharishi Markandeshwar (Deemed to be University), Mullana Ambala, Haryana, India

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 radiographic 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 alcoholics.

Key words: Diabetes, Peri-implantitis, Smokers.

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Corresponding author: Dr. Avineet Kaur, Assistant Professor, Department of Periodontics, M.M College of Dental Sciences & Research, Maharishi Markandeshwar (Deemed to be University), Mullana Ambala, Haryana, India

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. 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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total- 125</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>75</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Number of implants</td>
<td>135</td>
<td>105</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Habits</th>
<th>No. of Peri-implantitis cases</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smokers</td>
<td>15</td>
<td>0.01</td>
</tr>
<tr>
<td>Non-smokers</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Alcoholics</td>
<td>8</td>
<td>0.04</td>
</tr>
<tr>
<td>Non-alcoholics</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>5</td>
<td>0.04</td>
</tr>
<tr>
<td>Non-diabetics</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

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

No. of Peri-implantitis cases
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.

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. 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. Rodríguez et al. 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. 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. 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.

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. 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.

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

REFERENCES