

Assessment of Prevalence of Peri-Implantitis among Known Population

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ABSTRACT

Background: Dental implants have become an indispensable established therapy in dentistry in order to replace missing teeth in different clinical situations. Peri-implantitis sites exhibit clinical signs of inflammation and increased probing depths compared to baseline measurements. Hence; the present study was undertaken for assessing the prevalence of peri-implantitis among the known population.

Materials & methods: A total of 85 patients who underwent dental implant procedures for prosthetic rehabilitation of missing mandibular first molar were enrolled. Complete demographic details of all the patients were obtained. Thorough clinical examination of all the patients was carried out. All the implant procedures were placed under the hands of skilled and experienced implantologists. Follow-up was done, and both clinical and radiological examination was done at follow-up visits to identify the presence of peri-implantitis. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Peri-implantitis was found to be present in 20 patients. Hence; the prevalence of peri-implantitis was found to be 23.83 per cent of the patients. In the present study, out of 20 patients with peri-implantitis, 25 per cent of the patients belonged to the age group of fewer than 30 years. Mean age of the patients with peri-implantitis was found to be 38.4 years. 65 per cent of the patients were males, while the remaining were females.

Conclusion: Dental implant therapy is occasionally associated with peri-implantitis and hence; clinicians should take adequate care in such patients.

Keywords: Dental implants, Peri-implantitis, Complication.

INTRODUCTION

In the field of dentistry, in the present scenario, Dental implants have become an essential component. Their prime importance is the rehabilitation of missing teeth in various clinical conditions. In a previous study, after conducting a sixteen year, dental implants have been reported to have success rates of approximately 83 percent. Under ideal care and conditions, dental implant

therapy seems to be a safer therapeutic option for the rehabilitation of missing teeth.¹⁻³

Peri-implantitis refers to a pathological state that affects the tissues in the periphery of dental implants. It is characterized by inflammation of the connective tissue component of the peri-implant connective tissue resulting in progressive

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associated bone degeneration. However; still lacunae exists in relation to the underlying pathophysiology responsible for the transition of peri-mucositis to peri-implantitis. In some reported cases, the peri-implantitis has been found to be of sudden onset occurring during the early follow-up period. Peri-implantitis sites show clinical profile comprising of inflammation and raised probing depths in comparison to baseline measurements.⁴⁻⁶ Hence; the present study was undertaken for assessing the prevalence of peri-implantitis among the known population.

Materials & methods

The present study was conducted with the aim of assessing the prevalence of peri-implantitis among the known population. Written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 85 patients who underwent dental implant procedures for prosthetic rehabilitation of missing mandibular first molar were enrolled. Complete demographic information of all the patients was obtained. Inclusion criteria for the present study included:

- Patients within the age group of 25 to 55 years,
- Patients with an adverse history of any other systemic illness
- Patients with a negative history of any known drug allergy

After meeting the inclusion criteria, a thorough clinical examination of all the patients was carried out. All the implant procedures were placed under the hands of skilled and experienced implantologists. Follow-up was done and both clinical and radiological examination was done at follow-up visits to identify the presence of peri-implantitis. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

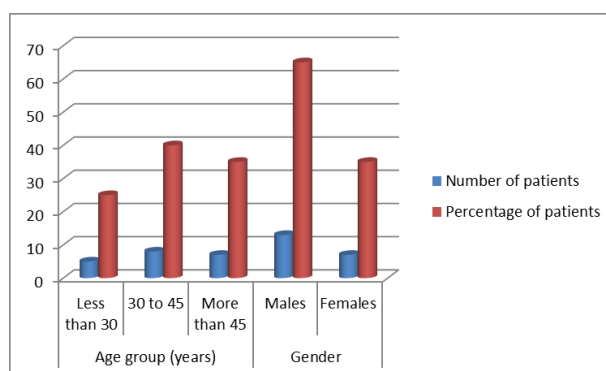
RESULTS

A total of 85 patients who underwent dental implant procedures for prosthetic rehabilitation of missing mandibular first molar were enrolled.

Overall, peri-implantitis was found to be present in 20 patients. Hence; the prevalence of peri-implantitis was found to be 23.83 percent of the patients. In the present study, out of 20 patients with peri-implantitis, 25 percent of the patients belonged to the age group of fewer than 30 years. Mean age of the patients with peri-implantitis was found to be 38.4 years. 65 percent of the patients were males, while the remaining were females.

Table 1: Prevalence of Peri-implantitis

Parameter	Number of patients	Percentage of patients
Peri-implantitis	20	23.83



Graph 1: Age and gender-wise distribution of patients with per-implantitis

DISCUSSION

Peri-implantitis has now become one of the frequent causes of dental implant failure. Various studies have reported varying rate of incidence and prevalence of peri-implantitis in the past couple of decades. In a meta-analysis quoted in the past literature, authors have reported the prevalence rate of peri-implantitis varying from approximately 1 percent to 8 percent. Still literature lacks convincing evidence that could identify osteoporosis or implant surface characteristics as risk factors for peri-implantitis.¹⁰ Hence; the present study was undertaken for assessing the prevalence of peri-implantitis among known population.

In the present study, a total of 85 patients who underwent dental implant procedures for prosthetic rehabilitation of missing mandibular first molar were enrolled. Overall, peri-implantitis was found to be present in 20 patients. Hence; the

prevalence of peri-implantitis was found to be 23.83 percent of the patients.

In past research conducted by KordbachehChangi K et al., authors have analyzed the prevalence rate and associated risk factors responsible for the occurrence of peri-implantitis in a known population. The authors analyzed the electronic, oral health records (EHRs) in their academic institution. Analysis of a total of 2127 patients was done in their study. All these patients collectively underwent a total of 6129 dental implant placement procedures. Examination of EHRs was done in a randomly ten per cent of the data population. "Intact" implants had no or ≤ 2 mm PBL increased from baseline. EHRs notes were analyzed for corroborating a definitive peri-implantitis diagnosis at implants with progressive bone loss. A nested case-control analysis of peri-implantitis-affected implants randomly matched by age with "intact" implants from peri-implantitis-free individuals identified putative risk factors.

They reported a prevalence rate of 34 percent for peri-implantitis over a follow-up period of two years. Per patient, the incidence rate was 0.16 while per implant, the incidence rate was found to be 0.10, respectively. They reported ill-fitting dental prosthesis, cement-retained prosthesis and periodontitis (radiographic) as substantial risk factors for peri-implantitis. An implant placed in the mandible and use of antibiotics in conjunction with implant surgery emerged as protective exposures. Approximately 1/3 of the patients and 1/5 of all implants experienced peri-implantitis.¹¹

In the present study, out of 20 patients with peri-implantitis, 25 percent of the patients belonged to the age group of less than 30 years. Mean age of the patients with peri-implantitis was found to be 38.4 years. 65 percent of the patients were males, while the remaining were females. Prevalence of peri-implant pathologies (both implant-based and patient-based) was assessed in a previous study conducted by Lee CT et al. They did an electronic search in MEDLINE (PubMed), EMBASE and Web of Science. They performed a publication screening, data extraction, and quality assessment. Clinical researches with a minimum of three years of the follow-up period were analyzed. The numbers of subjects and implants in the studies had to be equal to or more than thirty. Assessment of final 47

reviews was done followed by the assessment of the prevalence of peri-implantitis. Since heterogeneity existed in each outcome, the random-effects model, based on the DerSimonian and Laird method, which incorporate an estimate of heterogeneity in the weighting, was applied to obtain the pooled prevalence. Weighted mean implant-based and subject-based peri-implantitis prevalences were 9.25% and 19.83% respectively. Weighted mean implant-based and subject-based peri-implant mucositis prevalences were 29.48% and 46.83% respectively. Functional time and implant to subject ratio were associated with subject-based peri-implantitis prevalence, but not peri-implant mucositis prevalences. Peri-implant diseases were prevalent and prevalence of peri-implantitis increased over time. Prevalences of peri-implantitis and peri-implant mucositis might not be highly associated since the prevalences were influenced by distinct variables. The results should be carefully interpreted because of data heterogeneity. Peri-implant diseases affect a significant number of dental implants and patients.¹²

CONCLUSION

From the above results the authors concluded that dental implant therapy is occasionally associated with peri-implantitis and hence; clinicians should take adequate care in such patients.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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