Original Article

Assessment of dental implants in medically compromised patients: A retrospective study

Rajat Khajuria[1], Tanvi Sudan[2], Sidhant Sudan[3], Saurabh Sharma[4]

Lecturer[1], Department of prosthodontics & crown and bridges, Indira Gandhi govt. dental college, Jammu, PG student[2], Department of Pedodontics and preventive dentistry, Himachal dental college, Sundarnagar (H.P), Registrar[3], Department of prosthodontics & crown and bridges, Indira Gandhi govt. dental college, Jammu, PG student[4], Department of prosthodontics & crown and bridges, Darshan Dental college, Udaipur

Abstract

BACKGROUND: Dental implants are widely used nowadays. The present study was conducted to assess outcomes of dental implants in medically compromised patients. **MATERIAL & METHODS:** This study was conducted on 120 patients (480 implants) were included in the study. Patients were divided into 2 groups. Group I consisted of 60 patients with 240 implants and control group consisted of 60 patients with 240 implants. The failure rates of the dental implants were evaluated. **RESULTS:** Group I (Study group) consisted of 60 patients with 240 implants. Group II (Control group) consisted of 60 patients with 490 implants. In group I, out of 60 patients, 35 were females and 25 were males. In group II, out of 60 patients, 30 were females and 30 were males. The difference was non- significant (P- 0.1). In group II, 24 were of CVS, 20 were of diabetes, 10 were suffering from osteoporosis, 6 were of hypothyroidism. The failure rate of dental implants among the patients was 2 % in group I and 7 % in group II. The difference was statistical significant (P< 0.05). **CONCLUSION:** Author concluded that medically compromised patients have higher implant failure rates as compared to healthy one.

KEY WORDS: Cardiovascular diseases, Hypothyroidism, Implant

Corresponding author: Rajat Khajuria, Lecturer, Department of prosthodontics & crown and bridges, Indira Gandhi govt. dental college, Jammu.

This article may be Cited as**:** Khajuria R, Sudan T, Sudan S, Sharma S. Assessment of dental implants in medically compromised patients: A retrospective study. HECS Int J Com Health and Med Res 2018;4(1):54-56

Received on: 30 November, 2017 **Accepted on:** 10 December, 2017

INTRODUCTION

Earlier the missing teeth were used to be replaced by either removable or fixed partial denture. Nowadays, dental implants have evolved as new treatment modality for the majority of patients and are expected to play a significant role in oral rehabilitation in the future.[1] A success rate of 90%-95% has been reported over the 10 years. Pain, infection and haemorrhage and o Treatment of partial and total edentulism with dental implants has evolved into a predictable procedure for the majority of patients and is expected to play a significant role in oral rehabilitation in the future.[2] The long-term outcome studies which are now available for many of the implant techniques used indicate that successful integration and restoration of implants are now the expected therapeutic outcome. Occasionally neuropathy is early complications of implant.

The reasons for implants failure are lack of osseointegration during early healing, infection of the peri-implant tissues and breakage.[3] The contraindications of implant placement are children & adolescents, epileptic patients, endocarditis, osteoradionecrosis, smoking and diabetes. Absolute contraindications consists of myocardial infarction and cerebrovascular accident, bleeding disorder, cardiac transplant, immunosuppression, active treatment of malignancy, drug abuse, and psychiatric illness, and intravenous bisphosphonate (BPs) use.[4,5]

An existing systemic disease or ongoing systemic therapy may complicate or contra-indicate implant dentistry. An increased knowledge of the underlying disease process has improved the management of patients suffering from bone metabolism abnormalities, diabetes mellitus, xerostomia, and ectodermal dysplasias. In patients with systemic health problem,

few additional precautions such as the placement of implant with strict asepsis, minimal trauma, avoidance of stress, and hemorrhage should be considered.[6] The present study was conducted to evaluate dental implant failures in medically compromised patients.

MATERIALS & METHODS

This study was conducted on 120 patients of both genders. All were informed regarding the study and written consent was obtained. The inclusion criteria was patients with controlled systemic diseases and treated with dental implants in last 2 years. The survival of the dental implants was evaluated during the follow-up period and according to the radiographic data available and to clinical follow-up. Results obtained were subjected to statistical analysis. Chi square test was applied and p value less than 0.05 was considered significant.

RESULT

Table I Distribution of patients

Group I		Group II	
No. of patients	No. of implants	No. of patients	No. of implants
60	240	60	240

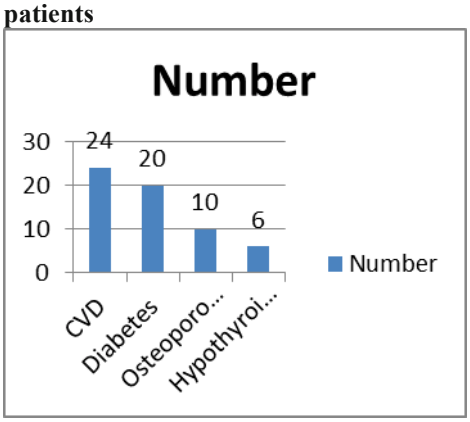
Table I shows that group I (Study group) consisted of 60 patients with 240 implants. Group II (Control group) consisted of 60 patients with 490 implants.

Table II Distribution of patients according to gender

Group I		Group II		P value
Male	Female	Male	Female	0.1
25	35	30	30	

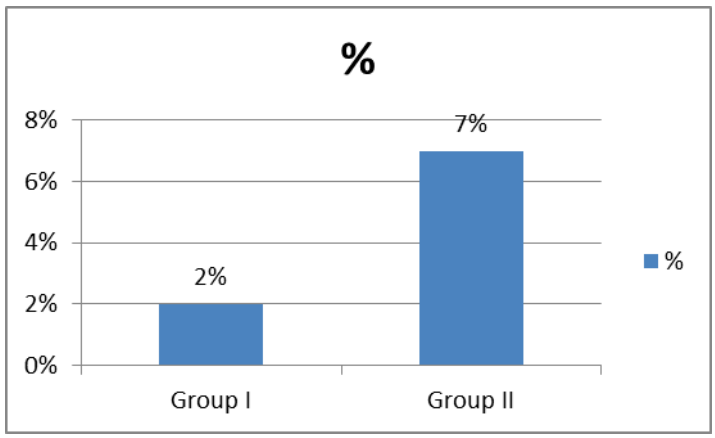
Table II shows that in group I, out of 60 patients, 35 were females and 25 were males. In group II, out of 60 patients, 30 were females and 30 were males. The difference was non- significant (P- 0.1).

Graph I Distribution of medically compromised patients



Graph I shows that in group II, 24 were of CVS, 20 were of diabetes, 10 were suffering from osteoporosis, 6 were of hypothyroidism.

Graph II Failure implant rates



Graph II shows the failure rate of dental implants among the patients was 2 % in group I and 7 % in group II. The difference was statistical significant (P< 0.05).

DISCUSSION

The placement of dental implant is quite simple and easy in healthy individual as compared to unhealthy subjects. In medically compromised patients such as patients with hypertension, diabetes, hypothyroidism, severe bleeding disorders etc., special care has to be done before placing implant.[7]

From the patients records (clinical and radiograpahs), we evaluated bone loss around the implant, signs of infection around the implant, level of bone around the implant according to radiographic images. For implant failure, implants with >1mm of marginal bone loss in the first year was considered. For this, the criteria given by Alberktsson et al. followed.[8]

In present study, group I, out of 60 patients, 35 were females and 25 were males. In group II, out of 60 patients, 30 were females and 30 were males. In group II, 24 were of CVS, 20 were of diabetes, 10 were suffering from osteoporosis, 6 were of hypothyroidism. This is similar to Chrcanovic et al.[9] Few studies have mentioned the implant failure cases in smokers and patients with head and neck radiotherapy and patients suffering from osteoporosis undergoing bisphosphonates therapy.[10] Maccarthy et al[11] in their study revealed, failure rate of 10.9 % in osteoporotic subjects, 8.29 % in osteopenic, and 11.43 % in healthy patients. However, Schiegnitz[12] did a meta-analysis on the impact of bisphosphonates on implant survival rates and concluded that there is no negative effect of bisphosphonates on dental implant survival rate and their use does not reduce their success rate.

In a study of Mozatti et al[13], a total of 204 patients (1003 dental implants) were included in the research, in the study group, 93 patients with 528 dental implants and in the control group, 111 patients with 475 dental implants. No significant differences were found between the groups regarding implant failures or complications. The failure rate of dental implants among the patients was 11.8%in the study group and 16.2%in the control group (P = 0.04). It was found that patients with a higher number of implants (mean 6.8)

had failures compared with patients with a lower number of implants (mean 4.2) regardless of their health status ($P < 0.01$).

The literature contains numerous observations on the significance of systemic disorders as contraindications to dental endosseous implant treatment, but the justification for these statements is often apparently allegorical. Although implants are increasingly used in healthy patients, their appropriateness in medically compromised patients is less equivocal. Perhaps surprisingly, the evidence of their efficacy in these groups of patients is quite sparse. Indeed, there are few if any randomized controlled trials (RCTs) in this field.[14] Furthermore, any health risks from the placement of implants are unclear.

CONCLUSION

Author concluded that medically compromised patients have higher implant failure rates as compared to healthy one.

REFERENCES

1. Moraschini V, Poubel LA, Ferreira VF, BarbozaEdos S. Evaluation of survival and success rates of dental implants reported in longitudinal studies with a follow-up period of at least 10 years: a systematic review. Int J Oral Maxillofac Surg. 2014; 44:377–388.
2. Spiekermann H, Jansen VK, Richter EJ. A 10-year follow-up study of IMZ and TPS implants in the edentulous mandible using bar-retained overdentures. Int J Oral Maxillofac Implants. 1995;10:231–243.
3. Al-Sabbagh M, Okeson JP, KhalafMW, Bhavsar I. Persistent pain and neurosensory disturbance after dental implant surgery: pathophysiology, etiology, and diagnosis. Dent Clin N Am 2015; 59: 131–142.
4. Scully C, Hobkirk J, Dios PD. Dental endosseous implants in the medically compromised patient. J Oral Rehabil. 2007; 34:590–599.
5. Balshi TJ,Wolfinger GJ. Management of the posterior maxilla in the compromised patient: historical, current, and future perspectives. Periodontol. 2003; 33:67–81.
6. Diz PA, Scully CB, Sanz MC. Dental implants in the medically compromised patient. J Dent. 2013; 41:195–206.
7. Balshi TJ,Wolfinger GJ. Management of the posterior maxilla in the compromised patient: historical, current, and future perspectives. Periodontol. 2003; 33:67–81.
8. Alberktsson T, Zarb G, Worthington P, Eriksson AR. The long term efficacy of currently used dental implants: a review and proposed criteria of success. Int J Oral Maxillofac Implants. 1986;1:11– 25.
9. Chrcanovic BR, Albrektsson T,Wennerberg A. Smoking and dental implants: a systematic review and meta-analysis. J Dent. 2015; 43: 487–498.
10. Pjetursson BE, Thoma D, Jung R, Zwahlen M, Zembic A. A systematic review of the survival and complication rates of implantsupported fixed dental prostheses (FDPs) after a mean observation period of at least 5 years. Clin Oral Implants Res 2012; 23:22–38.
11. McCarthy FM, Malamed SF. Physical evaluation system to determine medical risk and indicated dental therapy modifications. J Am Dent Assoc. 1979; 99:181–184.
12. Schiegnitz E, Al-Nawas B, Kämmerer PW, Grötz KA. Oral rehabilitation with dental implants in irradiated patients: a metaanalysis on implant survival. Clin Oral Investig. 2014; 18:687–698.
13. Mozzati M, Arata V, Giacomello M, Del Fabbro M, Gallesio G, Mortellaro C, Bergamasco L. Failure risk estimates after dental implants placement associated with plasma rich in growth factor-Endoret in osteoporotic women under bisphosphonate therapy. J Craniofac Surg. 2015; 26:749–755

Source of support: Nil

Conflict of interest: None declared