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Original Article

A RETROSPECTIVE STUDY OF ASSESSMENT OF SURVIVAL RATES OF DENTAL IMPLANTS IN MEDICALLY COMPROMISED PATIENTS

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ABSTRACT

Background: Dental implants have revolutionarized the field of dentistry. Patients with missing teeth prefer this treatment. Certain medical conditions affect management. The present study was done to record complications following dental implantation in medically compromised patients. **Material & methods**: This study was conducted on 180 patients (640 implants) which were divided into 2 groups. Study group which consisted of 90 patients with 320 implants and control group which consisted of 90 patients with 320 implants. The success rate and complications of the dental implants were evaluated clinically and radiographically. **Results**: In group I, males were 50 and females were 40 and in group II, males were 60 and females were 30. The difference was significant (P< 0.05). In group I, 35 patients were diabetic, 20 were of osteoporosis, 10 had hypothyroidism and 25 had CVDs. The difference was statistical significant (P- 0.01). Group I had 76% survival rate and group II had 90%. The difference was significant (P- 0.05). Conclusion: Dental implant treatment is a best in patients requiring restoring missing teeth. However medical conditions are threat to the treatment. Medical compromised patients had lower survival rate as compared to normal subjects.

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. A dental implant is a surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge, denture, facial prosthesis or to act as an orthodontic anchor.1A success rate of 90%-95% has been reported over the 10 years.1

Pain, infection and hemorrhage and occasionally neuropathy are early complications of implant. Implants have got failure rates also. Failure is typically because of loosening, breakage, or infection but complications can include pain or occasionally neuropathy. Severe complications during implant surgery such as hemorrhage in the floor of the mouth or descending necrotizing mediastinitis are rare, and have not usually been related to the medical background of the patient.2

There are very few accepted absolute medically related contraindications to dental implant treatment, although a number of conditions may increase the risk of treatment failure or complications. The degree of systemic disease control may be far more important than the nature of the disorder itself, and individualized medical equilibrium should be established prior to implant therapy.3

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The contraindications of implant placement are children & adolescents, epileptic patients, endocarditis, osteoradionecrosis etc. Absolute contraindications consists of myocardial infarction and cerebrovascular accident, bleeding disorder, cardiac transplant, immunosuppression, active treatment of malignancy, drug abuse, and psychiatric illness.4,5 Contraindications are mainly based on both the risk of medical complications related to implant surgery and the rate of implant success in medically compromised patients.4 The present study was conducted to record complications following dental implantation in medically compromised patients.

MATERIALS & METHODS

This study was conducted in department of Prosthodontics. This was a retrospective study conducted on 180 subjects. 90 were in study group with 320 dental implants and equal number of controls was selected (90 subjects, 320 dental implants). Dental records of all subjects were retrieved from the department. Patients with controlled systemic diseases and treated with dental implants in last 5 years were included. Patients with uncontrolled diabetes, uncontrolled hypertension and patient's post radiation therapy were excluded. Ethical clearance was obtained prior to the study.

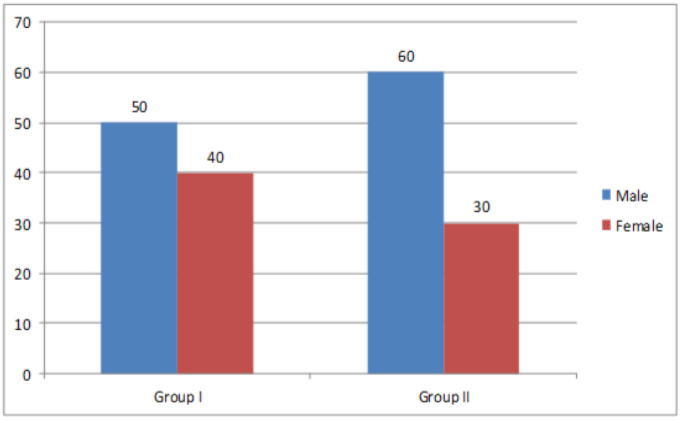
General information such as name, age, gender etc. was recorded. Amount of bone loss around the implant, signs of infection and level of bone around the implant were recorded. Results obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Result

Table I shows that Group I (Study group) consisted of

Total- 180		P value
Group I (Study)	Group II (Control)	
90 (320)	90 (320)	1

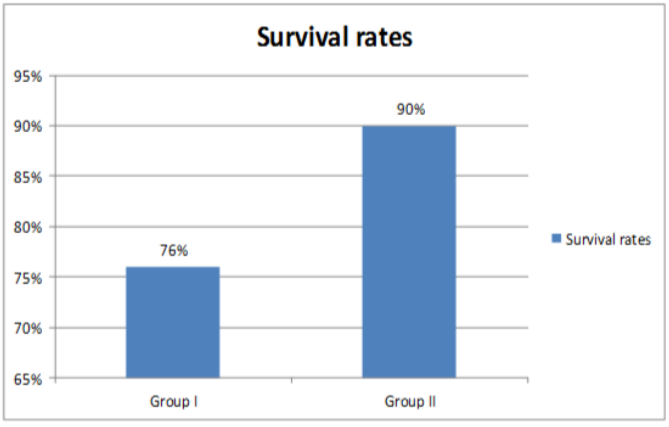
Table I Distribution of patients



Graph I Gender wise distribution

	Diabetes	Osteopo -rosis	Hypothyro -idism	Cardiovas- cular disease	P value
No.	35	20	10	25	0.01

Table II Distribution of medically compromised patients



Graph II Survival rates in both groups

90 patients with 320 dental implants. Group II (Control group) consisted of 90 patients with 320 implants. The difference was non- significant.

Graph I shows that in group I, males were 50 and females were 40 and in group II, males were 60 and

females were 30. The difference was significant (P< 0.05).

Table II shows that in group I, 35 patients were diabetic, 20 were of osteoporosis, 10 had hypothyroidism and 25 had CVDs. The difference was statistical significant (P- 0.01).

Graph II shows that group I had 76% survival rate and group II had 90%. The difference was significant (P- 0.05).

DISCUSSION

In medically compromised patients such as patients with hypertension, diabetes, hypothyroidism, severe bleeding disorders etc. are challenges for the dentists. Osteoporosis is the most studied bone-related disease. It is a common condition characterized by generalized reduction in bone mass with no other bone abnormality. Hemorrhage has been considered one of the most common complications related to endosseous implants. However, we have elicited no reliable evidence to suggest that bleeding disorders are a contraindication to the placement of dental implants.5

Surgical resection of head and neck cancer can be severely mutilating. DI in oral cancer patients are successfully used for dental rehabilitation after bony reconstruction of the jaws and for retention of a prosthetic device. Corticosteroid adverse effects include reduced bone density, increased epithelial fragility and immunosuppression. In consequence, the use of systemic glucocorticoids might compromise DI osseointegration and peri-implant healing. There is no evidence that corticosteroid therapy is a contraindication to DI, but it is important to consider that systemic corticosteroids can cause suppression of the hypothalamo–pituitary–adrenal axis and therefore, standard recommendations for any oral surgery in patients on steroid therapy should be implemented.6

t has been suggested that some cardiovascular events such as recent myocardial infarction, stroke, and cardiovascular surgery, might represent an absolute contraindication to implant therapy. Ashok et al7 in a retrospective analysis of 124 consecutively treated DI patients, including cardiovascular disease patients, patients with a history of other systemic disease, and healthy controls found almost equal number of dental implant failures as in the control group.

In present study we divided subjects into 2 groups. Group I was study group which comprised of 90 patients with 320 dental implants and equal number of controls were included in group II. in group I, males were 50 and females were 40 and in group II, males were 60 and females were 30. This is similar to Mehta et al.8

A retrospective study by Benner et al9 involved a total of 204 patients (1003 dental implants). 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).

In present study, in group I, 35 patients were diabetic, 20 were of osteoporosis, 10 had hypothyroidism and 25 had CVDs. Group I had 76% survival rate and group II had 90%. This is in agreement with Teswe et al.10

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. In the literature,

various studies regarding success of implants in medically compromised patients have been discussed. Pedro11 suggested that there are very few absolute medical contraindications to dental implant treatment, although a number of conditions may increase the risk of treatment failure or complications. The degree of systemic disease-control may be far more important that the nature of the disorder itself, and individualized medical control should be established prior to implant therapy, since in many of these patients the quality of life and functional benefits from dental implants may outweigh any risk.

CONCLUSION

Dental implant treatment is a best in patients requiring restoring missing teeth. However medical conditions are threat to the treatment. Medical compromised patients had lower survival rate as compared to normal subjects.

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