

Assessment of Dental Implants Survival in Medically Compromised Patients

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ABSTRACT

Background:

The best treatment modality for replacement of teeth is dental implant therapy. Success of dental implant is based on many factors.

Objectives:

The present study was conducted to assess failure rate of dental implant in medically compromised patients.

Materials and Methods:

This study consists of 70 medically impaired patients of both genders who undergone dental implants 5 years ago (Group I). A control group of an equal number of healthy individuals was selected (Group II). Failures were defined as bone loss surrounding the implant of more than 1 mm in the first year and more than 0.3 mm in each subsequent year.

Results:

Groups I and II had a total of 70 subjects, and each group had 80 implants. Diabetes was more common among medically challenged individuals, followed by hypothyroidism, organ transplantation, cardiovascular disease, and osteoporosis. When compared to the healthy group, the medically challenged group had the highest rates of implant failure and bone loss.

Conclusion:

Among medically compromised conditions, higher failure rate was found in diabetes.

Keywords: Dental implant, failure, medically compromised patients

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Introduction

In general, dental implants (DI) are thought to be the best option for treating tooth loss. Dental caries and periodontal disorders are common causes of tooth loss.[1] Dental dental dental dental dentistry dental dental dental dental dental dental dental dental dental dental treatment is the best. According to reports, the most common age range for implant therapy is either above 40 or between 51 and 60. As a result, patients who needed dental implant therapy typically had systemic comorbidities.[2] [2] The assurance that the alveolar process will receive the masticatory forces is one advantage of dental implants. Additionally, dental implants improve a person's quality of life [3].

Local and systemic The success of dental implants depends on several factors [1]. A patient who is not in the same physical or mental state as other people of the same age is classified as medically compromised (MCP). For these patients, there is a considerable danger of surgical and medical issues during implant placement and upkeep. Therefore, comprehensive surgical and medical histories as well as a clinical evaluation are required in order to implement particular measures to reduce the risk of problems [4].

Numerous systemic conditions, such as diabetes mellitus, hypothyroidism, osteoporosis, thyrotoxicosis, blood disorders, smoking, xerostomia, CVS, etc., may make dental implant therapy more difficult. Absolute contraindications include cerebrovascular accidents, drug addiction, cardiac transplants, myocardial infarction, immunosuppression, ongoing cancer treatment, and mental health conditions [5]. Endocarditis infection is usually a problem for people who have prosthetic valve replacements. Dental professionals should wait until initial stabilisation since there is a considerable risk of complications following a myocardial infarction or cerebrovascular accident [6].

The present research was done to evaluate failure rate of dental implant in medically compromised patients.

Materials and method

The Department of Prosthodontics and Oral Implantology carried out this retrospective investigation. It included 70 medically impaired individuals of both sexes who had dental implants five years prior (Group I). A control group of an equal number of healthy individuals was selected (Group II). Inclusion criteria comprised of patient's age spanned 32-60 years, patients with full medical and dental history and patients who underwent dental implant 5 years ago. Exclusion criteria consisted of individuals with history of

chemotherapy or radiation therapy and incomplete patient record. The ethical committee gave its approval to the study protocol.

Data such as name, age, gender etc., were retrieved from the patient's record file. Amount of bone loss around the implant over 1 mm of bone loss in the first year and over 0.3 mm bone loss every subsequent year were considered as failures. Any signs of infection close to the implant structure leading to instability and displacement of the implant were also recorded. The confirmation of failure was made based of subsequent radiographs. Patients were regularly recalled and intra- oral periapical radiographs as well as panoramic radiographs were taken. The radiological finding was retrieved from patient case record.

The obtained data was statistically evaluated with SPSS package (24.0 version, Inc.; Chicago, IL) using Mann-Whitney test, chi square test at *P* value less than 0.05 was considered significant.

Result

Table 1: Patients allocation

Groups	Group I (Medically compromised)	Group II- healthy
Number	70	70
Implant	80	80

Table 1 shows distribution of 70 patients in each group; group I (medically compromised) with 80 dental implants and Group II (healthy subjects) with 80 implants.

Table 2: Distribution of dental implants placed in medically compromised subjects

Medically compromised patients	Number of patients	Number of implants	p
Diabetes	26	28	0.043
Organ transplant	12	14	
Cardiovascular diseases	10	12	
Hypothyroidism	16	18	
Osteoporosis	6	8	
Total	70	80	

Table 2 shows that most commonly seen medically compromised patients were diabetes (26) with 28 dental implants followed by hypothyroidism (16) with 18 dental implants, organ transplant (12) with 14 dental implants, Cardiovascular diseases (10) with 12 dental implants and osteoporosis (6) with 8 dental implants. Chi- square test was applied which revealed significant difference in patients (*P* < 0.043).

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