

Assessment and Appraisal of the Efficacy of Implants in Medically Compromised Patients: A Retrospective Study

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ABSTRACT

Abstract: In the current era, the emergence of the treatment modality in the form of dental implants for the patients with missing teeth is a common trend. With the enhanced knowledge and acumen owing to the better understanding of the biological concepts, the efficacy of the treatment procedure and the excellent success rate has accomplished innovative pinnacles. However, in spite of unrestrained success rate, there is inadequate material evidence available to assess and appraise the efficacy of implants in medically compromised patients. **Aim:** The core aim of the study was to focus on assessing and appraising the efficacy of implants in medically compromised patients by exploring the rate of complications and failures following dental implantation in medically compromised patients. **Material & Methods:** This retrospective study was comprised of the group of the patients that had undergone an implant surgery in last 3 years. The study was based on dividing the subjects into two groups, namely study group, and control group. The study group consisted of 117 patients that had a history of major medical illness while the control group consisted of 103 patients that did not reveal any history of existing medical conditions. Based on this information, the efficacy of the implants in medically compromised patients was explored. **Results:** In the study group, designated as group A, out of 117 patients, 57 were females, and 60 were males. In the control group, designated as group B, out of 103 patients, 48 were females, and 55 were males. Group A had 331 implants intact and in the healthy condition which amounted for 83.37% implant success. However, the group had 66 failed implants amounting to 16.63%. Group B had 287 implants intact and in the healthy condition which amounted for 89.96% implant success. However, the group had 32 failed implants amounting to 10.04%. **Conclusion:** The study has shown that fair amount of success is observed in patients with pre-existing medical conditions.

KEYWORDS: Diseases, Medically Compromised, Implant, Retrospective

INTRODUCTION

A dental implant has been designated as a surgical element that serves as an anchor between the jaw bone and the dental prosthesis.¹ While in the past the use of removable or fixed partial dentures was customary for the replacement of missing teeth, nowadays with recent developments in implant surgeries, the reintegration of edentulous area by implant has become a routine procedure in the last 10 years.² The key factor before contemplating any dental surgery is the cautious selection of patient in consideration with the medical history and local oral health of the subject.³ In the current era, with a substantial rise in the medical conditions owing to poor and stressful lifestyle, there are a number of systemic conditions that have been reported to complicate implant surgery.⁴

The most basic signs of implant failure include local discomfort, trismus, and pain and localized bleeding. The most basic reason for the failure of an implant failure is

the lack of osseointegration in the initial phase after implant placement.⁵ It is necessary to continuously monitor the signs especially in patients with a pre-existing medical condition and avoid trauma, stress, and hemorrhage during the phase of surgery. Furthermore, it is extremely vital that proper maintenance therapy is initiated thereby maintaining optimal standards of oral hygiene. The present study was conducted to assess and appraise the efficacy of implants in medically compromised patients.

MATERIALS AND METHODS

This retrospective study was comprised of the group of the patients that had undergone an implant surgery in last 3 years. The study was based on dividing the subjects into two groups, namely study group, and control group. The study group consisted of 117 patients that had a history of major medical illness while the control group consisted of 103 patients that did not reveal any history of existing medical conditions. Based on this information,

How to cite this article:

Kachhadia R, Makadia N, Ventakesh C, Mazhar M, Kaur K, Patel M. Assessment and Appraisal of the Efficacy of Implants in Medically Compromised Patients: A Retrospective Study. *Int J Oral Health Med Res* 2017;3(6):62-64.

the efficacy of the implants in medically compromised patients was explored.

Study Group: In the study group, designated as group A, out of 117 patients, 57 were females, and 60 were males. A total of 397 implants were observed.

Control Group: In the control group, designated as group B, out of 103 patients, 48 were females, and 55 were males. A total of 319 implants were observed.

Inclusion Criteria For Patients:

- Patients that underwent a dental implant surgery in last 3 years.
- Patients with comprehensive medical and dental history.

Exclusion Criteria For Patients:

- Patients that were receiving any form of chemotherapy or radiation.
- Patients with partial medical records and that are unreachable for follow-up.

Criteria To Assess The Efficacy of The Implants:

The following criteria were considered to assess the efficacy of the implants:

- The amount of loss of bone structure around the implant. Any implant that has over 1mm of bone loss in the first year and over 0.3mm bone loss every subsequent year were perceived as failures. This was established by clinical examination and radiographs.
- Any signs of infection close to the implant structure leading to instability and displacement of the implant.

RESULTS

Table 1 reveals the distribution of the patients in each group based on the gender. Group A, is the study group and it encompasses 60 male subjects and 57 female subjects. Group B, is the control group and it encompasses 55 male subjects and 48 female subjects. The group A had 397 implants in total, and group B had 319 implants.

Criteria	Group A		Group B	
	Male	Female	Male	Female
Gender	60	57	55	48
Implants	397		319	

Table 1: Distribution of Patients in groups

Table 2 reveals the results of the assessment and appraisal of the efficacy of implants in both the groups. Group A had 331 implants intact and in the healthy condition which amounted for 83.37% implant success. However,

Group	Implant number	Implants intact	Implant failures
Group A	397	331 (83.37%)	66 (16.63%)
Group B	319	287 (89.96%)	32 (10.04%)

Table 2: Assessment and appraisal of the efficacy of implants in both the groups

the group had 66 failed implants amounting to 16.63%. Group B had 287 implants intact and in the healthy

condition which amounted for 89.96% implant success. However, the group had 32 failed implants amounting to 10.04%.

DISCUSSION

With the availability of numerous treatment options for edentulous patients, it is extremely vital to consider every case unique and evaluate the probable outcome of using implant as a treatment option. The placement of an implant in the oral cavity is relatively unchallenging in a healthy individual in contrast with patients with pre-existing medical condition such as diabetes mellitus, bleeding disorders and hypertension.⁶ Even though conventionally, there are numerous contraindications for the placement of implant in patients suffering from major diseases like uncontrolled diabetes, patients receiving chemotherapy and radiation therapy, and immunocompromised patients. Furthermore, localized bone loss and poor oral hygiene have also acted as one of the factors to avoid using implant as a treatment option. However, time and again, these factors acting as contradictions to implant therapy have been challenged. One particular case is a series of case reports wherein implant placement has shown success in patients suffering from pre-existing medical conditions.⁷

In the current study, Table 1 revealed the dispersal of the patients in each group based on the gender. Group A, is the study group and it comprehends 60 male subjects and 57 female subjects. Group B, is the control group and it incorporates 55 male subjects and 48 female subjects. The group A had 397 implants in total, and group B had 319 implants. Table 2 revealed the results of the assessment and appraisal of the efficacy of implants in both the groups. Group A had 331 implants intact and in the healthy condition which amounted for 83.37% implant success. However, the group had 66 failed implants amounting to 16.63%. Group B had 287 implants intact and in the healthy condition which amounted for 89.96% implant success. However, the group had 32 failed implants amounting to 10.04%.

The research study was done on a small scale, and the results seem fairly insignificant. It is vital to carry out further epidemiological studies to comprehend the effect of a pre-existing medical condition on an implant.

CONCLUSION

The substantiation on the consequence of an existing medical condition on the success of a dental implant is dubitable. While the results show slightly fairer results in patients without any existing medical condition as compared to the patients with a pre-existing medical condition, it cannot be established with certainty that systemic health condition hampers the success of dental implant to a large extent. In the near future, with the aid of more diverse retrospective studies, a clear picture of the impact of a pre-existing health condition on the success of implant treatment may be assessed.

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Source of Support: Nil
Conflict of Interest: Nil