International Journal Dental and Medical Sciences Research
Volume 7, Issue 2, Mar - Apr 2025 pp 283-284 www.ijdmsrjournal.com ISSN: 2582-6018

Are Dental Implants a Viable Option for Diabetic Patients? A Review of Outcomes and Considerations

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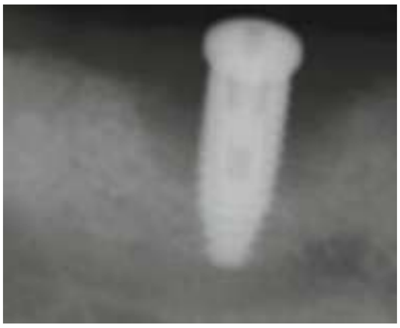
Date of Submission: 10-04-2025 Date of Acceptance: 20-04-2025

ABSTRACT
Dental implants have become a standard solution for tooth replacement due to their high success rates and favorable long-term outcomes. However, diabetes mellitus—particularly poorly controlled—has been considered a relative contraindication due to impaired wound healing and increased susceptibility to infection. This review aims to evaluate whether dental implants are suitable for diabetic patients, examining implant survival rates, peri-implant health, and the role of glycemic control in treatment success.

I. INTRODUCTION

Diabetes mellitus (DM) affects millions worldwide and is known to impact bone metabolism and soft tissue healing. Given that implant osseointegration depends on these physiological processes, concerns have been raised regarding the success of implants in diabetic patients. This article explores current evidence to determine if dental implants are a safe and effective treatment modality in this population.
Pathophysiological Background
Diabetic patients experience microvascular and macrovascular complications that may:
-Delay wound healing
-Increase risk of infection
-Impair bone remodeling and osseointegration



-Hyperglycemia also alters the immune response and collagen production, further complicating surgical outcomes.
-Literature Review and Findings

1. Implant Survival Rates
Several systematic reviews and meta-analyses indicate:
-Well-controlled diabetics (HbA1c <7%) show implant survival rates comparable to non-diabetics (~95–97%).
-Poorly controlled diabetics (HbA1c >8%) have lower survival rates (~85–90%) and higher complication rates.

2. Osseointegration and Healing
-Healing is delayed in uncontrolled DM.
-Use of adjunctive measures like chlorhexidine rinses, systemic antibiotics, and longer healing times improve outcomes.

3. Peri-implantitis Risk
-Increased prevalence of peri-implant mucositis and peri-implantitis in diabetics, particularly with poor glycemic control.

-Emphasis on rigorous oral hygiene and maintenance.

4. Influence of Glycemic Control
-Strong correlation between good glycemic control and implant success.
-HbA1c levels should ideally be below 7.5% prior to surgery.
Clinical Recommendations-
-Preoperative
-Comprehensive medical evaluation and glycemic monitoring.
-Delay implant placement in poorly controlled diabetics.
-Surgical Protocol
-Use of minimally invasive techniques.

-Consideration of staged implant placement if necessary.

5.Postoperative Care
-Close follow-up for wound healing and infection.
-Regular periodontal maintenance.
-Patient Education
-Importance of glycemic control.
-Long-term implant care and hygiene.

II. CONCLUSION

Dental implants can be a successful and predictable option for diabetic patients, especially those with well-controlled glycemia. While risks increase in poorly controlled cases, proper management, surgical planning, and maintenance can mitigate complications. Interdisciplinary care between dental professionals and endocrinologists is key for optimizing outcomes.

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