EFFECTS OF FULL MOUTH EXTRACTION RESTORED BY IMPLANT SUPPORTED OVER DENTURES ON HBA1C & HSCRP IN UNCONTROLLED TYPE 2 DIABETES

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BACKGROUND & GOAL

Diabetes mellitus and periodontitis are multifactorial diseases that are common worldwide. In fact, Diabetes type is now considered an epidemic by the WHO. Uncontrolled diabetes, use of tobacco, and a history of periodontal infections were suggested as relative contraindications for placing dental implant and as risk factors for implant failure. However, control of any comorbidities may be more important than the diagnosis itself. Periodontal infection adversely affects glycemic control. The objective was to investigate individuals with uncontrolled TYPE 2 diabetes and end stage periodontitis- the effect on glycemic control and systemic inflammation of:

1. Full mouth extractions
2. Placement of Straumann dental implants
3. Restoration with overdentures

Material & Methods

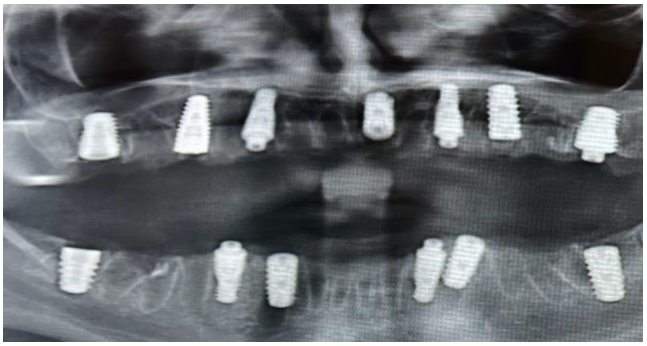
We recruited 340 participants with:

- Type 2 diabetes for > 6 month, HbA1c. 7.5%
- Terminal dentition due to advanced periodontitis
- Significant alveolar bone loss
- Iatrogenic source of inflammation

All dentition was removed and replaced by immediate dentures that were realigned later as needed. Two Straumann implants were placed in the mandibular canine regions and restored with overdentures was to oppose new full maxillary dentures. Bimonthly visits were mandatory which included: CBC targeting HbA1c & high – sensitivity CRP (hsCRP)

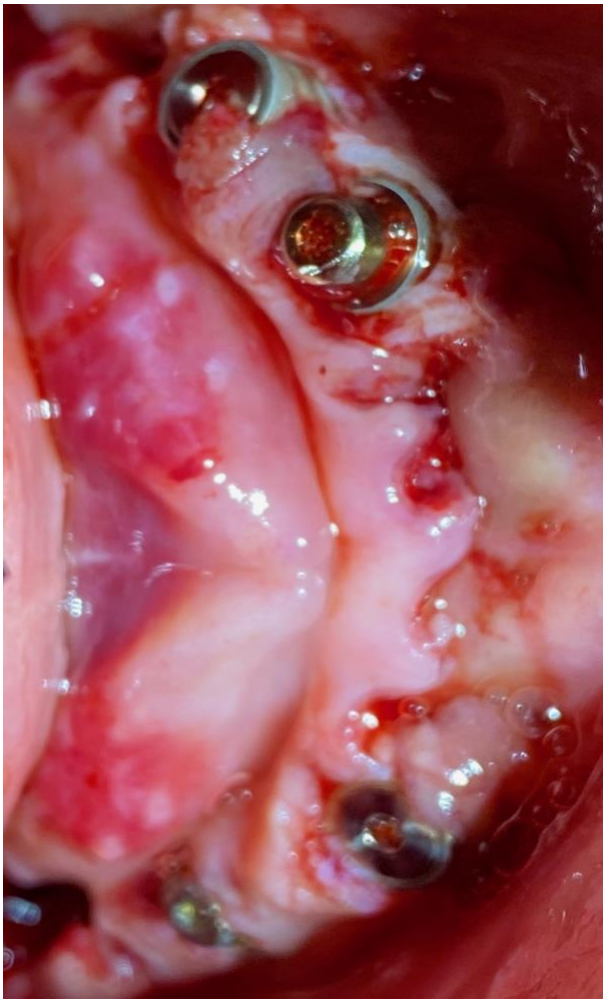




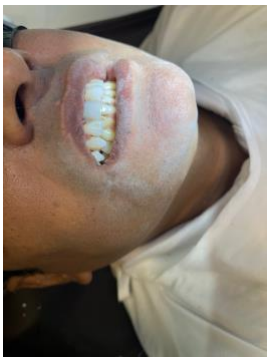


POST PLACEMENT 3 WEEKS





POST PLACEMENT 2 HURS







As hypothesized, HbA1c and hsCRP levels decreased upon full mouth extraction and did not increase to the initial levels for 12 months after implant placement HbA1c decreased statistically significantly by an average of 1.4 (+- 2.2) % [95% cl:2.22, -0.54] from the original mean of 10.2%, whereas the hsCRP decreased significantly of 1.5 (+-5.) mg/dL from the initial 5.3mg/dL and did not reach any statistical significance.

DISCUSSION

The findings from this study demonstrated that, despite prior significant reports it is possible:

1. Achieve 100% Dental Implant success
2. 2. Retain 100% of study subjects in maintenance in individuals with grossly uncontrolled type 2 diabetes mellitus

Even in a 3rd world population with low socioeconomic means and who are unaware of the causes and potential complications of their uncontrolled diabetes and of how to manage their disease. It should borne in mind that diabetes free persons have HbA1c levels of 4 to 6%.

As well of ridding the oral cavity of severe infection seemed to initially decrease the systemic burden of the inflammatory biomarker CRP, despite the population being exposed to frequent infections due to poor oral hygiene and insect born diseases: most commonly Malaria and dengue.

Summary

This study demonstrates that:

1. Mean HBA1c level a) decreased significantly after full mouth extraction and b) did not increase during implant placement and restoration with mandibular overdenture / full maxillary denture
2. Mean hsCRP level a) DECREASED after full mouth extraction and b) did not increase during implant placement and restoration with mandibular overdenture/ full maxillary denture
3. Dental implant therapy is a viable treatment option in people with uncontrolled type 2 diabetes who smoke and have a recent history of terminal periodontitis
4. Quality of life DRAMATICALLY increased upon study treatments (results will be shown on presentation)

Acknowledgements

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