

STUDIES REGARDING THE SUCCESS OF DENTAL IMPLANT ON TYPE II DIABETIC PATIENTS

Sipos Lucian*, Dalai Camelia*, Ciavoi Gabriela*, Ciobanu Cristina*

*University of Oradea, Faculty Medicine and Pharmacy, Piața 1 Decembrie, nr.10, Oradea,
Romania, e-mail:cristina.ciobanu@gmail.com

Abstract

The main aim of the study was to evaluate the success of the dental implant for the type 2 diabetes patients. Dental implants represent a high risk for the diabetic patients due to the reduced osseointegration. However, some research has shown that the risk disappears when diabetes is well controlled. Diabetes can increase the risk of problems at bone or joint levels as the osteoporosis.

Key words: implant, diabet, periodontal diseases, hemoglobin

INTRODUCTION

In the last 30 years, implantology has become a controlled science based on the concept of osseointegration (Helmut R. and Henrichs, 2009), (Hupfauf L, 1996).

The success of implant osseointegration becomes possible by optimizing the dentoparodontal pre-implantar status by appropriate surgical treatment, the use of biomaterials and a favorable implant design (American Diabetes Association, 2011). Treating dentoparodontal affections is required for the prevention of post-implantation complications (Randie R. et al., 2011).

MATERIAL AND METHOD

We conducted a study on 48 patients with type 2 diabetes submitted during the period 1.03.2012-30.04.2015 at the Dental Practice Dental Net, in order to perform a dental implant.

Table 1

Characteristics of the patients

Sex (female/male)	58,33%/41,67%
Age	45,65±6,79 years
Provenance (urban/rural environment)	72,92%/27,08%
Evolution period of diabetes	8,27±3,72 years

Inclusion criteria: type 2 diabetes, without neoplastic disease, age ≤65 years.

Exclusion criteria: without good or very good metabolic control, severe osteoporosis.

The patients had their history taken, oral examination, imaging examinations and laboratory tests made, and their blood pressure measured. An antibio-therapy was administered prophylactically pre and post-implant.

RESULTS AND DISCUSSIONS

Particular importance is being represented by the pathology associated with a major impact on the success of the implant. In our study, 47.92% presented associated diseases, the most common being hypertension (37.50%) and ischemic heart disease (33.33%).

Complications of diabetes were present at 12.50%, especially retinopathy (8.33%), neuropathy and nephropathy (one case only - 2.08%). We specify that all patients were on treatment for the associated diseases.

DEXA examination results revealed the presence of osteoporosis in 2 cases (4.17%), and osteopenia given in 7 cases (14.58%) (-2.5 < T < -1). Diabetes can increase the risk of problems at bone or joint levels as the osteoporosis.

Table 2

Distribution of cases according to the associated pathology

	No.	%
HTA	18	37,50
Ischemic heart disease	16	33,33
DZ complications	6	12,50
Osteopenia	7	14,58
Osteoporosis	2	4,17
Total	33	68,75

Given that diabetic patients generally comply with a healthy lifestyle, smokers accounted for a small proportion compared with the general population (18.75%)

Almost 60% of patients in the study were treated with oral antidiabetics (OADs), and 41.67% were on insulin, of which 25.00% were receiving mixed (insulin + ADO).

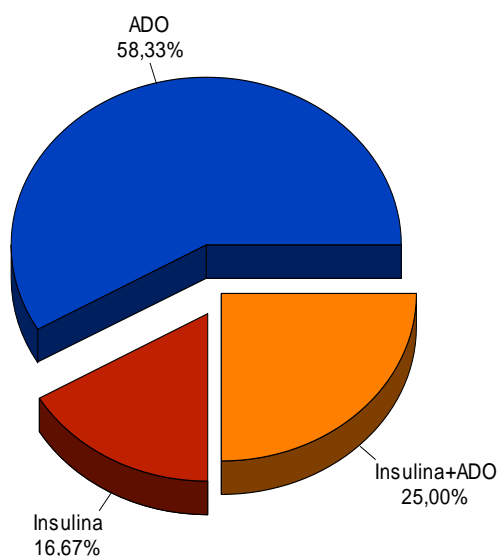


Fig.1. Distribution of cases according to anti-diabetic treatment

Determining HbA1c is a test of evaluation and monitoring long-term glycemic control in patients with diabetes. It is also predictive of the risk of complications in diabetes.

For these reasons, it is necessary that HbA1c should be performed routinely in all patients with diabetes at diagnosis and as part of continuous monitoring.

It is recommended as a therapeutic target for the diabetic patients that HbA1c should be <7%.

All patients had undergone glycosylated hemoglobin. It is considered good and very good control in diabetics with values <8%.

Initially in the good and very good control of the study group was recorded at 66.67% of patients, the remaining patients were directed to the diabetes doctor and they returned only after diabetes was balanced.

Table 3

Distribution of cases according to metabolic control

HbA1c	No.	%
< 7%	10	20,83
7,1-8%	22	45,83
8,1-9%	9	18,75
>9%	7	14,58

Researchers at the University of Texas (USA) studied 23 patients with type 2 diabetes who have made dental implants. After one year, all patients had the implants, they showed no bleeding or no other problems.

The authors of the study concluded that the implants are suitable for type 2 diabetics who keep their blood sugar levels under control.

The cause for partial edentulous was determined; 43.75% with pathological inflammatory lesions (abscess, granuloma, fistulas). Poor oral hygiene was identified in 12.50% of patients and was a temporary contraindication. Mucosal disorders of the teeth and gums were met in 10.42% of patients.

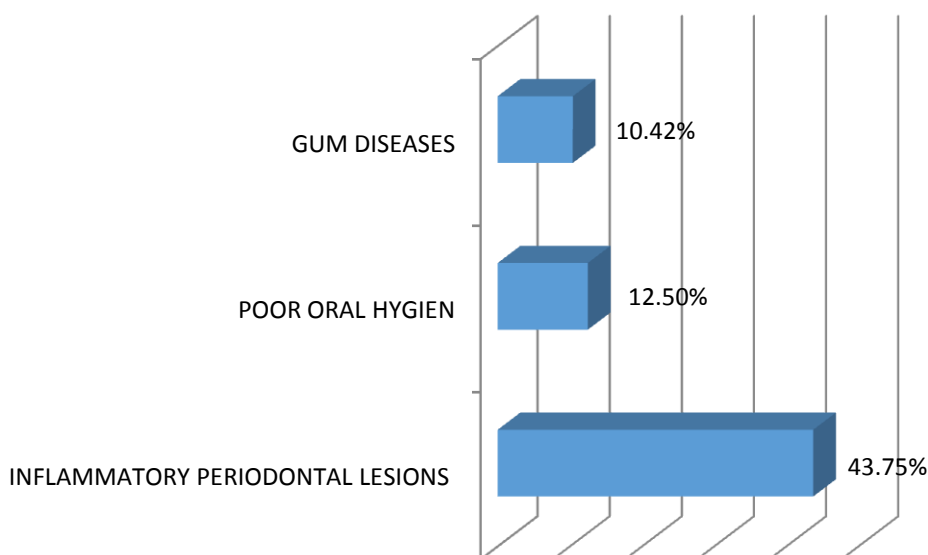


Fig.2 Distribution of cases according to edentulous

Diabetics need special care when it comes to dental health, being exposed to periodontal disease or gum infections such as OSA, which can lead, ultimately, to loss of teeth.

It was found that dental hygiene in diabetics is more than a necessity, people with diabetes are more prone to parodontal infections due to high blood glucose levels.

A study on almost 300 patients with diabetes showed that only 6.7% had good dental health, 68% and 25.3% had periodontal disease gingivitis, periodontal disease risks have been reported in men with diabetes with more than 12 years of smoking.

Table4

Distribution of cases according to the type and place of edentulous		
	No.	%
Jaw	15	31,25
Partially unilateral	11	22,92
Partially bilateral	4	8,33
Total		
Mandible	14	29,17
Partially unilateral	9	18,75
Partially bilateral	5	10,42
Total		
Joint	19	39,58
Unilateral	14	29,17
Bilateral	5	10,42
Total	-	-

Regarding the topography of the edentulous, it was almost equally of the jaw type, mandible (31.25% and 29.17%), and the joint one was present in 39.58%. The partially edentulous unilateral location prevails both in the jaw, and the mandible (22.92% and 18.75%).

CONCLUSIONS

Oral Implantology is part of the therapeutic arsenal of modern dentistry, so dentistry today cannot function without this beautiful art.

In comparison with the treatment without implants, it is a progressive and appropriate method, but does not relieve the patient from surgery and is priced at higher costs

General anesthesia and then the local one revolutionized dentistry. Anesthesia eliminates pain and allows doctors to extend the operating time for the completion of various therapeutic procedures. But the real revolution in dentistry has been made by oral implantology, which overturned conceptions, allowed to order additional poles and brought a new spirit in prosthetics, moreover, has generated a prosthetic.

Moses Strock, Formigini, Linkow, but especially Per Ingvar Branemark and Pasqualini brought a remarkable contribution to the credibility of dental implants.

The osseointegration concept, the guided tissue regeneration, the bone grafting, the sinus-lift interventions helped expand the indications of dental implants and increase the success rate. Dental implants have penetrated almost all branches of dentistry.

REFERENCES

1. American Diabetes Association, 2011, Standards of Medical Care in Diabetes. In Diabetes Care, vol.34, supplement 1
2. Helmut R., Henrichs., 2009, HbA1c -Glycated Hemoglobin and Diabetes Mellitus, 1st edition, Bremen: UNI-MED
3. Hupfauf L, 1996, La protesitotale, Publisher UTET, ISBN88-02-05060-0
4. Randie R. Little, Curt L. Rohlfing, David B. Sacks, 2011, National Glycohemoglobin Standardization Program (NGSP) Steering Committee. Status of Hemoglobin A1c Measurement and Goals for Improvement:From Chaos to Order for Improving Diabetes Care. In Clinical Chemistry, 57:2, pp. 205-214