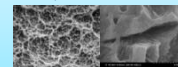


Important Numbers in Implant Dentistry

Two

Two implant surfaces in vivo evaluation, using Osstell ISQ

Iulian Filipov, Davide Farronato



Objectives

Purpose: to evaluate in vivo bone tissue response to calcium incorporated oxidized implants;

Materials and Methods

Prospective comparative study

Control group: AR implants with **RBM** coating

Experimental group: AR implants with **XPEED** coating

Patients selection criteria:

in good health male and female patients
Molar, mandibular and upper maxillary edentation
Extraction made at least 4 months, without bone grafting
42 implants were placed in molar region in one stage surgery

Two implant sizes were used: **4.0 / 11.5 mm** and **4.5 / 10 mm**

Drilling speed was 1000 rpm, with saline irrigation

The insertion torque was between 30 – 50 N/cm

All the patients got 2 tablets of amoxicillin + clavulanic acid 1 hour prior the surgery, 1 tablet after six hours and 2 g / day for the another 4 days

Surgical protocol for 4.0 mm diameter implants:

D1 bone : lance, 2.0, 2.9, 3.3, 3.8

D2 bone : lance, 2.0, 2.9, 3.3, cortical bone
drill no.4- second mark line(3.8)

D3 bone : lance, 2.0, 2.9, 3.3

D4 bone : lance, 2.0, 2.9

Surgical protocol for 4.5 mm diameter implants:

D1 bone : lance, 2.0, 2.9, 3.3, 3.8 , 4.3

D2 bone : lance, 2.0, 2.9, 3.3, cortical bone
drill no.5- second mark line(4.4)

D3 bone : lance, 2.0, 2.9, 3.3

D4 bone : lance, 2.0, 2.9

Stability measurements were done (Osstell ISQ) :

Day 0 (immediately after placement, before placing the healing abutment) 3rd day

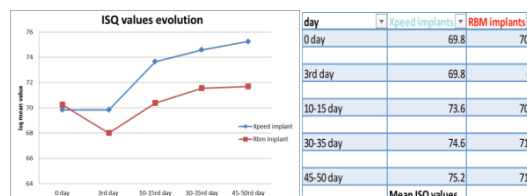
Between 10th – 15th day

Between 30th – 35th day

Between 45th – 50th day



Results



Statistics for research with guide to SPSS

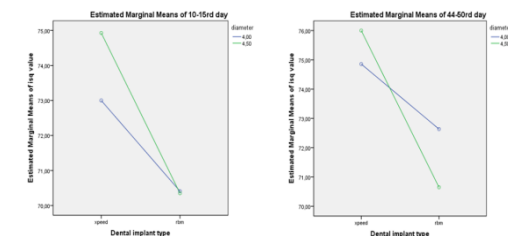
		Dental implant type * Isq maximum value Crosstabulation																Total
		Isq maximum value																
		70.00	70.50	71.00	71.50	72.00	72.50	73.00	73.50	74.00	74.50	75.00	75.50	76.00	76.50	77.00	77.50	
Dental implant type	apexed	Count	0	0	1	1	0	0	0	0	1	1	5	5	5	0	1	21
	% within Dental implant type		.0%	.0%	4.8%	4.8%	.0%	.0%	.0%	.0%	4.8%	4.8%	23.8%	23.8%	.0%	4.8%	4.8%	100.0%
rsm	Count	2	2	1	1	1	2	4	3	1	1	1	0	0	1	1	0	21
	% within Dental implant type		9.5%	9.5%	4.8%	4.8%	4.8%	9.5%	19.0%	14.3%	4.8%	4.8%	.0%	.0%	4.8%	4.8%	.0%	100.0%
Total	Count	2	2	2	2	1	2	4	3	1	2	2	5	5	6	1	1	42
	% within Dental implant type		4.8%	4.8%	4.8%	4.8%	2.4%	4.8%	9.5%	7.1%	2.4%	4.8%	4.8%	11.9%	11.9%	14.3%	2.4%	2.4%

		Directional Measures			
		Value	Asymp. Sig. (2sided)	Asymp. Sig. (1sided)	Exact Sig. (2sided)
Nominal by Nominal	Lambda	.380	.079	.344	.087
	Asymetric Lambda	.380	.079	.344	.087
	Isq maximum value	.380	.079	.344	.087
	Goodman and Kruskal tau	.380	.079	.344	.087

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on chi-square approximation.

What gives relevance to this statistics is the value of λ . For a highly strong relevance $0.7 < \lambda < 0.9$ according to Argyrous 2005

Comparison isq values in correlation to implant diameter



Conclusions

The fast osseointegration of test Ca implants may have clinical implication for immediate and early loading and may be the first choice implant in compromised bone. Xpeed surface provides a faster osseointegration than RBM in molar region.

References

- Effects of calcium ion incorporation on bone healing of Ti6Al4V alloy implants in rabbit tibiae (Jin-Woo Park, Kwang-Bum Park, Jo-Young Suh Biomaterials. 2007 Aug;28(22):3306-13. Epub 2007 Apr 10)
- Predicting osseointegration by means of implant primary stability. Nedir R, Bischof M, Szmukler-Moncler S, Bernard JP, Samson