

Scientific summary

Zirconia Dental Implants: A Clinical Radiographic, and Microbiologic Evaluation up to 3 Years

Brüll F, van Winkelhoff AJ, Cune MS. Zirconia dental implants: a clinical, radiographic, and microbiologic evaluation up to 3 years. *Int J Oral Maxillofac Implants*. 2014 Jul-Aug;29(4):914-20. Doi: 10.11607/jomi.3293

Scope

The objective of this retrospective study was to evaluate the clinical performance of Patent™ (ZV-3) implant system over 3 years. 74 consecutively treated partially edentulous patients received 121 implants. Implants were placed by two experienced surgeons in practices focused on implant treatment. Minimum implant dimensions were \varnothing 3.5 mm and 8 mm length. If there was enough bone volume to place an implant with this dimension or larger, the patient was treated. No other exclusion criteria were applied. **Implants were placed immediately in extraction sockets or in healed sites.**

Implants were loaded after a healing time. Probing pocket depth (PPD) and bleeding on probing (BOP) were assessed at six sites around all teeth and implants. Marginal bone levels were assessed with radiographs.

Lengths of implant placed		
Length	No. Placed	Percentage
8 mm	1	0.8%
9 mm	5	4.1%
10 mm	6	5.0%
11 mm	11	9.1%
12 mm	20	16.5%
13 mm	43	35.5%
14 mm	12	9.9%
15 mm	11	9.1%
Others	12	9.9%
Total	121	100.0%

Mean marginal bone loss since implant placement (n = 118 implants in 71 patients)

	mean loss (SD) (mm)	Range
Overall	0.0 (0.5)	1.2 to - 2.0
1 y	-0.2 (0.8)	0.9 to - 0.9
2 y	0.0 (0.3)	0.9 to - 0.9
3 y	0.13 (0.6)	1.2 to - 0.8

Diameters of implants placed

Diameter	No. Placed
< 4.0 mm	19
4.5 - 5.0 mm	68
> 5.0 mm	34
Total	121

Key take aways

- **Implant survival rate was high, 96.5%.**
- **One implant fracture was reported (0.8%).**
- **Marginal bone levels were stable and, in some cases, even increased.**
- **BOP was significantly less around implants than around teeth.**
- **PPD was significantly lower around implants than around teeth.**
- **The soft tissue findings compare favorably to clinical studies on titanium implants.**
- **No fractures or loss of the glass fiber post were reported.**

“When applied in partially edentulous situations by experienced surgeons in routine clinical practice, Y-TZP implants can achieve a 3-year implant survival rate similar to that of titanium implants, with healthy and stable soft and hard tissue conditions.” Brüll et al.