# P470

CLINICAL RESEARCH
PROSTHETICS

# Early final prosthesis delivery supports healthy soft -tissue response comparable to later delivery schedules: real -world 1-year data with gradually anodized dental implants

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## CLINICAL RELEVANCE

- Shortening the time to definitive restoration is an important treatment goal, as earlier tooth replacement may improve patient satisfaction and esthetic outcomes.
- Advances in implant surface may support an earlier delivery of fixed prostheses while maintaining favorable implant survival and peri-implant soft tissue health, comparable to late and delayed protocols, helping clinicians balance treatment efficiency with predictable clinical outcomes.

## BACKGROUND AND AIM

The timing of final prosthesis delivery (FPD) is influenced by numerous factors, including whether bone augmentation was performed, implant site location, patient health, esthetic expectations, and functional demands. In cases managed with immediate provisionalization, the urgency for definitive restoration may be reduced because a fixed restoration is already in place during healing. Consequently, the timing of definitive restoration is highly individualized. The gradually anodized ultra-hydrophilic TiUltra surface was developed[1] to enhance osseointegration and soft-tissue health, supporting predictable clinical and esthetic outcomes, while improving peri-implant tissue stability.

This interim analysis aims to compare implant survival and soft-tissue outcomes associated with different timings of FPD in gradually anodized implants.

## METHODS AND MATERIALS

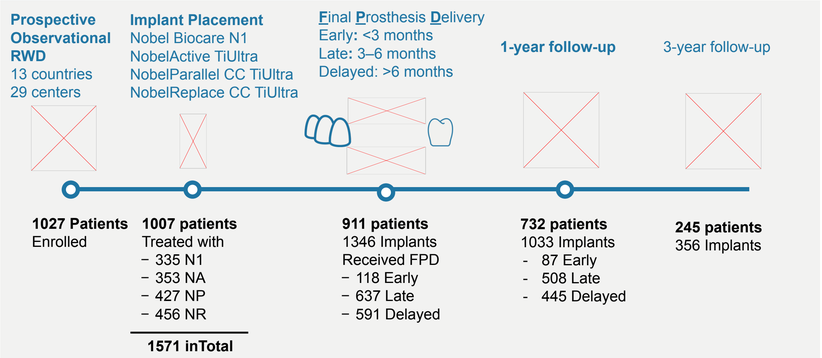


**Figure 1.** Study flow-chart. Data according to extraction on 10 August 2026 with a maximum follow-up of 4.4 years.

## RESULTS

- Mean patient age was 53.2 ± 11.71 years (range 18-71), with females comprising 54.9% of the population and nearly one-quarter of the cohort (24.1%) affected by comorbidities.
- In this real-word data collection, the timing of final prosthesis delivery (FPD) was determined by the treating clinician based on a range of patient- and treatment-related factors (Table 1). These included the need for simultaneous bone regeneration procedures, patient's overall health status, and the possibility of immediate provisionalization that could defer the need for definitive prosthesis while providing function and esthetics.
- Of the 1571 implants placed, 39 failed (2.5%), with majority (64%) occurring prior to FPD, due to loss of integration.
- Among implants that received FPD, at the time of reporting, survival was high regardless of the timing protocol (Table 1). By the 1-year follow-up, the overall failure rate among restored implants was 1.1%, with > 95% of sites having undetectable or minimal plaque (Fig. 2).

**Table 1 FPD-stratified characteristics & outcome**

| Final Prosthesis Delivery: | | Early n=118 | Late n=637 | Delayed n=591 |
|---|---|---|---|---|
| Extraction site | | 29.7% | 32.8% | 31.6% |
| Simultaneous GBR | | 13.6% | 25.6% | 27.6% |
| Vertical position | Equicrestal | 30.5% | 32.5% | 41.5% |
| | Subcrestal | 67.8% | 64.5% | 55.7% |
| | Supracrestal | 1.7% | 2.8% | 2.9% |
| Immediate provisionalization | | 23.7% | 14.4% | 21.3% |
| Mean time to FDP ± StDv (months) | | 2.0 ± 1.0 | 4.5 ± 0.8 | 12.1 ± 6.9 |
| Anterior region | | 19.5% | 21.9% | 26.9% |
| Implant survival | | 98.3% | 98.4% | 99.7% |

*Data shown based on the most recent data extraction as of 10 Aug 2026.*

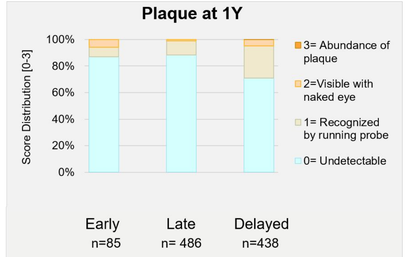


**Figure 2.** Plaque index score distribution at 1-year post-FPD stratified by FPD-timing.

- Paired gingival and bleeding indices between FPD and 1Y revealed that >97% of sites displayed healthy soft tissues with similar score distribution. Moderate scores accounted for <3% of across groups, and no severe symptoms were reported at any site.

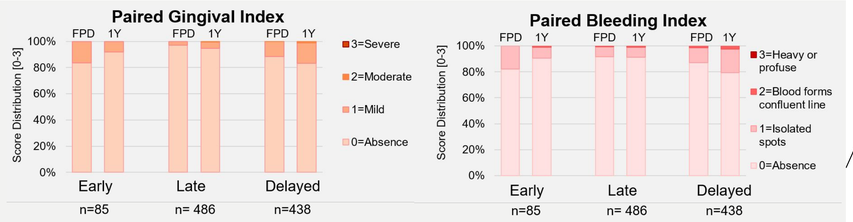


**Figure 3.** Gingival (left) and modified Bleeding (right) indices with scores paired between FPD and 1-year follow-up, stratified by FPD timing.

## CLINICAL CASE

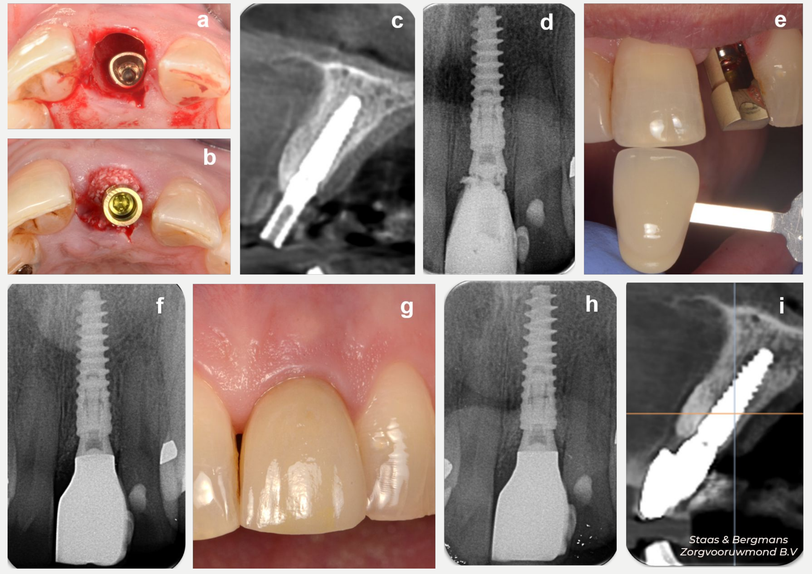


**Figure 4.** A 57-year-old non-smoker male patient presented with failing root canal. He was treated with NobelBiocare N1 implant (4.0 x 15mm; a) connected to definitive base (Xeal) and received simultaneous bone regeneration with xenogain collagen block (b). CBCT was taken (c) and the implant was immediately provisionalized (d). Three months later, definitive prosthesis (Procera) was planned (e) and 0.9 months later it was delivered (f). Clinical photograph was taken 4.5 months post-FPD (g). Note bone stability at the 3-year follow-up (h,i).

## CONCLUSION

**The interim analysis of this non-interventional observational study showed that clinician-selected early delivery of definitive prostheses restoring gradually-anodized implants achieved outcomes comparable to late and delayed protocols while maintaining favorable implant survival and peri-implant soft tissue health.**

## REFERENCES

1. Milleret V, Lienemann PS, Gasser A, Bauer S, Ehrbar M, Wennerberg A. Rational design and in vitro characterization of novel dental implant and abutment surfaces for balancing clinical and biological needs. Clin Implant Dent Relat Res. 2019 Mar;21 Suppl 1:15-24 This T-192 study is sponsored by Nobel Biocare.

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**Discuss this work with the author**

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