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A 3-year report from a multicentre randomised controlled trial: immediately versus early loaded implants in partially edentulous patients

Key words *dental implants, early loading, follow-up, immediate loading, partial edentulism*

Purpose: To compare implant failure, prosthesis failure and radiographic bone level changes of immediate non-occlusal loading versus early loading in partially edentulous patients 3 years after implant placement.

Materials and methods: A total of 80 patients with partial edentulism were selected for a two implant-supported immediate restoration and randomised to immediate loading (test group) or early loading (control group) after 2 months, 40 patients for each group. To be included in the study, implants had to be inserted with a torque ≥ 30 Ncm. In the test group, implants were provided with non-occluding temporary restorations. In the control group, healing abutments were attached and implants were left to heal nonsubmerged. Definitive prostheses were delivered 2 months after surgery with full occlusal contacts. The outcome variables were implant failure, prosthesis failure, complications and radiographic bone level changes at implants 3 years after loading. The assessor was blinded to group assignment.

Results: Eighty-one implants were immediately loaded and 80 were early loaded. Two immediately loaded patients and 1 early loaded patient dropped out at 3 years. No implant failed. Two complications occurred in the immediate loading group and 1 in the early loading group. There were no significant differences in bone levels changes at 36 months between the two groups ($P = 0.67$; difference 0.2 mm; 95% CI -0.23, 0.63). Immediately loaded implants lost 0.90 mm (95% CI 0.63, 1.17) and early loaded implants 1.10 mm (95% CI 0.81, 1.39).

Conclusion: If adequate primary stability was achieved, no statistically significant difference in failure rates, complications or bone level changes between implants loaded immediately or early were observed 3 years after placement in partially edentulous patients.