

IMMEDIATE FIXED REHABILITATION OF SEVERE MAXILLARY ATROPHY USING TILTED TRANS-SINUS IMPLANTS WITH OR WITHOUT SINUS BONE GRAFTING: FOUR-YEAR RESULTS FROM A RANDOMIZED CONTROLLED TRIAL



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PURPOSE. The aim of this trial was to compare the clinical outcomes of tilted trans-sinus implants with or without simultaneous sinus lift for immediate full arch rehabilitation of severe maxillary atrophy.

MATERIALS AND METHODS. Thirty-two subjects were enrolled in this trial for an immediately loaded fixed restoration supported by four or six implants. They were randomized to receive at least one trans-sinus implant without simultaneous bone grafting (group 1, n = 16) or one trans-sinus implant with sinus lift bone grafting (group 2, n = 16). Primary outcomes considered were prosthesis and implant failures, while secondary outcomes were complications and peri-implant marginal bone level changes.

RESULTS. Forty-one trans-sinus implants (23 trans-sinus implants without simultaneous bone grafting and 18 trans-sinus implants with sinus lift), 23 conventional tilted implants and 84 axial implants were inserted. No drops-out occurred. Four years after loading, no prosthesis was lost. One trans-sinus implant failed in the sinus lift group, but there was no statistically significant difference in implant failure between the two groups at patient level (0.0% vs. 6.3%, difference 6.3%; 95% CI -4.7, 17.3; P = 0.99). No conventional tilted implants or conventional straight implants were lost. Complications occurred in nine patients in the group without bone grafting *versus* ten patients in the sinus lift group. No statistically significant differences were found in this regard either between groups (patient level, 9/16 vs. 10/16, 56.2% vs. 62.5%, difference 6.3%; 95% CI: -12.9, 25.8; P = 0.99) or the four different centres (50% vs. 62.5% vs. 50% vs. 75%, P = 0.99). Similarly, there were no significant differences in peri-implant marginal bone level changes between either groups (P = 0.67; difference 0.25 mm; 95% CI -0.23, 0.63) or centres (P = 0.695). Considering only trans-sinus implants, no statistically significant difference between the two treatment strategies was observed in peri-implant bone loss (P = 0.55).

CONCLUSIONS. No statistically or clinically significant differences were observed in outcomes between tilted trans-sinus implants supporting cross-arch immediately loaded fixed prostheses in atrophic maxillae placed either without simultaneous bone-grafting or with sinus lift four years after loading. However, longer follow-ups on a larger sample are needed.

CONFLICT OF INTEREST STATEMENT

Tommaso Grandi serves as a consultant for JDentalCare. This study was completely self-financed, and no funding was either sought or obtained, not even in the form of free materials.