KEY WORDS
Complication, Dental implant, Conical connection,
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DENTAL IMPLANTS WITH CONICAL *VERSUS* INTERNAL HEX CONNECTIONS: A 5-YEAR REPORT FROM A MULTICENTRE RANDOMIZED CONTROLLED TRIAL

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PURPOSE. To compare implant failure and complication rates and radiographic bone level changes at dental implants with conical *versus* internal hex connections, 5 years after loading.

MATERIALS AND METHODS. A total of 90 patients with partial edentulism were selected and randomly allocated to two equal groups (n = 45) to be fitted with implants with either conical or internal hex connection at three dental surgeries. Patients were followed up for a period of 5 years. Outcomes considered were implant failures, any complications, and marginal bone level changes.

RESULTS. Three patients (6.7%) from the conical connection group and one patient (2.2%) from the internal hex group dropped out. One patient from the conical connection group lost one implant (1.5%) *versus* two implants (2.6%) in one patient from the internal hex group. There were no statistically significant differences in implant failures between the two groups (2.4% *vs.* 2.3% difference 0.1%; 95% CI: -0.9; 5.1; P = 0.584). Four patients from the conical connection group experienced four complications *versus* five patients with five complications in the internal hex group (9.5% *vs.* 11.4%, difference 1.9%; 95% CI: -0.7; 4.5; P = 0.781).
Five years after loading, patients in the conical connection group had lost an average of 1.41±0.94 mm of peri-implant bone *versus* 1.38±0.89 mm in the internal hex group, the difference not being statistically significant (difference: 0.03 mm; 95% CI -0.87; 0.96; P = 0.745). Both treatment groups had lost statistically significant marginal peri-implant bone at 5 years post-loading: P = 0.0001 for both conical and internal hex groups.

CONCLUSIONS. No statistically or clinically significant differences were observed in outcomes between implants with conical and internal hex connections 5 years after loading. Hence, clinicians are free to decide which type of connection to use, according to their preferences.

CONFLICT OF INTEREST STATEMENT. Tommaso Grandi serves as consultant for J Dental Care, Modena, Italy. This study was completely self-financed and no funding was sought or obtained, not even in the form of free material.