Comparison of the screw loosening in three implants systems

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Abstract

Background and Aim: Along with variety of implant systems, some manufacturers produced similar components for the main implant systems and claimed them to be completely compatible with the main systems which require more studies in this regard. Objective the aim of present study was to compare screw loosening in ITI and its compatible systems.

Materials and Methods: In this in vitro trial, 10 implants of ITI original and 10 abutments of the Cowell and 10 Euroteknika systems were connected to ITI implants. abutment screw was tightened by 35 N/CM torque. After 5 minutes, the initial RTV of the specimens were measured. The connections were subjected to the cyclic loading (load of 75 N and 1 Hz) for 500000 cycles. Postcyclic RTV were measured by the torque wrench and the data were evaluated by ANOVA analyzing test.

Results: In ITI abutments; RTV was 30.7 ± 2.26 and 23/0 N/CM before and after cyclic loading. In Euroteknika abutments, RTV was 29.1 ± 2.6 and 21/0 N/CM before and after cyclic loading. In Cowell system; RTV was decreased from 29.2 ± 3.61 to $21.641/2\pm$ N/CM before and after cyclic loading. No significant differences were found regarding post-cyclic RTV in different abutment/implant connections.

Conclusion: It seems, Under Similar Condition, the abutment brands of ITI, Euroteknika and Cowell connected to ITI implant system did not significantly affected screw loosening values following cyclic loading.

Key words: Dental implant,torque,dental implant loading

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