



Dr.
Marc
Hinze

IMPLANTATPRAXIS
& ÄSTHETISCHE ZAHNHEILKUNDE

PUBLIKATIONEN

»Biomechanical and histological behavior of zirconia implants: an experiment in the rat.«, Kohal R., Wolkewitz M., Hinze M., Han JS., Bächle M., Butz F. Clin Oral Implants Res 2009; 20(4): 333-339.

ABSTRACT

OBJECTIVE:

This study aimed at evaluating the integration of zirconia implants in a rat femur model.

MATERIAL AND METHODS:

Zirconia implants with two distinct surface topographies were compared with titanium implants with similar topographies. Titanium and zirconia implants were placed into the femurs of 42 male Sprague-Dawley rats. Four groups of implants were utilized: machined zirconia implants, zirconia implants with a rough surface, machined titanium implants, and titanium implants with an electrochemically roughened surface. After a healing period of 28 days, the load-bearing capacity between the bone and the implant surface was evaluated by a push-in test. Additionally, after a healing period of 14 and 28 days, respectively, bone tissue specimens containing the implants were processed and histologically analyzed.

RESULTS:

The mean mineralized bone-to-implant contact showed the highest values after 14 and 28 days for the rough surfaces (titanium: 36%/45%; zirconia: 45%/59%). Also, the push-in test showed higher values for the textured implant surfaces, with no statistical significance between titanium (34 N) and zirconia (45.8 N).

CONCLUSIONS:

Within the limits of the animal investigation presented, it was concluded that all tested zirconia and titanium implant surfaces were biocompatible and osseointegrating. The presented surface modification of zirconia implants showed no difference regarding the histological and biomechanical results compared with an established electrochemically modified titanium implant surface.

Für weitere Informationen zu dieser Publikation kontaktieren Sie
uns bitte unter den u. g. Kontaktdaten.

Die unautorisierte Verwendung dieses Textes ist nicht gestattet;
alle Rechte vorbehalten.

Dr. Marc Hinze

Spezialist für Implantologie & Parodontologie

Bahnhofstraße 17 82166 Gräfelfing Tel.: +49 (0)89 851076 Fax: +49 (0)89 8543559
info@marc-hinze.de www.marc-hinze.de