

Die „besondere Publikation“

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Liebe Leserinnen und Leser,

„Wissenschaftliche Studien gibt es wie Sand am Meer!“ Diese Aussage mag zwar zutreffen, hilft in der täglichen Arbeit in der Zahnarztpraxis jedoch nicht unbedingt weiter. So wollen wir Ihnen – beginnend mit dieser Ausgabe

– mehrere Literaturangaben, auf die wir bei unseren Recherchen gestoßen sind, in Abstractform zugänglich machen. „Kurz und knapp und doch praxisrelevant – dies ist unser Anliegen!“

Wir wünschen Ihnen viel Spaß beim Lesen und Nutzen für Ihre Tätigkeit.

Laserzahnheilkunde

Carbon dioxide laser and hydrogen peroxide conditioning in the treatment of periimplantitis: an experimental study in the dog

Various methods have been applied for the treatment of periimplantitis lesions. It has been reported that the procedures used have been effective in eliminating the inflammatory lesion but that re-osseointegration to the once-contaminated implant surface has been difficult or impossible to achieve. **PURPOSE:** The aim of this study was to examine the use of carbon dioxide (CO₂) laser in combination with hydrogen peroxide in the treatment of experimentally induced Periimplantitis lesions. **MATERIALS AND METHODS:** Three dental implants (ITI Dental Implant System, Straumann AG, Waldenburg, Switzerland) were the edentulous mandible of four beagle dogs. Implants with a turned surface and implants with a sand-blasted large-grit acid-etched (SLA) surface (SLA, Straumann AG, Waldenburg, Switzerland) were used. Experimental periimplantitis was induced during 3 months. Five weeks later each animal received tablets of amoxicillin and metronidazole for a period of 17 days. Three days after the start of the antibiotic treatment, full-thickness flaps were elevated, and the granulation tissue in the bone craters was removed. In the two anterior implant sites in both sides of the mandible, a combination of CO₂ laser therapy and application of a water solution of hydrogen peroxide was used. The implant in the posterior site of each quadrant was cleaned with cotton pellets soaked in saline. Biopsy specimens were obtained 6 months later. **RESULTS:** The amount of re-osseointegration was 21 % and 82 % at laser-treated turned-surface implants and SLA implants, respectively, and 22 % and 84 % at saline-treated turned-surface implants and SLA implants, respectively. **CONCLUSIONS:** The present study demonstrated the following: (1) a combination of systemic antibiotics and local curettage and debridement resulted in the resolution of experimentally induced periimplantitis lesions; (2) at implants with a turned surface, a small amount of re-osseointegration was observed at the base of the bone defects whereas a considerable amount of re-osseointegration occurred at implants with an SLA surface; and (3) the use of CO₂ laser and hydrogen peroxide during surgical therapy had no apparent effect on bone formation and re-osseointegration.

Quelle: *Clin Implant Dent Relat Res* 2004;6(4):230–8;
AMQ Weekly Results: *Laser in Dentistry*

Treatment of periimplantitis with laser or ultrasound. A review of the literature.

In addition to conventional treatment modalities (mechanical and chemical), the use of different lasers has been increasingly proposed for the treatment of peri-implantitis. Results from both controlled clinical and basic studies have pointed to the high potential of an Er:YAG laser. Its excellent ability to effectively ablate dental calculus without producing major thermal side-effects to adjacent tissue has been demonstrated in numerous studies. Recently, a new ultrasonic device has been used for the treatment of periodontal and peri-implantitis infections. Preliminary clinical data indicate that treatment with both treatment procedures may positively influence peri-implant healing. The aim of the present review paper is to evaluate, based on the available evidence, the use of an Er:YAG laser and a newly introduced ultrasonic device for treatment of peri-implantitis in comparison to a conventional treatment approach.

Quelle: *SO – Schweiz Monatsschr Zahnmed* 2004;114(12):1228–35;
AMQ Weekly Results: *Laser in Dentistry*

Diode laser-activated bleaching.

This study describes a preclinical investigation with laser-activated bleaching agent for discolored teeth. Bleaching techniques involve a broad-spectrum approach utilizing hydrogen peroxide (3–38 %) with or without heat or laser, carbamide peroxide (10–30 %), or a mixture of sodium perborate and hydrogen peroxide. Extracted human maxillary central incisors were selected. In the bleaching experiment, 38 % hydrogen peroxide was used. Two different