

LASER ASSISTED NON VITAL TOOTH WHITENING IN ONE STEP: COMPARISON OF TWO WAVELENGTHS

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AIM OF THE STUDY

To evaluate the bleaching efficiency of two different wavelengths (diode 808nm; Nd-YAG 1064 nm) on non vital dyschromic teeth (single session) .

DISCUSSION

Bleaching of non vital teeth demonstrated previously satisfactory clinical results. (Berron Gonzales et al.,1991) and has become a routine treatment (Bogaerts P., 1993). Moreover it is conservative of tooth tissue and may delay the need for more invasive veneers and crowns (Barlett D., 2001)

The ADA Council on Scientific Affairs outlines the current status of tooth bleaching and the use of lasers in that process. The Council also provides recommendations on laser-assisted bleaching (J. Am. Dent. Assoc.1999).

Bleaching techniques achieved significant advances with the use of coherent or incoherent radiation sources to activate the bleaching agents. (Wetter NU et al., 2004).

Currently, the laser has been proven the most valuable energy source for power bleaching with simple and short application in the dental office. (Dostalova T. et al., 2004).

Dentists performing an in-office bleaching technique with the use of an additional light source to accelerate tooth whitening should consider the specific bleaching agent being used. (Luk et al., 2004).

CONCLUSION

Whatever the wavelength used, an appreciable aesthetic result is obtained; result depends highly on the relationship gel color/wavelength (chromophore).

Nd-YAG laser requires the lowest fluence as well as the lowest treatment duration.



CLINICAL REPORT

Diodo Lasemar 800 (Eufoton-Italy) – 808nm

Preoperative view



Final result



After one-step



- Power: 4 W.
- Mode: CW.
- Handpiece: Specific for bleaching.
- Theoretical Fluence: 102 J/cm².
- Laser working time: 40 sec.
- Theoretical number of photons: 163x10²¹.

Handpiece



The gel application



Nd:YAG laser Fidelis Plus™ (Fotona, Slovenia)

Pred-treatment view



Post-operative view



one-step result



- Power: 3 W.
- Frequency: 70 Hz.
- Fiber diameter : 300µm.
- Handpiece: contact mode.
- Theoretical Fluence: 61,21 J/cm².
- Pulses number: 1400.
- Laser working time: 20 sec.
- Theoretical number of fotons: 107x10¹⁹.

Handpiece



Gel application

