

TouchWhite™ Er:YAG Laser-Assisted Tooth Whitening

Jugoslav Jovanovic

General Dentistry Clinic "Dr. Jovanovic", Hasana Husaidica 5, Kozarac, Republika Srpska, BiH

ABSTRACT

Er:YAG lasers are very popular in dentistry, especially because of their efficacy and safety in removing hard dental tissue. With a wavelength that has the highest absorption in water among all lasers, Er:YAG lasers are the ideal candidate for laser-assisted teeth whitening procedures, since the increased temperature from the absorption of laser light in the bleaching gel is the main bleaching mechanism.

The purpose of this study was to evaluate the ability of Er:YAG lasers to perform the TouchWhite™ tooth whitening procedure with different bleaching gels (Smartbleach gel-HTL, Herzele, Belgium; Whiteness XP Maxx, FGM Brazil) and to compare the results with other laser-assisted bleaching procedures.

Vital teeth in patients were treated with an Er:YAG laser (Fidelis from Fotona), using a collimated handpiece with a 5 mm spot size, Fotona bleaching gel (35% H₂O₂), Smartbleach gel (35% H₂O₂) and Whiteness XP Maxx (35% H₂O₂). Laser parameter settings were: fluence: 0.3 J/cm², pulse duration: 1000 μs (VLP), frequency: 10 Hz. Depending on the intensity of discoloration, patients were treated up to three times in one session.

None of the treated patients showed any pain or discomfort during treatment. All treated patients were satisfied with the achieved bleaching effect. The results suggest that Er:YAG lasers can be safe and effective for teeth whitening for vital and non-vital tooth discoloration with different aqueous (water-based) bleaching gels. Adding another indication for use (teeth whitening) in the indication range of these lasers would be beneficial to dentists and aestheticians, as they would not have to buy a special additional laser for teeth whitening only.

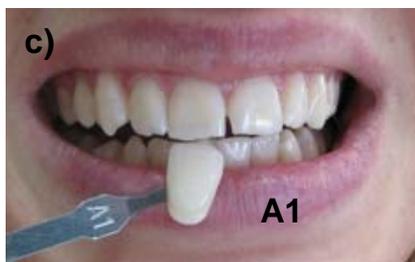
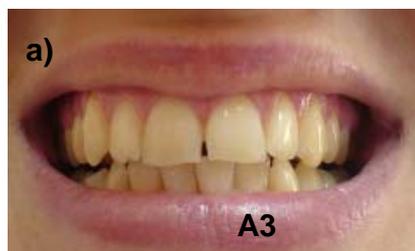


Fig. 1: Before (a), during (b) and after (c) the Er:YAG laser-assisted whitening treatment