EFFECT OF LOW INTENSITY LASER ACTIVATED VITAL BLEACHING ON PULPAL RESPONSE AND POSTOPERATIVE SENSITIVITY

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Abstract

Purpose: To evaluate the effect of low intensity diode laser (980nm GaAlAs) to activate vital teeth bleaching by 15% carbamide peroxide on pulpal response and postoperative sensitivity clinically and radiographically using digora soft ware. **Materials and methods:** Fourty patients from both sexes diagnosed as having discolored vital teeth ranging in age from 25 to 30 years old. Maxillary and mandibular anterior teeth of each patient were selected to be intact, vital, caries free and unrestored with no history of spontaneous pain. Radiographic image of the selected teeth shows normal appearance of roots, periodontal attachment and supporting alveolar bone.The selected patients were divided into two groups. The group I included 20 patients, treated with 15% carbamide peroxide bleaching agent without diode laser irradiation. The group II included 20 patients, treated with 15% carbamide peroxide bleaching agent with diode laser irradiation. Clinical measurement including pulp sensitivity test readings was made before and after treatment using electric pulp tester.Radiographic Density measurements were done before and after treatment using digora software system. **Results:** the results demonstrated that pulpal tissue density means of group II (with diode laser irradiation) were higher than those of group I (without diode laser irradiation). **Conclusion:** the 980 nm diode laser had a positive biomodulatory effect on the pulpal tissue to subside the post-bleaching sensitivity.

Key Words: teeth bleaching, diode laser, pulp density, dentinal hypersensitivity, digora

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Introduction

The desires to have whiter teeth and the bleaching technique had been documented since the mid-nineteenth century. Patients' awareness of options available for changing the color of natural dentition has created an increase in public demand. Bleaching corrects and/or improves the color of teeth, and is also at least expensive esthetic treatment option. The indications are acquired superficial stains, penetration and absorbed stains, age related stains, patients who desire conservative treatment to improve appearance, color change related to pulp trauma and necrosis, and interproximal discolorations. [1,2]

The current techniques involve a broad spectrum approach utilizing hydrogen peroxide (3-38%) with or without heat or laser; carbamide peroxide (10-45%) or a mixture of sodium perborate and hydrogen peroxide. [3]

The methods can be used in-office or at-home. Severely discolored teeth or difficult bleaching cases were treated initially in the office, followed by bleaching at home. Some patients cannot complete the home bleaching process for various reasons, such as the time required, discomfort or irritation from wearing the trays or the unpleasant taste, and gingival or stomach irritation from the bleaching gel. For such patients, power bleaching or in-office bleaching produces the whitening results quickly, without the long term commitment of wearing trays. To have this procedure performed, the patient visits the dentist only once. [4]