

Clinical and scanning electron microscopy evaluation of the Er, Cr: YSG Glaser therapy for treating dentine hypersensitivity

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Dentine hypersensitivity (DH) is a common complaint originating from exposure of the dentine and characterized by an acute, non-spontaneous, short or long lasting pain that appears after thermal, chemical, mechanical or osmotic stimuli in a specific location, which cannot be ascribed to any other dental pathology. Today various treatment methods are discussed for a possible use in DH. The effectiveness of these methods is directly associated with their capacity to support the sealing of dentinal tubules to prevent dentinal fluid flow or blocking nerve activity.

The use of lasers opens a new dimension in the treatment of DH. Several different theories have been suggested to explain the effect of laser irradiation on dentine, that involve sealing of dentinal tubules by melting and re-crystallization of dentine, evaporation of the dentinal fluid, analgesic effect related to depressed nerve transmission or obliterating the dentinal tubules with tertiary dentine production. High-power lasers such as carbon dioxide (CO₂), neodymium: yttrium-aluminum-garnet (Nd:YAG), erbium, yttrium-aluminum-garnet: (Er:YAG), surgical diode lasers and recently erbium chromium: yttrium-scandium-gallium-garnet (Er, Cr:YSGG) are used in dentistry. Therefore, the aim of this presentation was to evaluate and compare the desensitizing and tubule occlusion effects of Er, Cr:YSGG laser with different power settings.

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