

Er:YAG Laser

and desensitizing effects on dentine and neck of tooth

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_Aim

The aim of this clinical study is to compare the desensitizing effects on dentin and tooth neck of Dentin protector (Ivoclar Vivadent, Ellwangen, Germany), Duraphat (Colgate, Hamburg, Germany) and Er:YAG Laser (KEY III, KaVo, Biberach, Germany). In private dental offices the dentin hypersensitivity since years is a common cause of discomfort in patients. Around 7% of the patients in the dental office of the author shows this problem. Reasons for dentin exposure are gingival recession following periodontal disease or periodontal therapy and trauma from tooth brushing (Schwarz 2002). A successful reduction of hypersensitivity over long period was not reported at all in literature. Dentine hypersensitivity is a common painful condition about which relatively little is known. A review of the literature reveals that most research has been concerned with the clinical assessment of therapeutic agents (Addy 1992).



About the etiology of dentin hypersensitivities is not much known (Addy 1990). The most common therapy of hypersensitive dentin is using fluorid solutions (Gedalia et al. 1978) or iontophoresis with fluorid paste (Jensen 1965, Johnson et al. 1982). Since beginning of the 90's using of laser systems has shown good results. In literature two different methods using laser in hypersensitivities are described: the indirect application is a therapy with laser combined with tin-fluorid application and the direct application of laserlight (Bach 2007, Moritz 2006). In history there were a number of studies using Nd:YAG Laser (Gutknecht et al. 1997, Gelskey et al. 1993), CO₂ Laser (Moritz et al. 1996), GaAlAs Laser (Matsumoto et al. 1985, Gerschmann et al. 1994) and Er:YAG Laser (Schwarz et al. 2002) about this problem. All the studies couldn't show positive long term results.

_Method

25 patients (11 females and 14 males, aged between 18 and 46 years, mean age 32 years) who shows a total of 172 contralateral pairs of hypersensitive and caries free teeth. There were no caries lesions on neighbouring or selected teeth, no desensitising therapy during the last 9 months and no cervical filling.

_Study design

Split mouth design. Teeth in the first quadrant were treated with Dentin Protector (Ivoclar Vivadent, Ellwangen, Germany), in the second quadrant with Er:YAG Laser (KEY III, KaVo, Biberach,