Literatur

**Modifikation von Zahnhalsdentin mit einem Diodenlaser zwecks Desensibilisierung**

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1) Schwarz F, Arweiler N, Georg T, Reich E. Desensitizing effects of an Er:YAG laser on hypersensitive dentine. J Clin Periodontol 2002;29:211-215.
2) Miglani S, Aggarwal V, Ahuja B. Dentin hypersensitivity: Recent trends in management. J Conserv Dent 2010;13:218-224.
3) Hypersensitivity CABoD. Consensus-based recommendations for the diagnosis and management of Dentin Hypersensitivity. J Can Dent Assoc 2003;69:221-226.
4) West NX. Dentine hypersensitivity. Monogr Oral Sci 2006;20:173-189.
5) Addy M. Tooth brushing, tooth wear and dentine hypersensitivity--are they associated? Int Dent J 2005;55:261-267.
6) Haywood VB. Treating sensitivity during tooth whitening. Compend Contin Educ Dent 2005;26:11-20.
7) Jacobsen PL, Bruce G. Clinical dentin hypersensitivity: understanding the causes and prescribing a treatment. J Contemp Dent Pract 2001;2:1-12.
8) Brannstrom M, Johnson G, Nordenvall KJ. Transmission and control of dentinal pain: resin impregnation for the desensitization of dentin. J Am Dent Assoc 1979;99:612-618.
9) Brannstrom M. Etiology of dentin hypersensitivity. Proc Finn Dent Soc 1992;88 Suppl 1:7-13.
10) Absi EG, Addy M, Adams D. Dentine hypersensitivity. A study of the patency of dentinal tubules in sensitive and non-sensitive cervical dentine. J Clin Periodontol 1987;14:280-284.
11) Narhi M, Kontturi-Narhi V, Hirvonen T, Ngassapa D. Neurophysiological mechanisms of dentin hypersensitivity. Proc Finn Dent Soc 1992;88 Suppl 1:15-22.
12) Byers MR. Development of sensory innervation in dentin. J Comp Neurol 1980;191:413-427.
13) Ngassapa D. Neurophysiological basis, aetiology and clinical aspects of hypersensitive teeth. East Afr Med J 1996;73:775-778.
14) Romano AC, Aranha AC, da Silveira BL, Baldochi SL, Eduardo Cde P. Evaluation of carbon dioxide laser irradiation associated with calcium hydroxide in the treatment of dentinal hypersensitivity. A preliminary study. Lasers Med Sci 2011;26:35-42.
15) He S, Wang Y, Li X, Hu D. Effectiveness of laser therapy and topical desensitising agents in treating dentine hypersensitivity: a systematic review. J Oral Rehabil 2011;38:348-358.
16) Mitchell JC, Musanje L, Ferracane JL. Biomimetic dentin desensitizer based on nano-structured bioactive glass. Dent Mater 2011;27:386-393.
17) Lee BS, Tsai HY, Tsai YL, Lan WH, Lin CP. In vitro study of DP-bioglass paste for treatment of dentin hypersensitivity. Dent Mater J 2005;24:562-569.
18) Lin CP, Lee BS, Kok SH, Lan WH, Tseng YC, Lin FH. Treatment of tooth fracture by medium energy CO2 laser and DP-bioactive glass paste: thermal behavior and phase transformation of human tooth enamel and dentin after irradiation by CO2 laser. J Mater Sci Mater Med 2000;11:373-381.
19) Farmakis ET, Kozyrakis K, Khabbaz MG, Schoop U, Beer F, Moritz A. In vitro evaluation of dentin tubule occlusion by Denshield and Neodymium-doped yttrium-aluminum-garnet laser irradiation. J Endod 2012;38:662-666.
20) Gutknecht N, Moritz A, Dercks HW, Lampert F. Treatment of hypersensitive teeth using neodymium:yttrium-aluminum-garnet lasers: a comparison of the use of various settings in an in vivo study. J Clin Laser Med Surg 1997;15:171-174.

21) Umana M, Heysselaer D, Tielemans M, Compere P, Zeinoun T, Nammour S. Dentinal tubules sealing by means of diode lasers (810 and 980 nm): a preliminary in vitro study. Photomed Laser Surg 2013;31:307-314.
22) ten Cate JM, Duijsters PP. Alternating demineralization and remineralization of artificial enamel lesions. Caries Res 1982;16:201-210.
23) Donath K, Breuner G. A method for the study of undecalcified bones and teeth with attached soft tissues. The Sage-Schliff (sawing and grinding) technique. J Oral Pathol 1982;11:318-326.
24) Hsu PJ, Chen JH, Chuang FH, Roan RT. The combined occluding effects of fluoride-containing dentin desensitizer and Nd-Yag laser irradiation on human dentinal tubules: an in vitro study. Kaohsiung J Med Sci 2006;22:24-29.
25) Lan WH, Lee BS, Liu HC, Lin CP. Morphologic study of Nd:YAG laser usage in treatment of dentinal hypersensitivity. J Endod 2004;30:131-134.
26) Moritz A, Schoop U, Goharkhay K, Aoid M, Reichenbach P, Lothaller MA, et al. Long-term effects of CO2 laser irradiation on treatment of hypersensitive dental necks: results of an in Vivo study. J Clin Laser Med Surg 1998;16:211-215.
27) Marchesan MA, Brugnera-Junior A, Souza-Gabriel AE, Correa-Silva SR, Sousa-Neto MD. Ultrastructural analysis of root canal dentine irradiated with 980-nm diode laser energy at different parameters. Photomed Laser Surg 2008;26:235-240.
28) Aranha AC, Domingues FB, Franco VO, Gutknecht N, Eduardo Cde P. Effects of Er:YAG and Nd:YAG lasers on dentin permeability in root surfaces: a preliminary in vitro study. Photomed Laser Surg 2005;23:504-508.
29) de Moura-Netto C, de Moura AA, Davidowicz H, Aun CE, Antonio MP. Morphologic changes and removal of debris on apical dentin surfaces after Nd:YAG laser and diode laser irradiation. Photomed Laser Surg 2008;26:263-266.
30) Ipci SD, Cakar G, Kuru B, Yilmaz S. Clinical evaluation of lasers and sodium fluoride gel in the treatment of dentine hypersensitivity. Photomed Laser Surg 2009;27:85-91.
31) Cakar G, Kuru B, Ipci SD, Aksoy ZM, Okar I, Yilmaz S. Effect of Er:YAG and CO2 lasers with and without sodium fluoride gel on dentinal tubules: a scanning electron microscope examination. Photomed Laser Surg 2008;26:565-571.
32) Kumar NG, Mehta DS. Short-term assessment of the Nd:YAG laser with and without sodium fluoride varnish in the treatment of dentin hypersensitivity--a clinical and scanning electron microscopy study. J Periodontol 2005;76:1140-1147.
33) Zapletalova Z, Perina J, Jr., Novotny R, Chmelickova H. Suitable conditions for sealing of open dentinal tubules using a pulsed Nd:YAG laser. Photomed Laser Surg 2007;25:495-499.
34) Yilmaz HG, Kurtulmus-Yilmaz S, Cengiz E. Long-term effect of diode laser irradiation compared to sodium fluoride varnish in the treatment of dentine hypersensitivity in periodontal maintenance patients: a randomized controlled clinical study. Photomed Laser Surg 2011;29:721-725.
35) Hashim NT, Gasmalla BG, Sabahelkheir AH, Awooda AM. Effect of the clinical application of the diode laser (810 nm) in the treatment of dentine hypersensitivity. BMC Res Notes 2014;7:31.
36) Ladalardo TC, Pinheiro A, Campos RA, Brugnera Junior A, Zanin F, Albernaz PL, et al. Laser therapy in the treatment of dentine hypersensitivity. Braz Dent J 2004;15:144-150.
37) Corona SA, Nascimento TN, Catirse AB, Lizarelli RF, Dinelli W, Palma-Dibb RG. Clinical evaluation of low-level laser therapy and fluoride varnish for treating cervical dentinal hypersensitivity. J Oral Rehabil 2003;30:1183-1189.
38) Marsilio AL, Rodrigues JR, Borges AB. Effect of the clinical application of the GaAlAs laser in the treatment of dentine hypersensitivity. J Clin Laser Med Surg 2003;21:291-296.
39) Buzalaf MA, Pessan JP, Honorio HM, ten Cate JM. Mechanisms of action of fluoride for caries control. Monogr Oral Sci 2011;22:97-114.
40) Santaella MR, Braun A, Matson E, Frentzen M. Effect of diode laser and fluoride varnish on initial surface demineralization of primary dentition enamel: an in vitro study. Int J Paediatr Dent 2004;14:199-203.

41) Rimondini L, Baroni C, Carrassi A. Ultrastructure of hypersensitive and non-sensitive dentine. A study on replica models. J Clin Periodontol 1995;22:899-902.
42) Vlacic J, Meyers IA, Walsh LJ. Laser-activated fluoride treatment of enamel as prevention against erosion. Aust Dent J 2007;52:175-180.