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Editorial
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A Tool with a Great Future Potential

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Dear Collegues,

The idea of substituting a drill with a laser light which has less adverse effects on patients, without vibration, noise and pain, has led to its introduction in dentistry. As we mentioned in our previous survey, conventional mechanical cutting and drilling is the potential factor in provoking pain and discomfort during tooth preparation [1,2]. Beside, lasers are extremely safe compared with rotating instruments, especially in pediatric dentistry, when used in the treatment of very young children, due to the lower risk of accidental damage to soft tissues and pulp tissue. Lasers bring new possibilities for safe and minimal removal of carious tissue with better acceptance compared to conventional methods in children. As reported by Martens and emphasised by Gutknechct et al. [3-5], children are the first in line to receive dental laser treatment' and based on micro-dentistry's comment 'filling without drilling'. Thus, the philosophy of laser-supported dental diagnosis and treatment is becoming a gold-standard to treat children successfully, according to the latest extensive publications in paediatric dentistry [4,6] . Coming back to my own survey, and literature on this, I strongly recommend becoming informed about this new technology.

Low level laser therapy (LLLT) is also known as 'soft laser therapy' and bio-stimulation. The use of LLLT in health care has been documented in the literature for more than three decades. The typical power output for a low level laser devices used for LLLT have poor absorbtion in water and thus penetrate soft and hard tissues from 3-15mm [7]. Positive reports of the benefit of LLLT used in dental surgery to treat disorders including TMJ pain, trigeminal neuralgia and muscular pain have been presented [8].

An additional area of interest in this field is the use of LLLT to achieve an analgesic effect in the dental pulp prior to restorative procedures. The laser, if used correctly, generates an anlgesic effect in the irradiated area caused by a temporary loss of conductance of the nervous impulse due to the distruption of the Na^+/K^+ pump of the cell membrane of the nervous fibre. This results in a impulse conduction, and therefore an analgesic effect occurs. First noted with Nd:YAG laser in the early 1990's, the clinical use of 'pre-emptive laser analgesia' is becoming more widespread now as a clinical technique with the Er:YAG and Er, Cr:YSGG laser [7]. On our paper in 2011 (Tanboga et al.) [1], we evaluated the analgesic effect of LLLT on pain during primary molar cavity preparation with Er:YAG laser in pediatric dental patients. Following achieving laser analgesia, all cavities were restored. Immediately after treatment, children were instructed to rate their pain on the visual analogue scale (VAS) from 0 to 5 points and the scores were noted. The results revealed a statistically significant difference between LLLT and non-LLLT groups. What we reported at the conclusion was, 'LLLT application prior to cavity preperation with laser, makes cavity preperation more comfortable and effective and has special advantages in the treatment'.

In Cauwels and Martens report [4,9], LLLT was used in a group of pediatric patients with cancer for the management of chemotherapy-induced OM, supplementary to basic oral health. LLLT is known to relieve pain, having an anti-inflammatory effect and the property to enhance wound healing. Regarding the preventive capacity of LLLT, the incidence of OM seemed to be significantly reduced. In aggrement with other studies, the reduction in pain found in this study was the most remarkable effect reported.

The use of lasers in pediatric dentistry is stil not widespread despite their great versatility. This could be due to the high cost of laser units, the lack of education about lasers in undergraduate/postgraduate courses. But it should be noted that the training is required. I believe in great future potential in this field.

References

1. Tanboga I, Eren F, Altinok B, Peker S, Ertugral F (2011) The effect of low level laser therapy on pain during dental tooth-cavity preparation in children. Eur Arch Paediatr Dent 12: 93-95.
2. Eren F, Altinok B, Ertugral F, Tanboga I (2013) The effect of erbium, chromium:yttrium-scandium-gallium-garnet (Er,Cr:YSGG) laser therapy on pain during cavity preparation in paediatric dental patients: a pilot study. Oral Health Dent Manag 12: 80-84.
3. Martens LC (2003) Laser-assisted pediatric dentistry:Review and Outlook, J Oral Laser App 3:203-209.
4. Martens LC (2011) Laser physics and a review of laser applications in dentistry for children. Eur Arch Paediatr Dent 12: 61-67.
5. Gutknecht N, Franzen R, Vanweersch L, Lampert F (2005) Lasers in pediatric dentistry-A review. J Oral Laser App 5: 207-218.
6. Olivi G, Caprioglio C, Genovese MD (2010) Lasers in dental traumatology. Eur J Paediatr Dent 11: 71-76.
7. Moritz A, Beer F, Goharkhay K, Schoop U, Strassi M, et al. (2006) Oral Laser Application. Quintessence Publishing Co. Inc. Berlin, Germany.
8. Pinheiro AL, Cavalcanti ET, Pinheiro TI, Alves MJ, Miranda ER, et al. (1998) Low-level laser therapy is an important tool to treat disorders of the maxillofacial region. J Clin Laser Med Surg 16: 223-226.
9. Cauwels RG, Martens LC (2011) Low level laser therapy in oral mucositis: a pilot study. Eur Arch Paediatr Dent 12: 118-123.

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