ISSN 1855-9913

Journal of the Laser and Health Academy
Vol. 2013, No.1; www.laserandhealth.com

P.A.L.T. - Pain Attenuation Laser Therapy

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SUMMARY

The pain of injections is one of the reasons why people have a fear of dental offices. This is why there are many attempts to develop pain-free dental injections. Lasers with wavelengths between 600 and 10600 nm are used in dentistry for a broad spectrum of applications including pain relief.

The aim of this study was to assess the efficacy and safety of a 1064 nm Nd:YAG laser for reducing the pain of dental injections.

A total of 43 patients (24 female and 19 male) were included in the study to confirm the level of effectiveness in the use of a low wattage Nd:YAG application to minimize patient discomfort that occurs during routine dental anesthetic injections.

The Nd:YAG laser treatment was applied in a perpendicular manner to tissue at the injection site using an R21 handpiece (4 mm spot size) and PALT cannula with 300 μm fiber tip. During the treatment the cannula has to be in light contact with the treated tissue. Power of 1W, a repetition rate of 15Hz and application time of 60s were set. The injection was applied at the same site immediately after the laser treatment. 10 different injection sites were tested (in total there were 82 treatments performed). To determine the pain relief at each of treated sites, the patient's pain level was measured on scale from 0 (no pain) to 10 (maximum pain).

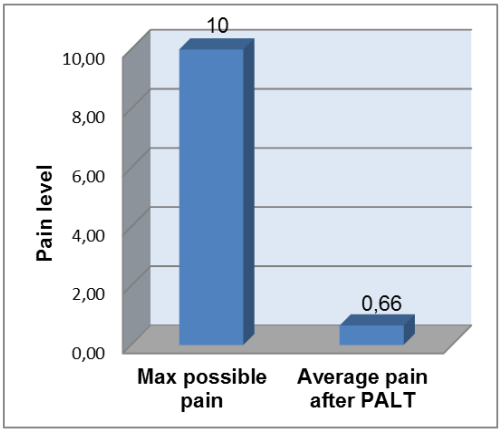

Fig.1: Average Pain Score of all (82) treated sites.

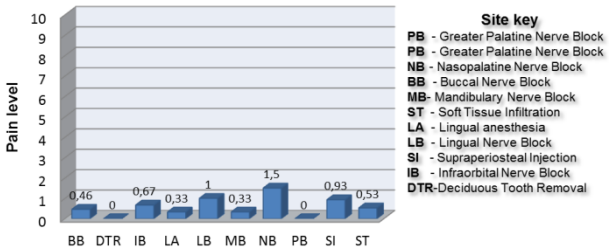

Fig.2: Average Pain after PALT per injection site.

Results showed very low pain levels on all sites treated, ranging in average from 0 to 1.5 (see Fig. 2). Such low pain levels indicate huge pain relief, considering that dental anesthetic injections cause an average pain of 4.6 (on the scale from 0 to 10) [1].

PALT presents a laser treatment with immediate results, a high rate of success and no side effects. It provides a great solution for patients who require injections and come to the practice expecting an otherwise pain-free laser treatment.

REFERENCES

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