

Laser therapy applications for osteoarthritis and chronic joint pain – A randomized placebo-controlled clinical trial



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Abstract

A randomized placebo-controlled clinical trial to evaluate an adjunctive treatment modality for pain associated with knee disorders was conducted utilizing a therapeutic laser system (low energy, non-surgical).

The therapeutic laser system utilized a dual wavelength, multiple diode laser cluster probe with five super-pulsed 905 nm near-infrared (NIR) laser diodes, each emitting at 40 mW average power and four continuous wave 660 nm visible (VIS) red laser diodes, each emitting at 25 mW. It was used as an adjunctive modality providing 12 treatments, three times a week to a homogeneous patient population (n = 126), in combination with standardized chiropractic techniques, to evaluate effectiveness on subjects presenting with osteoarthritis and knee pain. The primary endpoint was measured by the visual analog scale (VAS) to assess pain levels on a scale of 0 – 10. The success criteria for an individual patient in this study were identified as an improvement of 30 % or more in the VAS from baseline to 12th treatment and/or an improvement of 20 % or more in the VAS from baseline to 30-day follow-up evaluation.

The data obtained in the study demonstrated that the present therapeutic laser system provided significant pain relief and osteoarthritic improvements in all primary evaluation criteria, with a statistical and clinical significance of $p < 0.01$ in VAS from baseline to the 30-day follow-up. The data obtained in the study demonstrated that the present therapeutic laser system provided significant pain relief and osteoarthritic improvements in all primary evaluation criteria, with a statistical and clinical significance of $p < 0.01$ in VAS from baseline to the 30-day follow-up.

Conclusion

The management of chronic pain in patients with OA will always present therapeutic challenges. Anti-inflammatory agents, pharmaceutical painkillers and corticosteroids offer only temporary pain relief with hardly any mid to longterm benefits. Therefore, because of the excellent safety and efficacy profile of the therapeutic laser system under evaluation in this clinical study, it can be stated that noninvasive, super-pulsed laser therapy represents a promising therapeutic alternative for patients with chronic knee pain.

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