Arthritis – Cervical

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The effect of 300mW, 830nm laser on chronic neck pain: A double-blind, randomized, placebo-controlled study.

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A randomized, double-blind, placebo-controlled study of low-level laser therapy (LLLT) in 90 subjects with chronic neck pain was conducted with the aim of determining the efficacy of 300mW, 830nm laser in the management of chronic neck pain. Subjects were randomized to receive a course of 14 treatments over 7 weeks with either active or sham laser to tender areas in the neck. The primary outcome measure was change in a 10cm Visual Analogue Scale (VAS) for pain. Secondary outcome measures included Short-Form 36 Quality-of-Life questionnaire (SF-36), Northwick Park Neck Pain Questionnaire (NPNQ), Neck Pain and Disability Scale (NPAD), the McGill Pain Questionnaire (MPQ) and Self-Assessed Improvement (SAI) in pain measured by VAS. Measurements were taken at baseline, at the end of 7 weeks' treatment and 12 weeks from baseline. The mean VAS pain scores improved by 2.7 in the treated group and worsened by 0.3 in the control group (difference 3.0, 95% CI 3.8-2.1). Significant improvements were seen in the active group compared to placebo for SF-36-Physical Score (SF36 PCS), NPNQ, NPAD, MPQVAS and SAI. The results of the SF-36 - Mental Score (SF36 MCS) and other MPQ component scores (afferent and sensory) did not differ significantly between the two groups. Low-level laser therapy (LLLT), at the parameters used in this study, was efficacious in providing pain relief for patients with chronic neck pain over a period of 3 months.

The clinical efficacy of low-power laser therapy on pain and function in cervical osteoarthritis.

Clinical Rheumatology. 2001; 20(3): 181-184.
Oezdemir F, Birtane M, Kokino S

Pain is a major symptom in cervical osteoarthritis (COA). Low-power laser (LPL) therapy has been claimed to reduce pain in musculoskeletal pathologies, but there have been concerns about this point. The aim of this study was to evaluate the analgesic efficacy of LPL therapy and related functional changes in COA. Sixty patients between 20 and 65 years of age with clinically and radiologically diagnosed COA were included in the study. They were randomised into two equal groups according to the therapies applied.

either with LPL or placebo laser. Patients in each group were investigated blindly in terms of pain and pain-related physical findings, such as increased paravertebral muscle spasm, loss of lordosis and range of neck motion restrictio n before and after therapy. Functional improvements were also evaluated. Pain, paravertebral muscle spasm, lordosis angle, the range of neck motion and function were observed to improve significantly in the LPL group, but no improvement was found in the placebo group. LPL seems to be successful in relieving pain and improving function in osteoarthritic diseases.

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Low-power laser in osteoarthritis of the cervical spine.

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Patients with symptomatic osteoarthritis of the cervical spine were treated with very low-power modulated laser (LPL). Two applications were performed at an interval of 20 days. Changes in pain and ultrasound thickness of the soft connective tissue layer above the right and the left superior trapezium were studied. No worsening of pain was observed. Pain improved after the first application of LPL in 9 out of 14 patients, but the difference was not significant. Pain improvement remained stable between the first assessment and the second assessment, which was performed after 20 days. In comparison with the first application, at the second application the number of patients with improved pain after LPL increased to 12 out of 14 ($p < 0.01$). An appreciable difference in the thickness of the subcutaneous soft tissue layer overlying the two superior trapezia was demonstrated in all patients at the first examination. Comparison of the measurements before and after the application of LPL showed significant differences.

Diode Laser in Cervical Myofascial Pain: A Double-Blind Study versus Placebo

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Summary: We present a double-blind trial in which a pulsed infrared beam was compared with a placebo in the treatment of myofascial pain in the cervical region. The patients were submitted to 12 sessions on alternate days to a total energy dose of 5 J each. At each session, the four most painful muscular trigger points and five bilateral homometameric acupuncture points were irradiated. Those in the placebo group submitted to the same number of sessions following an identical procedure, the only difference being that the laser apparatus was nonoperational. Pain was monitored using the Italian version of the McGill pain questionnaire and the ScottHuskisson visual analogue scale. The results show a pain attenuation in the treated group and a statistically significant difference between the two groups of patients, both at the end of therapy and at the 3-month follow-up examination.

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Wavelength	Power	Energy Density	Power Density	Energy per point	Pulses
904nm	5mW av (25Wpeak)	(not given)	(not given	1 J	1KHz x 200nS