



University of Colorado Denver

CLASS IV LASER THERAPY; EFFECTIVE FOR BACK AND NECK/SHOULDER PAIN

(Retrospective, Practice Based Clinical Preliminary Investigation)

Author: L.D. Morries, DC, CCSP®

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Background: Class IV laser therapy is a recent modality that is used to treat pain and promote healing of muscular tissue. The procedure is minimally invasive and easily performed. Laser therapy was added to conventional chiropractic treatment of spinal manipulation and an exercise program for treating patients with back pain. The objective of this investigation was to assess efficacy and safety of the combination and generate preliminary results for a randomized controlled trial.

Methods: Between 9/2009 and 2/2010, a total of 55 patients with non-surgical lower back pain (sciatica) presented to my office and gave consent for treatment. Twenty-four patients with back pain received spinal Class IV laser therapy in addition to manipulation for back pain. Twenty-one patients (historical controls) received spinal manipulation without Class IV laser therapy. All patients completed VAS scales before treatment (VAS0), at one week (VAS1), and at four weeks (VAS4). Regardless of treatment group, all patients received a personalized regimen of spinal manipulation, manual therapy, and exercise, under the direction of the principal investigator (LDM). Percent difference between VAS0 and VAS4 was compared between groups.

Results: Demographics were similar for both groups (Table 1). Patients in the manipulation + laser group reported pain relief after 2-3 sessions of laser therapy (clinical observation). No adverse events were noted following laser therapy

Table 1 – Patient demographics and dependent variables

| | N | Age | VAS 0 | VAS 4 | % Difference |
|----------------------|----|-------------|-----------|------------|--------------|
| Laser + Manipulation | 24 | 54.2 ± 11.1 | 6.5 ± 1.9 | 1.75 ± 1.6 | 71.7 ± 22.0 |
| Manipulation Only | 21 | 51.0 ± 12.7 | 5.5 ± 1.4 | 3.5 ± 2.1 | 50.5 ± 28.4 |

A positive-valued percent differences of VAS between pretreatment and 4wk points; indicate that a quantitative reduction in pain by both treatment groups. Statistical comparison of the groups using an unpaired *t*-test indicated that the manipulation + laser offers greater pain reduction when compared to manipulation only ($p=0.007$). Interval estimates indicate a 21.18 larger reduction in VAS (95% Confidence Interval: 6.00, 36.35) in the manipulation + laser group.

Conclusions: These results indicate that both treatments successfully reduced the VAS by the fourth week of treatment, and that a higher reduction in VAS occurred in the group treated by manipulation + laser at week four.

In summary, Class IV laser therapy is a safe and effective modality for treating low back pain when added to conventional treatment of manipulation and exercise. Further study is indicated to support these initial findings.