

# Acute Cervical Pain is Relieved with Gallium Arsenide (GaAs) Laser radiation: A Double Blind Preliminary Study

---

Fernando A Soriano, Roxana Rios, Miguel Pedrola, Jaquelelina Giagnorio and Carlos R Battagliotti<sup>1</sup>

<sup>1</sup> The Second Cathedra of Internal and Therapeutic Medicine, Teaching Hospital Eva Peron, National University of Rosario School of Medicine, Rosario, Argentina

---

**Study Design/Patients and Methods:** Seventy-one patients with acute cervical pain were randomized in two groups. Group A, 37 patients were irradiated with a pulsed GaAs diode laser, 904 nm, pulse width 200 nsec, pulse frequency 10,000 Hz, peak power of 20 W, average power 40 mW, spot size 150  $\mu\text{m}^2$  in area (incident power density of approximately 26  $\text{W}/\text{cm}^2$ ) and an angle of divergence of 6°. The laser was applied in the point technique with a dose of 4  $\text{J}/\text{cm}^2$  per point in the area of pain. Group B, 34 patients, was treated with sham irradiation with a deactivated laser system. Neither the patients nor the operator knew which group each patient was randomly assigned to. The use of analgesic drugs and physical therapy was excluded in both groups. Pain was evaluated through a linear colour scale. Laser treatment was considered effective when pain relief was more than 60%.

**Results:** The treatment was effective in 94.59% of patients in group A and 38.24% of group B ( $p < 0.0019$ ). The pain was relieved completely in 67.56% of patients in group A and in 17.65% in group B. In patients in whom the response to the treatment was effective, the pain returned in the six months following treatment in 14.28% of Group A, but in 58.33% of group B ( $p < 0.005$ ). No side effects were observed.

**Conclusion:** These results suggest that GaAs laser radiation is an efficient and safe treatment for patients with acute cervical pain. Six years have passed since we incorporated the GaAs laser into our therapeutic arsenal and up to date we have irradiated more than two thousand patients with different kinds of pain and pain sites. The aim of this work is to evaluate the real therapeutic effect versus the placebo effect of laser therapy in patients with acute cervical pain in both the immediate effect and the possible latency of the pain relief with LLLT.