



Low Level Laser Therapy & Tuberculosis clinical research

Indian J Chest Dis Allied Sci. 2003 Jan-Mar;45(1):19-23.

Role of gallium arsenide laser irradiation at 890 nm as an adjunctive to anti-tuberculosis drugs in the treatment of pulmonary tuberculosis.

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BACKGROUND: Tuberculosis is a global emergency with about nine million people developing disease every year. The long duration of treatment has emerged as a major obstacle in the control of tuberculosis. There is a need for development of new drugs and or shortened therapy. **METHODS:** The present study was carried out to explore whether any benefit could be achieved by the addition of low level energy laser therapy (LLLT) to the conventional anti-tubercular chemotherapy. One-hundred-thirty new sputum smear positive patients of pulmonary tuberculosis were enrolled to evaluate the bio-stimulatory effects of Gallium Arsenide laser irradiation at 890 nm, as an adjuvant therapy. These patients were randomly divided into two groups to receive either LLLT or sham irradiation (control) concomitantly with anti-tuberculosis chemotherapy. **RESULTS:** The patients treated with semiconductor laser as an adjuvant therapy along with antituberculosis drugs had a faster clearance of tubercle bacilli from the sputum as compared to the control group (P value at :45 days=0.1392, 60 days=0.0117, 75 days=0.00805, 90 days=0.00739).

CONCLUSIONS: These findings provide preliminary evidence that low level laser therapy with Gallium Arsenide laser may be a promising adjunctive therapy for patients with tuberculosis. Faster conversion of sputum should prevent the development of resistant mutants.

The Cochrane Database of Systemic Reviews. 2002.

Low level laser therapy for treating tuberculosis.

Vlassov V V, Pechatnikov L M, MacLehose H G. The authors have made a thorough literature search for studies using laser therapy as an adjunct therapeutic modality in the treatment of tuberculosis. These studies come from the former Soviet states and India. The studies in Russian language have generally only been available as Medline abstract and they have been vague on the details. Now, for the first time, Russian researchers have evaluated the original texts. Laser therapy has been used in many ways. Acupuncture points, irradiation over the organ, blood irradiation, puncture into the lungs, irradiation into the trachea and into the urinary bladder. Laser types used have also differed a lot; HeNe, nitrogen, GaAs, Nd:YVO4 and at powers ranging from 2

to 200 mW. The weak spot in previous Cochrane reviews on laser therapy has been the lack of dosage analyses. No such analysis has been made in the current study, but with the different therapeutic approaches used, such an analysis is not possible in this case. The reviewers have not found any randomised or quasi-randomised studies, but an evaluation of the quality of the studies has been performed. There is a lack of relevant information on procedures in many studies and some contradictory statements. All in all, the reviewers come to the conclusion that laser therapy is currently being used to treat tuberculosis without evidence of its benefits and harms. *Probl Tuberk.* 2002;(8):16-8.

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