

Tuberculosis

[Probl Tuberk Bolezn Legk.](#) 2008;(4):35-8.

[Laser therapy in the complex treatment of prostatic tuberculosis at the sanatorium stage of rehabilitation]

[Article in Russian]

[Shakirov RG](#), [Pavlov VN](#), [Iagafarova RK](#).

Seventy nine patients with prostatic tuberculosis were examined and treated at the specialized "Glukhovskaya" sanatorium. All the patients were divided into 2 groups: a study group and a control one. In the study group patients, low-intensity laser radiotherapy was additionally performed in combination with etiological and pathogenetical treatments. The performed studies demonstrated that in the patients exposed to low-intensity laser radiation, there was a rapid relief of dysuric symptoms, cessation or diminishment of the signs of copulative dysfunction; positive changes in life quality indices and laboratory parameters were statistically significantly more frequently and more rapidly recorded. Laser therapy simultaneously was found to affect a few links of the pathogenesis of genitourinary tuberculosis, to have limited number of contraindications, to be well tolerated, and to be an effective method of the complex treatment of patients with prostatic tuberculosis during sanatorium rehabilitation.

[Lik Sprava.](#) 2007 Apr-May;(3):42-6.

[Patients with tuberculosis associated with chronic non-specific lung diseases]

[Article in Ukrainian]

[Nikolaieva OD](#).

159 patients have been observed to assess the efficiency of laseropuncture use in a complex treatment of patients with lung tuberculosis and chronic bronchitis. Disbalance in renal meridian (R), urinary bladder (V) and insufficiency of the energy in colon meridian (60.3%) were observed in patients with tuberculosis associated with chronic bronchitis. Medium deviations of electro-skin conductivity from the physiological gape in meridians of GI, IG, F, V, R in patients with tuberculosis associated with chronic bronchitis considerably differ from those data obtained from patients with only tuberculosis. Obtained data testify more severe disorders of energy balance in meridians

of patients having except tuberculosis other associated diseases. Medium parameters of deviations from the physiological gape considerably decrease after the course of laseropuncture compared with those patients treated traditionally. Improve of the course of the chronic bronchitis was noted in patients who underwent laseropuncture.

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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Department of Tuberculosis and Chest Diseases, LRS Institute of Tuberculosis and Allied Diseases, Sri Aurobindo Marg, New Delhi, India.

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 anti-tuberculosis 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.

[Efficiency of supra-venous blood laser radiation used in the treatment of disseminated pulmonary tuberculosis in adolescents]

[Article in Russian]

Rusakova LI, Dobkin VG, Ovsiankina ES.

In 19 of 40 adolescent patients with disseminated pulmonary tuberculosis, supravenuous blood laser radiation was used in the complex treatment 2-3 weeks after the initiation of chemotherapy. The use of this type of laser therapy enhanced the efficiency of the treatment, accelerated positive changes of tuberculosis by 2.5-3.5 months, as evidenced by clinical and laboratory parameters, led to a smooth course of tuberculosis to develop less pronounced residual changes in the lung.

Cochrane Database Syst Rev. 2002;(3):CD003490.

Low level laser therapy for treating tuberculosis.

Vlassov VV, Pechatnikov LM, MacLehose HG.

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BACKGROUND: The main treatment for tuberculosis is antituberculous drugs. Low energy laser therapy is used as an adjunct to antituberculous drugs, predominantly in the former Soviet Union and India. **OBJECTIVES:** To assess the benefits and harms of low level laser therapy for treating tuberculosis in randomized and quasi-randomized controlled trials. To seek information about potential benefits or harms from observational studies. **SEARCH STRATEGY:** We searched the Cochrane Infectious Diseases Group specialized trials register (up to June 2001), the Cochrane Controlled Trials Register (Issue 1, 2001), MEDLINE (1966 to December 2001), EMBASE (1988 to December 2001), CINAHL (up to November 2001), PEDro (up to November 2001), the

Science Citation Index (up to December 2001), National Centre for Science Information at the Indian Institute of Science (15 April 2002), electronic catalogue of the Central Medical Library (Moscow; 1988 to January 2002), the internet using 'Google' (21 January 2002), and reference lists of articles. We contacted relevant organizations and researchers. **SELECTION CRITERIA:** (1) Randomized and quasi-randomized controlled trials comparing low level laser therapy with no low level laser therapy in people with tuberculosis. We also conducted a subsidiary analysis of of the potential benefits and harms from observational studies. **DATA COLLECTION AND ANALYSIS:** Two reviewers independently assessed trial quality and extracted data. We contacted study authors for additional information. Adverse event information was collected from the studies. **MAIN RESULTS:** No randomized or quasi-randomized controlled trials met the inclusion criteria for the review. The potential benefits and harms from 29 observational studies involving over 3500 people are described. **REVIEWER'S CONCLUSIONS:** We have not identified any well designed trials using low level laser therapy (LLLT) to treat tuberculosis. Therefore, the use of LLLT to treat tuberculosis is not supported by reliable evidence.

Probl Tuberk. 2000;(1):14-7.

[Intravenous laser radiation treatment of acute and progressive forms of tuberculosis in teenagers]

[Article in Russian]

Ovsiankina ES, Firsova VA, Dobkin VG, Rusakova LI.

In 25 of 44 teenagers suffering from acute and progressive tuberculosis, intravenous blood laser radiation was included into its multimodality treatment following 2-4 weeks of the initiation of chemotherapy. The use of laser enhanced the efficiency of treatment, accelerated positive changes by 1.5-2 months by major clinical and laboratory indices, made the disease run smoothly and caused less pronounced residual changes in the lung.

Probl Tuberk. 2000;(2):18-21.

[Magnetic laser therapy in combination with lymphotropic drugs administration in treating teenagers with common forms of tuberculosis]

[Article in Russian]

[Ovsiankina ES](#), [Dobkin VG](#), [Kobulashvili MG](#), [Rusakova LI](#), [Gubkina MF](#).

The paper shows the efficiency of combined use of magnetic laser therapy (MLT) and lymphotropic drug therapy in 40 teenagers with common forms of tuberculosis. The use of laser makes it possible to modify methods of regional lymphotropic therapy, to

prolong its use and increase indications for it. MLT in combination with lymphotropic drug therapy accelerates positive changes and hence enhances the efficiency of tuberculosis treatment.

Probl Tuberk. 2003;(6):28-33.

[Combined low-intensity laser radiation in renal tuberculosis]

[Article in Russian]

Parmon EM, Borshchevskii VV, Kamyshnikov VS, Bortkevich LG.

Combined external radiation in the projection of the kidneys and intravascular laser blood radiation by applying an AZOR-2K apparatus were used in the combined treatment of 54 patients with tuberculosis of the urinary system. Analysis of the biochemical and immunological parameters of the patients' peripheral blood before and 3 weeks and 3 months after the combined treatment provided evidence suggesting a decrease in the magnitude of lipid peroxidation, an increase in the antioxidative status, and a reduction in the level of metabolites that affect on the development of the intoxication syndrome. The clinical findings suggest that the combined treatment has a beneficial impact on the course of renal tuberculosis, as appeared as better functional indices of urinary organs.

Urologiia. 2001 Nov-Dec;(6):13-7.

[Low-intensity laser irradiation in patients with urinary tuberculosis]

[Article in Russian]

Parmon EM, Borshchevskii VV, Bortkevich LG.

Combined surface radiation of renal projection area and intravascular laser radiation of blood (AZOR-2K unit) were used in combined treatment of 54 patients with urinary tuberculosis. Analysis of immunological and hematological indices of peripheral blood of patients before and after the combined treatment showed that low-intensity laser radiation activates local system of T-helpers which after specific antigenic impact differentiate into T-helpers-1. The latter synthesize in loco gamma-interferon, TNF-alpha and beta and IL-2 stimulating bactericidal mechanisms directed at destruction of M. tuberculosis and resolution of the infection focus.

Probl Tuberk. 2002;(8):16-8.

[Efficiency of supra-venous blood laser radiation used in the treatment of disseminated pulmonary tuberculosis in adolescents]

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Rusakova LI, Dobkin VG, Ovsiankina ES.

In 19 of 40 adolescent patients with disseminated pulmonary tuberculosis, supravenuous blood laser radiation was used in the complex treatment 2-3 weeks after the initiation of chemotherapy. The use of this type of laser therapy enhanced the efficiency of the treatment, accelerated positive changes of tuberculosis by 2.5-3.5 months, as evidenced by clinical and laboratory parameters, led to a smooth course of tuberculosis to develop less pronounced residual changes in the lung.

Probl Tuberk. 1997;(3):23-4.

[Role of external laser radiation in the multimodality treatment of patients with destructive pulmonary tuberculosis]

[Article in Russian]

Abashev IM, Kozlova AI.

Chuvash State University, Cheboksary.

Patients with destructive pulmonary tuberculosis were examined. Comparing those receiving chemopathogenetic, epicutaneous laser and ultrasound therapies showed an increase in the incidence of cavitary scarring in those taking successive epicutaneous laser and ultrasound therapies and exposed to biologically active points. Epicutaneous laser therapy promoted cicatrization of large cavities.

Probl Tuberk. 1997;(2):21-2.

[Use of external laser radiation in patients with infiltrative pulmonary tuberculosis]

[Article in Russian]

Vinokurova MK, Gavril'ev SS, Petukhova NI, Baisheva NN.

NPO "Phthiology", Iakutia.

A procedure has been developed for the use of semiconductor laser radiation in the combined drug therapy of patients with disseminated infiltrative pulmonary tuberculosis with multiple destructions and massive bacterial excretion, by increasing the number of sessions, which reduces the time of bacterial excretion cessation by 2-4 weeks, decay cavity closure by a months, and hospital treatment by 1.5 months and promotes minimal residual changes in most of them.

Probl Tuberk. 1996;(6):54-7.

[Lasers in combined modality treatment of patients with pulmonary tuberculosis]

[Article in Russian]

[Dobkin VG](#), [Bagirov MA](#), [Bondarev GB](#), [Sadovnikova SS](#).

Central NII of Tuberculosis RAMN, Moscow.

Low-energy lasers were used in the combined preoperative treatment and therapy of 548 patients with chronic fibrocavernous tuberculosis. Indications for some types of exposure were defined, namely, transcutaneous exposure of the tuberculous involvement zone, combination of transcutaneous laser exposure and laser puncture, intravenous and endocavitary laser exposure. Low-energy lasers, as a many-factor pathogenetic exposure, are conducive to a more rapid and effective stabilization of tuberculosis progress, which helps sooner prepare the patients to surgical interventions and in some patients even do without them, reduce the number of postoperative complications, and improve the efficacy of surgical treatment of grave patients

COMPARATIVE EFFECTIVENESS DETOXICATION TRANSFUSION OF THERAPY (TT) AND INTRAVENOUS OF A LASER IRRADIATION BLOOD (ILIB) IN COMPLEX TREATMENT OF PATIENTS BY A PULMONARY TUBERCULOSIS

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Two groups of the patients infiltrative by a pulmonary tuberculosis in a phase of de-cay, MBT+, (discovered Koch's bacillus), comparable on a floor, age, pronounced intoxication and syndrome, extent of process in lungs and regime of chemotherapy. I groups 45 patients receiving TT (albumen 5% - 100 ml alternated with hacmodesum 200 ml, daily ?10), II groups - 68 patients, which was carried out ILIB(wavelength 0,63 urn, capacity of radiation on an output flexible monofiber conductor of light 2 mW, duration of a procedure 15 minutes, course 10 sessions). The efficiency of therapy was estimated on a reduction intoxication, which degree was defined on a level and structure middle molecules (MM) (presence of pathological fractions and dis-polypcptidcmy) in whey of blood. MM were studied prior to the beginning and after realisation of rates TT and ILIB by a method helium-chromatography on hcle "Toyop-carl HW-40F" (Japan). A normal level and structure MM (361 ± 14 cond I. unit) was established with inspection 40 healthy donors. Is established, that at the patients from I groups after realisation of a

course TT the general level MM on the average has de-creased from 858 ± 29 unit till 769 ± 31 unit ($p < 0,05$), the frequency dispolycptid-cmy (from $75 \pm 7,3$ % till $33 \pm 6,7$ % has decreased; $p < 0,001$) and pathological fractions (from $60 \pm 7,2$ % to $40 \pm 7,2$ %; $p > 0,05$). After a course ILIB investigated parameters also have decreased: a level MM from 920 ± 36 unit to 584 ± 23 unit ($p < 0,001$), frequency dispolypeptidcmy from $78 \pm 6,2$ % to $31 \pm 6,8$ % ($p < 0,001$) and pathological fractions from $67 \pm 6,7$ % till $24 \pm 6,4$ % ($p < 0,001$). From the given data it is visible, that the course ILIB in comparison with TT allows more and level of pathological fractions ($24 \pm 6,4$ % against $40 \pm 7,2$ %).