



Low Level Laser Therapy & EndoBronchial clinical research

Ultrastructure of the blood and lymphatic capillaries of the respiratory tissue during inflammation and endobronchial laser therapy.

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Novosibirsk, Russia. vpolosuk@unmc.edu For wide application of low-energy laser irradiation in the pulmonary clinic, study of the structural basis of the therapeutic effect is necessary. The aim of this research is to describe the structural changes of the blood and lymphatic capillaries in the respiratory tissues during inflammation and following laser biostimulation. Comparative ultrastructural study was carried out on 127 open respiratory biopsy specimens from 45 patients with infectious-destructive lung diseases. These patients were divided into two groups, depending on tactic of pre-operative therapy: patients treated by only traditional anti-inflammatory measures and patients receiving additional laser therapy. Heightened permeability of the blood capillary endotheliocytes was noted as the initial stage in the development of the inflammatory reaction. Intensification of the process of permeability is accompanied by interstitial edema, deformation of the interalveolar septa, and structural disorganization of alveolar epithelium cells. Local lesions of microcirculation result in tissue hypoxia and induce processes of fibrosis. Laser biostimulation promotes reversion of the inflammatory process and stabilizes fibroplastic processes. Basic principles of pathogenetic therapy were stated. It was shown that low-energy laser irradiation satisfies these requirements as an additional method in the therapy of destructive lung diseases. *Probl Tuberk.* 1991;(6):26-9.

Effect of low-energy laser irradiation of bronchial mucosa on systemic and local immunity in patients with chronic bronchitis

Ivaniuta OM, Chernushenko EF, Dzublik AIa, Tyshko NA, Naida IV, Kulik IV.

The effectiveness of endobronchial low-energy laser therapy was studied in 28 patients with chronic nonobstructive bronchitis concurrent with thinning of bronchial mucosa. The course of treatment made it possible to obtain positive dynamics of most parameters of immunologic reactivity in CNB patients. Systemic immunity parameters, except for the NST and concentration of circulating immune complexes, underwent essential normalization. Marked positive changes were found in the parameters characterizing functional activity of alveolar macrophages: there was a 2.5-fold increase in adhesive properties and over 1.3-fold increase in the percentage of phagocytes. The level of secretory IgA rose significantly (by 3.5 times). Hence, a manifested therapeutic

effect of this therapeutic method is mainly associated with its immune-stimulating action.

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