

Eye

Vestn Oftalmol. 2005 Jan-Feb;121(1):35-7.

[Quantum therapy and the composition of the moister of the eye anterior chamber (an experimental study)]

[Article in Russian]

[Pavliuk EU](#), [Sherkhoeva DTs](#), [Pavliuk AIu](#), [Khristoforov VN](#).

We examined 12 rabbits, 6 of whom (12 eyes) were exposed to magneto-infrared laser radiation (MILR) and another 6 (12 eyes) were controls. The parameters of pulse and continuous infrared LED radiation were as follows: wavelength--860 nm, pulse capacity--2 W, mean radiation capacity--10 mW, magnetic field strength--up to 17 mTl. A study of the moister of the anterior chamber showed a MILR-induced activated metabolism, i.e. a better acid-base balance (ABB), more intense oxygenation in the ocular tissues and decreased acidosis. Higher concentrations of buffer bases (ABEe and SBEC) cause shifts in ABB towards metabolic alkalosis. A lower concentration of glucose denotes intensified processes related with its utilization. A lack of changes in the quantity of salts in the moister of the anterior chamber rules out the possibility of that the content of glucose would go down due to its dissolution with a big volume of newly produced moister. A lack of an increase in the concentration of whole protein, as observed after MILR, can be regarded as indirect evidence to absence of any adverse effect on the vascular wall.

Vestn Oftalmol. 2002 May-Jun;118(3):15-7.

[Laser magnetotherapy after cataract extraction with implantation of intraocular lens]

[Article in Russian]

[Maksimov VIu](#), [Zakharova NV](#), [Maksimova IS](#), [Golushkov GA](#), [Evseev SIu](#).

Effects of low-intensive laser and alternating magnetic field on the course of the postoperative period were studied in patients with exudative reaction after extracapsular cataract extraction with implantation of intraocular lens (IOL). The results are analyzed for 148 eyes with early exudative reaction after IOL implantation (136 patients aged 42-75 years). The patients were observed for up to 6 months. The treatment efficiency was evaluated by the clinical picture of inflammatory reaction, visual acuity, and results of

biochemical analysis of the lacrimal fluid (the ratio of lipid peroxidation products to antioxidants in cell membrane). The course of the postoperative period was more benign and recovery sooner in patients of the main group in comparison with the control.

Vestn Oftalmol. 1997 Nov-Dec;113(6):17-9.

[New method of atherosclerotic macular dystrophies treatment]

[Article in Russian]

Basinskii SN, Krasnogorskaia VN.

The authors analyze the results of treating atherosclerotic maculodystrophies by direct laser phoresis. The method consists in insertion of a collagen infusion system in Tenon's space. Drugs (nicotinic acid or xanthinol nicotinate) are delivered to the posterior compartment of the eye through this system. Then a light guide is inserted in the tube and a 2-min session of low-intensity He-Ne laser exposure is performed at a wavelength of 630 nm, and 10 mWt/cm² flow power density (7 to 10 sessions per course). Clinical studies showed that vision acuity increased by an average of 0.08 diopters, or by 40% of the initial level, in 72% of cases. The peripheral visual field extended by an average of 51.4 degrees for 8 meridians in 95% of patients. The index of critical frequency of flashings fusing and the frequency-contrast characteristics improved in 85% of cases. The rheography improved by 34.5% of the initial level. A stable improvement was observed for 12 months after a course of direct laser phoresis in 97.5% of patients. Hence, the new method is simple and recommended for the treatment of atherosclerotic maculodystrophies.

Vestn Oftalmol. 2004 Nov-Dec;120(6):5-8.

[Dependence of the efficiency of low-intensity laser therapy in involution chorioretinal dystrophy on a used wavelength]

[Article in Russian]

Abramov MV, Egorov EA.

Seventy-five patients (75 eyes) with central involution chorioretinal dystrophy (non-exudative type at the progression stage) were followed up. All of them received low-intensity laser therapy. Irradiation of 890 nm, 644 nm and 500 nm was used in groups 1, 2 and 3, respectively. The study purpose was to compare the efficiency of wavelengths. Visual acuity and retinal sensitivity were determined. The results were evaluated immediately after treatment and in 3 months. The maximal improvement in visual acuity and retinal sensitivity was in those who received 890 nm laser therapy; 500 nm irradiation--a less pronounced effect and 640 nm--the lowest one. We attribute such

distribution of efficiency to a proliferation type of each irradiation range in the macular zone.

Vestn Oftalmol. 1996 Apr-Jun;112(2):25-6.

[Laser puncture combined with drug therapy in the treatment of primary corneal stromal dystrophy]

[Article in Russian]

[Maichuk IuF](#), [Orlovskaia LE](#), [Mal'-Alla DR](#).

A protocol of multiple-modality treatment has been developed, making use of laser puncture by stimulating infrared laser and drugs-aqueous 4% taufon and polygluquine taufon and artificial tears. The treatment proved to be highly effective: vision acuity stabilized, lacrimal production increased, and erosive cornea epithelialized.

The comparative analysis of using lowpower laser radiation, magnetic therapy and electrical stimulation in stabilization of visual functions in primary open-angle glaucoma.

Listopadove N A et al.

127 men with a primary open-angle glaucoma(POAG) were treated with either L/LT, magnetic therapy or electrical stimulation. The examination included visus, visocontrastometry and automatic static perimetry. The field of sight at an initial stage of POAG was 56% of laser, 52 for magnetic therapy and 27 for electrical stimulation. In the advanced stage the figures were 39, 37 and 18, respectively.

Vestn Oftalmol. 1998 Nov-Dec;114(6):6-9.

[Heparin inhalations and laser exposure of blood in treatment of patients with open-angle glaucoma]

[Article in Russian]

Balashova LM, Listopadova NA, Zaitseva NS, Teplinaskaia LE, Efimov VS, Grishin VL, Kantarzhi EP.

Comparative assessment of methods aimed at amelioration of the immunohemostatic processes in patients with open-angle glaucoma suffering from chronic vascular diseases showed that the most remarkable improvement of the visual functions and decrease of the level of circulating immune complexes in the blood were attained in the patients treated by heparin inhalations combined with intravenous laser exposure of the blood as against patients treated by one of these methods alone or traditionally.

Treatment of myopia with helium-neon laser stimulation.
Rabadanova M G et al.

A new technique of stimulating the ciliary muscle in cases of progressing myopia is described. The positive results have been confirmed through measurement of the intraocular pressure, refraction reduction and increase of visual acuity.

Vestnik oftalmologii. 1999;115 5): 20-21.

[The treatment of posttraumatic uveitis with low-intensity laser Radiation].

Inkova G A, Ionin A P, Ionina G I.

Eighty-two patients with severe posttraumatic uveitis (eye inflammation) which could not be treated by traditional antiinflammatory therapy were exposed to LLLT. The patients were divided into 3 groups: - infrared laser exposure semiconductor pulsed laser, - intravenous exposure of the blood to a He-Ne laser and - both treatments. The treatment efficacy was monitored by measuring lipid peroxides and superoxide dismutase in the lacrimal fluid. The treatment proved to be effective. The best results were attained by applying both methods of exposure, as was shown by sooner normalization of the content of lipid peroxidation products and activity of superoxide dismutase.

Vestn Oftalmol. 2001 May-Jun;117(3):29-31.

[Ultraviolet irradiation of blood in combined treatment of traumatic endophthalmitis]

[Article in Russian]

Aznabaev MT, Babushkin AE, Karabanova IV.

Thirty-five patients (35 eyes) with traumatic endophthalmitis were treated. Ultraviolet exposure of autoblood was used in 16 patients, the rest 19 were treated routinely (antibiotics, etc.). Use of ultraviolet exposure of the blood in combined therapy of traumatic endophthalmitis more rapidly (12.6 vs. 22.1 days) and effectively (93.7 vs. 68.4%) arrested intraocular infection and more often preserved the objective vision (31.3 vs. 10.5%).

Vestn-Oftalmol. 1996; 112 (1): 31-32

[Effects of low-intensity infrared laser irradiation on the eye An experimental study].

Prokofeva G L, Kravchenko E V, Mozherenkov-V P.

Prokofeva evaluated the doses of infrared laser exposure for the structures of the eye in rabbit experiments, and the potentials of such lasers in ophthalmology were assessed. Wavelength was 890 nm and doses varied from 0.0001 to 1.0 J/cm², corresponding to exposure duration of 0.3 to 45 min. Experiments were carried out on 20 animals. The right eyes were exposed, and the left ones were control. An increase of intraocular pressure was recorded at a dose of 0.1 J/cm² (4.5 min) and higher. Morphological examination showed dilated, well filled and newly formed vessels in the ciliary body and iris, as well as oedema and destruction of the external layers of the retina. Exposure to a dose of 0.05 J/cm² and lower did not lead to destruction of any ocular structures or increase of intraocular pressure. The maximal dose causing no side effects for the organ of vision was established at 0.05 J/cm².

Vestn Oftalmol. 2001 Sep-Oct;117(5):11-4.

[Comparative effectiveness of different methods of quantum hemotherapy in the treatment of juvenile diabetic retinopathy]

[Article in Russian]

Nedzvetskaia OV.

Effects of ultraviolet exposure of the blood (UVEB), intravenous laser exposure of the blood (IVLEB), and transcutaneous magnetic laser exposure of the blood (TMLEB) on ocular functions, microcirculation, and hemodynamics were studied in 79 patients with juvenile diabetic retinopathy. All these treatments had a nonspecific positive effect on the spatial contrast sensitivity, microcirculation, and choroid hemodynamics of the eye. Correcting mainly intravascular changes in the microcirculatory bed, quantum hemotherapy methods are pathogenetically justified in the treatment and prevention of tissue ischemia in diabetic involvement of the organ of vision. Results of noninvasive TMLEB with generalized and local effects were statistically similar to results of invasive UVEB and