

**Low Level Laser Therapy Of Male Genital Tract Chronic Inflammations**

Gasparyan L et al.

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Male genital tract chronic inflammations were treated by combinations of transdermal, transrectal (prostate gland) and intravenous HeNe laser irradiation. The energy of a 2 mW HeNe laser was applied via a light guide into a vein. The projections of the male genital organ and the inguinal areas were irradiated with a 890 nm 5W peak power cluster probe. For the transrectal prostate gland irradiation a 890 nm 15W peak power laser was used. 36 patients were given conventional medical therapy and another 36 were given LLLT in combination with medical therapy. Clinical and laboratory findings were statistically better in the LLLT group and relapse rate was lower. It is suggested that LLLT increases the local circulation and thus also improves the effect of antibiotics.

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**Semiconductor Laser Rays Therapy For The Treatment Of Chronic Prostatitis**

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**Introduction:** Chronic prostatitis (ACP) hasn't a universally successful therapy yet. A lot of studies demonstrated that LASER therapy has an anti-inflammatory effect on tissues and can increase lymphatic and venous drainage reducing inflammatory swelling. For this reasons in the early 90s we proposed a new therapeutic system for ACP using semiconductor LASER rays consisting of a gallium-arsenide diode. At the beginning an endorectal probe was used; then we invented a particular endourethral probe for laser therapy. This is a brief abstract of what we achieved during these years.

**Histological preliminary studies:** Many authors studied biological effects of LASER on animal tissues (1). Before clinical practice LASER therapy was tested on a cancer cell line (SW 626) in order to evaluate if laser stimulation could increase mitosis cell rate (2) and therefore have a carcinogenic-like effect. We didn't observe any change in mitosis cell rate. Another study (3) was made on rabbits to test in vivo any immediate histopathological damages and temperature rising in rectal ampulla using transrectal probe. Temperature rising was about 2/10th of a degree centigrade. No histopathological alterations of rectal wall and the prostate were observed with particular care of signs of swellig, flogosis or fibrosis.

**Materials and methods:** The gallium-arsenide diode in use has a wave lenght of 904 nm and a frequency of 3000 Hz. The Laser beam reaches the prostate with a special optic probe. This is divided in two sections: one contains the laser generator, the other has five optic fibers and it is screwed onto the first creating a single body of reduced dimensions. It can be sterilized and it is atoxic. We experimented 2 different approaches to the prostate: the first was an endorectal approach and the second was an endourethral approach. At the beginning we used a "Laser Super Sonic" machine with endorectal probe according to Strada. The treatment schedule was 1 treatment every two days (treatment's time of 12 minutes,wave lenght 3000 Hz)) for a total of 12 applications. Transrectal laser therapy was not indicated in prostate larger than 4 cm because his is the maximum depth of the laser beam's efficacy. Then we experimented an urethral probe (Med 130 Lasotronic â Wave lenght 820 nm, power 30 mW) in order to reduce energy leakage and increase patient's tolerability. In this case patients underwent 1 treatment every 3 days for a total of 8 applications (treatment's time of 4 minutes). From 1990 to 1999 more than 200 patients underwent this kind of treatment. We published results in previous studies (4-5).

**Clinical results:** More than 65% of the patients obtained a symptoms' relief even at 6 months after treatment. We observed a decrease in IPSS score and an improvement in maximum and mean urinary flow rate. We analyzed spermatic fluid before and after treatment (6) and we found

that there was an increase in total germinal cells count, improvement in motility and in morphology. Concentration of zinc, fructose and citric acid was higher after treatment (Zinc:9.5 mg% vs 5.5 mg%; Fructose: 64.5 mg% vs 58 mg%; Citric acid: 360 mg% vs 305 mg%). Prostate ultrasounds allowed to appreciate a consistent reduction of prostate volume (21.9 cc vs 29.9 cc), probably due to resolution of oedema. Conclusion: In our experience laser therapy for chronic prostatitis can be an effective treatment in improving symptoms and modifying clinical and sonographic parameters.

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### **Complex Laser Medicine Therapy Of Benign Prostatic Hyperplasia**

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Benign prostatic hyperplasia (BPH) is a common problem of aging men, affecting the majority of individuals aged 60 years and above. The expressed violations of urination accompanying BPH are largely explained by accompanying prostatitis too. So medicine treatment directed only on restoring of urination, infringing enlarged of prostate, is insufficiently effective.

We have developed a technique of laser-medicine therapy of the patients with BPH, which successfully was tested in 23 patients. The essence of a technique consists in simultaneous assignment of selective alpha 1-blockers tamsulasin and of local low-level laser therapy. On a background of a daily reception of tocopherol influenced by infrared laser radiation with the density of 6 mW/cm<sup>2</sup> on a perineum within 10 days, exposition - 10 min. A repeated rate - through 2-2,5 months.

Tamsulasin was taken in the usual dose - 0,4 mg per day. Simultaneous application of laser therapy and alpha-1-blocker tamsulasin achieved a relaxation of smooth muscles of prostate, removal of spasm, facilitation of outflow of a prostate secret and an inflammatory exudate, cupping of dysuria. The clinical observations, being available by us, have confirmed higher efficiency of an offered technique, than for want of use of monotherapy of tamsulasin.

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### **Near Results Of Treatment The Patients With Complicated Genitourinal Pathology With Application Of Low Intensive Laser Irradiation**

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The problem of managing chronic inflammatory diseases of genitals is rather urgent. It is connected with increase of serious complications, tendency to recurrence, resistance to treatment. We studied 28 patients (11 males and 17 females). The age of patients was 19- 48 (medium age was 31). On etiologically diagnosis the patients were distributed as follows: Chlamidia trachomatis was found in 21 cases, C.trachomatis and Ureaplasma urealiticum - in 5, ? trachomatis and Candida albicans - in 2. Chronic urethritis, prostatitis, cervicitis, cervical erosion, vulvovaginitis, endometritis, and pelvic inflammatory disease were prevailed. Antimicrobials, immunomodulators, vitamins, and symptomatic drugs were prescribed in combination with LILI. The laser therapy was conducted by He-Ne laser with the capacity of 25 mW. Males received intravenous or intraurethral LILI, 5-7 procedures. Females received LILI by the following techniques -intravenously, intraurethraly, intracervically and intrauterinely, 5-7 procedures, intravaginally - 10 procedures. Patients which received laser therapy were marked by pronounced clinical improvements - pain was soothed, acute urethral syndrome was arrested, discharge from the genitals was decreased. Blood and urine parameters normalized. On data from our institution the percentage of recurrence after treatment of patients with chronic

complicated genitourinal pathology without use of laser therapy was 10-15%. In the case of application of LILI the near results had shown 100 % clinical and microbiological curability.

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**Composite Application Of The Low-Level Laser Irradiation (LLI) And Of Bioregulating Peptu Prostatilen For The Treatment Of Sexual Disturbances Conditioned By The Chronic Prostatitis**

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The present research studies low-level laser irradiation the composite application of peptide bioregulator prostatilen and the LLLI for the treatment of the chronic prostatitis complicated by sexual disturbances. We have observed 32 patients at the age of 23-43 suffering from the chronic non-specific prostatitis. The patients have had numerous at-tempts to cure the disease and received various kinds of therapy. All the patients complained of the suppressed sexual function. Please note the fact that 12 patients received only this therapy, while the rest 20 underwent also a course of laser therapy which started after the 5-th injection of the medicine. Such semiconductor laser apparatus as "MOTYLEK-20" and "MURAVEY" (firm "Technica") producing the laser irradiation with the wavelength of 0,89 nm have been used. After the therapy which made use exclusively of prostatilen has been given, it turned out that in 50 % of the cases the erectile ability has been restored. The rapid ejaculation, however, remained in 75 % of the cases. The composite application of prostatilen and LLLI has improved the degree of the sexual activity more essentially. Here restoration of adequate erections has been found in 83,3 % of the cases. Only 25 % of the men still had the symptoms of the rapid ejaculation and of effaced orgasm. Thus, LLLI being applied to the prostate in the infrared range is successfully combined with the peptide bioregulator prostatilen for the treatment of the chronic non-specific prostatitis, as the medicine and the LLLI mutually reinforce the general medical effect. Such composite therapy substantially compensates the sexual function when the mentioned above pathology is observed.

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**Prospects For Preoperative Low-Intensity Laser Therapy In Preventing Postoperative Thrombohemorrhagic Complications In Adenomectomy**

[Article in Russian]

Neimark AI, Muzalevskaia NI, Neimark BA.  
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The authors analyse the results of preoperative preoperation of 143 patients with benign prostatic hyperplasia (BPH). Conventional preoperative preparation (antibiotics, uroantiseptics and phytotherapy) was used in combination with intravascular laser irradiation of blood (group 1, 30 patients), local laser therapy (transurethral and transrectal) (group 2, 27 patients), variation of laser methods (group 3, 28 patients) and alone (61 patients, group 4). Such preoperative preparation was aimed at prophylaxis of thrombohemorrhagic complications after adenomectomy. The efficiency of the treatment was assessed by hemostasis parameters. It was found that conventional anti-inflammatory therapy had a weak effect on hemostasis, the greatest positive effects being achieved with combined laser preoperative preparation. Hyperfibrinogenemia, thrombinemia and activation of XII + a-dependent fibrinolysis were stopped in patients of group 3. Because of less number of postoperative hemorrhages, hemotransfusions and transfusions of blood preparations were used less frequently, red cell parameters improved, exacerbations of chronic pyelonephritis occurred less often.

