



## **Low Level Laser Therapy & Arthritis - thyroid**

### **clinical research**

### **EFFECTIVENESS OF USING LASERTHERAPY IN THE TREATMENT OF AUTO-IMMUNE THYREOIDITIS**

J. Karachentsev Ukrainian Scientific-Research Institute for Pharmacotherapy of Endocrine Diseases, Kharkov, Ukraine

During last 10 years quantity of chronic auto-immune thyreoiditis (AIT) patients increased more than 10 times. This causes the search of new alternative methods of treatment. New pathogenic method of treatment AIT, which includes low-energetic laser radiation of thyroid gland (TG), was developed in Surgical Department. Transcutaneous radiation of TG projection was done on 21 patients with the help of semiconductor apparatus "Mustang-BIO" (Russia), wavelength 0,89  $\mu\text{m}$ , pulse regime. Energetically control was provided by automated system of integral and differential electropuncture diagnostics "Lotos". Dynamic investigations, conducted during 7 months after laserotherapy, showed decreasing sizes of TG and lymphoid infiltration centres with almost all patients, normalisation of thyroid hormones level against decreasing of substitutive therapy doses. When studying cellular and humoral immunity was found normalisation of T-suppressors and T-active lymphocytes against authentic decreasing of antithyroid anti-bodies (anti-bodies index to thyreoglobulin lowered from  $1,25 \pm 0,11$  to  $0,45 \pm 0,05$ ,  $P < 0,001$ , tomicrosomal antigen from  $0,69 \pm 0,05$  to  $0,41 \pm 0,03$ ,  $P < 0,01$ ). Normalisation of cellular and humoral immunity in the patients organism and also stop of auto-immune aggression processes and stimulation of reparative regeneration processes in TG proves that the method developed by us is pathogenic and may be recommended for AIT treatment.

### **RESTORATION OF STRUCTURE AND FUNCTION OF THYROID GLAND AND TIMUS OF RABBITS WITH EXPERIMENTAL AUTOIMMUNE THYROIDITIS**

I. Gopkalova Ukrainian Scientific-Research Institute for Pharmacotherapy of Endocrine Diseases, Kharkov, Ukraine

With the aim to find out mechanism of low-intensive laser radiation (LILR) effect on auto-immune thyreoiditis (AIT) pathogenesis we provided researches at 30 Shinshilla rabbits with experimental AIT (EAIT). Laser radiation was done by apparatus Mustang-BIO (Russia), wavelength 0,89  $\mu\text{m}$ , power 10 W in pulse, frequency 80 Hz, exposition on thyroid gland (TG) projection for 30 sec., every day, during 7 days. Studying of morphofunctional state of TG rabbits with EAIT in 14 days after laser therapy showed normalization of Klein index, height of follicular epithelium and coefficient of functional

activity restrain, and also practically all figures of main TG structural components relative volumes (RV). Thus lymphoid infiltration RV decreased from  $(10,1\pm 1,2)\%$  to  $(0,24\pm 0,2)\%$ ,  $P < 0,001$ ; stromes RV -from  $(15,0\pm 1,8)\%$  to  $(10,2\pm 1,1)\%$ ,  $P < 0,05$ ; grease cells RV - from  $(6,8\pm 0,5)\%$  to  $(4,3\pm 0,5)\%$ ,  $P < 0,01$ . Simultaneously RV of follicular epithelium increased from  $(10,0\pm 0,1)\%$  to  $(21,5\pm 2,8)\%$ ,  $P < 0,001$ , and RV of interfollicular epithelium increased from  $(4,2\pm 0,5)\%$  to  $(11,2\pm 1,5)\%$ ,  $P < 0,001$ . RV of crust and brain substance increased authentically in timus up to the norm limits at the account of decreasing RV of grease cells from  $(28,6\pm 2,3)\%$  to  $(3,9\pm 0,3)\%$ ,  $P < 0,001$ . Density of lymphocytes in crust and brain substance increased authentically. Thus LILR exerts favorable influence on the leading links of AIT pathogenesis: it stops auto-immune aggression in TG and stimulates reparative regenerative processes by restitutive type, against stop of involutive processes in timus and activation of lymphocitopoiesis.  
Histol. Histopathol. 14, 1067-1071 (1999)

Qlaser Wellness Solutions  
Michael F. Lagana, President  
708 Route 35 N., Neptune, NJ 07753  
732 866-4226  
Michael@Qlaserws.com