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Impact of laser and deep oscillation in the complex rehabilitation algorithm of patients with diabetic polyneuropathy and neuropathic diabetic foot

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Introduction: Diabetic polyneuropathy (DPNP) is a socially important disease with a serious complication-diabetic foot (DF).

Aim: The aim of our study was to evaluate the impact of LASER and Deep Oscillation in the complex neurorehabilitation (NR) algorithm of DPNP and neuropathic DF.

Material & Methods: We observed a total of 375 patients with clinically and electromyographically (EMG) proved DPNP (sensorimotor form, distal symmetric type) and neuropathic DF (Charcot type). Patients were randomized into three therapeutic groups (75 per group). The control was done before, during and at the end of the NR course (of 20 treatment days), and one month after its end. In all patients we applied a complex NR programme of physiotherapy and ergotherapy (analytic exercises, soft tissue techniques; low intensity physical activities); peloidotherapy (sea lye compresses); patient education. Group (gr) 1 received only this NR programme. In next groups a preformed modality was added: LASER in gr 2; Deep Oscillation - in gr 3. For database management we used t-test (ANOVA) and Wilcoxon signed rank test.

Results: The comparative analysis of the results demonstrates statistically significant beneficial effects on: irritative sensory signs (VAS), hypoesthesia; hypopallesthesia (vibroesthesiometry); trophic feet alterations (Shenaq scale); electroexcitability and electroconductibility of peripheral nerves (EMG). The results in gr 2 (Laser) were significantly better concerning VAS and Shenaq rate; and in gr 3 (DO)-on vibration sense and pain.

Conclusion: LASER therapy and Deep Oscillation must be part of the NR-algorithm in DPPNP-DF-patients. Laser improves pain and trophic foot alterations. DO influences sensibility (tactile and vibration).

Biography

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