HYDROGALVANIC BATHS IN THE TREATMENT OF LUMBOSACRAL RADICULOPATHY DUE TO DEGENERATIVE DISC DISEASE

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Introduction. Hydrogalvanic baths is a method of combined application of warm fresh water and electric current. Mechanism of therapeutic action is based on synergistic effect of two therapeutic agents. The first mention about therapeutic use of hydrogalvanic baths dates back to 1802. Afterwards, both technique and technical equipment of the method were developed. Several studies have shown the efficacy of hydrogalvanic baths for the treatment patients with rheumatoid and gouty arthritis, fibromyalgia, ankylosing spondylitis and diabetic angiopathy. Nevertheless, an amount of scientific publications and also clinical researches is very scant. At the moment one of the most prospective applications is treatment of lumbosacral radiculopathy due to degenerative disc disease.

Patients and methods. For the moment this is an intermediate stage of prospective, randomized study. It is suggested that 60 patients will be included (30 patients of active group and 30 patients of control group). From November 2016, 20 patients (12 women and 8 men) with lumbosacral radiculopathy lasting more than 3 months due to degenerative disc disease were included in a prospective study of the hydrogalvanic baths. The mean (range) age of patients was 43 (25-65) years. Patients with a emerging infection diseases, a pacemaker or other metal implants, as well as concurrent pregnancy, malignancy or physiotherapy during the study, were excluded. The medical history and previous treatments were documented (drugs, physiotherapy, or a combination of therapies). During treatment, the patients were immersed into full bath of fresh medium-temperature water (37-38 Celcius degrees). A procedure was provided by current flow originating from 3 pairs of electrodes. Electrodes are placed onto inner bath wall transversally. The generator created diadynamic currents with a frequency of 100 Hz. The current intensity was gradually increased up to the limit of tolerability as indicated by the patient (average 200-350mA). Patients were treated daily for 15 min, the number of sessions was 10. A DN4 questionnaire, PainDetect, Oswestry Disability Index (ODI), the Short Form-36 (SF-36), Beck Depression Inventory (BDI) and a visual analogue scale (VAS) were completed at baseline, at the end of the treatment (the last day of treatment) and 3 months after the end of treatment.

Results. All patients were able to attend all sessions. Pain syndrome of 17 patients was significantly reduced clinically. It was confirmed by questionnaires analysis. All patients noticed sensory improvement. The therapeutic effect was observed after the 3d-4th procedure. No one experienced adverse events. Variables were checked for abnormal distribution using nonparametric tests. The Wilcoxon’s matched pairs test was used to examine differences between baseline and the end of treatment (14th day) with p<0.05 considered statistically significant in all analyses. Median (25%-75%) was calculated for each of the primary and secondary variables. The VAS score (typical pain level) was reduced from 5 (4-5) to 3 (0,5-5,5). The VAS score (pain level for the point of completion of the questionnaire) was reduced from 4 (2,5-4,5) to 2 (0-3). Changes of DN4 questionnaire were from 4 (3-5,5) to 2 (0,5-3). Changes of PainDetect were from 8 (6,5-9,5) to 6 (2,5-10). The BDI score was reduced from 13 (4-16,5) to 9 (3-11). The ODI changes between baseline and the end of treatment were from 32% (22-44) to 15,5% (8-36).

Conclusion. From the these results, hydrogalvanic baths seemed effective on lumbosacral radiculopathy due to degenerative disc disease. It could be confirmed that hydrogalvanic bath has the efficacy and safety for patients. It is necessary to continue clinical research and evaluate long-term results in comparison with control group patients for proving of treatment efficacy.