

# REHABILITATION OF PATIENTS WITH COMBINED PROFESSIONAL PATHOLOGY

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## TOPICALITY

Effective way of reducing the professional vertebro neurologic diseases – is improvement of working conditions and the expansion of primary prevention [1].

In this connection, there is a need to develop therapeutic and rehabilitative measures, namely in combined forms of occupational pathology and the creation of new and more effective treatment options for diseases of the peripheral nervous system, since the vertebral pathology and vibration disease are diseases of the peripheral nervous system, as well as massive comprehensive

survey showed that the professional pathology serves as a “mask” of heavy somatic diseases, resulting in patients not timely diagnosis and adequate treatment is not carried out that generally affects the “quality of life” of patients [2, 3]. According to [4], physical exercise influence the trophic function of the nervous system, there is a reflex change in the trophic, adequate to functional irritation. Effect of exercise manifests itself in the challenging and normalized their influence on the regeneration processes of damaged tissues.

In combination with acupuncture is very effective use of autogenic training, breathing exercises, special physical exercises.

**THE AIM** of the study was: evaluation of the effectiveness of the complex of rehabilitation measures for patients with combined professional pathology (vibration disease and vertebral pathology) – combined pathology.

## MATERIALS AND METHODS OF RESEARCHING

Rehabilitation activities were carried out on two groups of patients associations Coal Department Stock Company Mittal Steel Temirtau with combined

professional pathology with moderate-marked pain syndrome, which passed examination and treatment at the National Centre for Occupational Hygiene and Occupational Diseases MH RK. The average age of patients was  $47,7 \pm 12,4$ , seniority  $21,4 \pm 2,43$  year.

Group 1 (20 person) – acupuncture with treatment-sports complex (therapeutic exercise); Group 2 (20 person) – physiotherapy + exercise therapy. In addition, treatment included traditional comprehensive treatment, including medicines (nonsteroidal anti-inflammatory drugs (NSAIDs)), cardiovascular drugs and drugs improve nerve conduction) (traditional therapy), which was performed in both groups.

Our patients underwent acupuncture on the three zones (two pairs of symmetric points in common), segmental area (2 pairs of symmetric points in common), on-site pain (one pair general, 2 pairs of segmental and 1–2 pair of symmetric local points). Therapeutic exercises done comprehensively to our patients (an exercise program has been distributed in the form of reminders for each patient to better fixation).

Evaluating the effectiveness conducted by the following indices of rheovasography: time of rapid blood flow, regional blood volume, minute pulse, the elastic modulus, an index of rapid filling, rheographic indicator of venous outflow.

And also take into account the parameters characterizing the components of neuromuscular transmission: the M-response amplitude of the motor fibers for the peroneal and the tibial nerve, the rate of impulse conduction in motor and sensory fibers of the peroneal and tibial nerves, residual latency.

Statistical data processing was carried out according to standard methods, using specialized software for statistical analysis – tabular processor «Microsoft Excel» and the program «STATISTICA 6.0» (company StatSoft, USA). For comparison of intergroup data, the method of nonparametric statistics U Mann-Whitney test for independent variables was used.

## RESULTS OF THE RESEARCH

The results showed the rationale for therapeutic and preventive measures acupuncture + therapeutic

exercise + drug therapy, which leads to a reduction of pain, relieve muscle tension in the back, blocking the pain impulses traveling from the periphery, at various levels of the central nervous system, promote activation of functional reserves of an organism. Muscular work, enhancing the dominant motor analyzer, changes the function of internal organs, particularly the circulatory system and respiratory system. Work of skeletal muscles in the light of the concept of motor-visceral reflexes should be considered as a stimulator and regulator of responses, particularly the circulatory system. Dosage muscle activity in the application of physical exercise should be regarded as a factor contributing to the restoration of vegetative functions, violated by the disease. It is known the regulatory influence of moderate exercise on the function of the cardiovascular system. This influence is expressed in increasing energotropic and trophotropic effects on the heart muscle, mobilization of the vascular system and extracardiac factors of blood circulation and blood flow device as a whole to the needs of exchange [5–7].

In the course of treatment and prevention activities have revealed the following. In individuals with a moderately pronounced syndrome after correction (acupuncture + therapeutic exercise + drug therapy) significantly increased the indicators reflecting the tone of large arteries: a time of rapid filling of the alpha 1 (CI 0,05–0,1, P <0.05), more from pain; decreased rate of alpha / RR (modulus), (CI-15,6–23,4, P <0.02), slightly higher from the pain. Increased the index of rapid filling, especially from pain (CI 51,1–58,4; P <0,001), improved venous outflow PBeta more of the vessels and the femoral pain syndrome (CI 1,04–2,6). Improved the indicators characterizing the intensity of arterial blood flow in the form of increased minute pulse of regional blood volume, with both sides in the vessels of hip and thigh (CI 2,04–2,6, P <0.001, P <0.02), significantly increased the parameters reflecting volume pulse blood filling – rheographic index (CI 0,3–0,4, p <0,001). As can be seen from reovasographical data, improved all main indicators – pulse blood filling, vascular tone, elasticity of the vascular wall and the venous outflow.

Found that, in the course of treatment significantly improved indicators of the components of neuromuscular transmission: the M-response amplitude of the motor fibers – the effectiveness of treatment 56,6–42,8% (CI 8,7–10,1; P <0.001) in peroneal and tibial nerve respectively; increased speed of the pulse motor 28,6–19,3% (CI 3,5–4,4, p <0.02) and significantly by touch (42,3–54,9%) fibers of the peroneal and tibial nerves (CI 34,3–47,01, P <0,001), slightly smaller, but also improved performance on the residual latency 61.1–23.5% (CI 31,1–41,6; P <0,001). High

efficiency of acupuncture, subject to standard rules is achieved only when individual choice points of impact, which we used for the correction. Acupuncture was aimed at correcting the tissue perfusion, muscle relaxation, as well as blocking the pathological extero, proprioceptive and interoceptive impulses.

In individuals with a combined pathology with a moderately pronounced syndrome treated with physiotherapy + drug therapy showed significant improvement in indicators of the intensity of the arterial blood flow in the form of increased minute pulse of regional blood volume, with both sides in the vessels of hip and thigh (CI 2,04–2,6, P <0.02), increasing the index fast filling more of the pain (CI 46,7–53,6; P <0.001) increase in the volume pulse blood filling – (rheographic indicators) (CI 0,3–0,4 P <0,001). Improving the condition of patients with combined pathology data confirm electroneuromyographic research, improvement of which was less pronounced in the group treated with physiotherapy + therapeutic physical exercises + drug therapy.

Patients treated with physiotherapy + therapeutic physical exercises + drug therapy data electroneuromyographic research also showed improvements, which were less pronounced, but significant. Found that in patients with combined pathology training with moderate syndrome of increased number of functioning motor units in the muscle (according to the amplitude of the M-response, CI 8,7–10,1; 43,3–44,6; P <0,001), improved the flow of demyelinating processes, as evidenced by the performance of speed of the pulse of motor and sensory fibers (CI 34,3–47,0, P <0.001), improved the state of the terminal unmyelinated fibers on indicators of residual latency fibular and tibial nerve (CI 3,5–4,4, 4,7–5,6, p <0,001).

As seen above, the most positive changes after the correction are noted in patients taking the physiotherapy + therapeutic physical exercises + drug therapy. This can be explained by the fact that in the integumentary tissues, and especially in the skin, muscles, tendons and ligaments are local zones of innervation of the maximum used in the practice points (biologically active point). The latter have a definite innervation liaison with relevant bodies, systems, and sites that provide focus on the impact of these structures during stimulation of these points.

Thus, the results of our treatment of persons with combined pathology we achieved a guaranteed functional outcome. Those receiving the correction of the physiotherapy + therapeutic physical exercises + drug therapy, more susceptible to the positive dynamics, not only at the end of the course the basic treatment of spine, but in the late periods after treatment of spine and are more durable and long lasting

in nature, which greatly improves the quality of life of these patients.

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