

# **9<sup>TH</sup> MULTIDISCIPLINARY INTERNATIONAL Conference of Biological Psychiatry**

## **«Stress and Behavior»**

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### **CONFERENCE ABSTRACTS**

#### **6. GENERAL QUESTIONS: PSYCHIATRY OF STRESS**

##### **ELECTROPHYSIOLOGICAL ALTERATIONS IN MEN WITH PROFESSIONAL RADICULOPATHY**

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The problems of efficiency of prevention of professional lumbosacral radiculopathy is the least studied in vertebro-neurology, often determined by stable high abundance and relapsing nature. Therefore, it is necessary to assess functions of the peripheral motoric systems in some professions with high risk of such disorders. For this, we studied morbidity and pathogenesis of chronic radiculopathy in Karaganda coal region on 225 patients (30–52 y.o), miners with >5 years of experience. Control group included 41 healthy non-miners (17–30 y.o). Electromyography (EMG) was conducted on 4 and 8-channel electromyograph. For patients with a static-dynamic load in combination to chattering, the clinic flows past roughly, more often the pain syndrome with more expressed propulsion violations and impaired lumbosacral system developed. For sick men with a static-dynamic load, the clinic flows past smaller percent patients with a pain syndrome is less expressed, the radicular syndrome flows past with a lesion in the main sensing fibres, and the lumbar part is struck. EMG biopotential amplitudes of agonists in patients with lumbosalgia of forward and back muscles were higher than in the second group. Synergists and antagonists prevail both in the forward and back groups of muscles of the lower extremities. We also showed a considerable reduction of miopotentials of agonist and antagonist in forward and back muscles in both groups vs. controls. Increased synergist activity was higher in the first group (vs. controls), and forward group of muscles — in the second group of patients. Thus, the considerable decrease of amplitude biopotentials in agonists and antagonist forward and back muscles was accompanied by increased amplitude of synergists, compared to the control group. Amplitudes of synergists and antagonists also prevailed for the second group, and in the back muscles of the lower extremities (except synergists of back group, which prevails for the first group). Comparing EMG data with the respective controls, the considerable decrease of agonist and antagonist activities were seen in forward and back muscles, especially in the second group. EMG amplitude of muscular biopotentials in patients with chronic radiculopathy with pain syndrome increased in the second group. Our study showed that the most robust differences are detected between the groups in the parameters describing excitability centers in the neuromuscular system.