

PECULIARITIES OF NEURO-VEGETATIVE SUPPLEMENT OF WORK IN PERSONS WITH DIFFERENT LEVEL OF MENTAL EFFICIENCY

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The issues of functional working state (FWS) is relevant today for psychophysiological support and professional selection of both civil and military specialists of the operator's profile. Wide application for assessing neuro-vegetative component of the FWS has become the method of mathematical analysis of heart rate variability (HRV). The relationship between energy (neuro-vegetative) and information (quality of information processing) components of the FWS is still insufficiently explored question for practical needs of the physiology of labor with forecasting levels of mental efficiency (ME). The aim of this study was to examine the relationships between the functional activity of parts of the autonomic neuro-humoral regulation (the HRV) and indicators of the ME. Considering the direction of the correlation between the HRV and ME in individuals with different levels of integral indicator of mental efficiency (IIME), one can notice their similar nature in individuals with low and middle ME levels. In individuals of these groups is the presence of a positive correlation between indicators of ME and specific activity of subcortical sympathetic ergotropic ganglia (VLFn), an index of activation of subcortical centers (VLF/HF), as well as the presence of negative correlations with ME of absolute (HF) and specific (HF_n) parasympathetic activity. In addition to these relations, in individuals with low IIME level were shown that ME indicators were positively correlated with an index of autonomic balance (LF/HF) and negatively correlated with specific activity of baroreflexes regulation (LF_n). In persons with average value of IIME was shown positive correlation between the amplitude of the mode (AMo) with ME indices. It was shown that in individuals with high IIME the direction of correlations between the HRV and ME were different, compared to persons with average and low level of IIME. So, it was observed positive correlation of ME indicators with absolute activity of the parasympathetic regulation (HF), total adaptive capacity (SDNN) and negative correlation with mRR, AMo, VLF, VLF_n. Thus, in individuals with low and medium levels of mental efficiency, the ME is positively correlated with specific activity of suprasegmental subcortical ergotropic ganglia and negatively correlated with absolute and specific activity of the parasympathetic regulation. In individuals with high level of mental efficiency, the ME was positively correlated with the absolute activity of the parasympathetic regulation and negatively correlated with absolute and specific activity of suprasegmental subcortical ergotropic ganglia. In our view, a positive relationship between mental efficiency and the activity of the parasympathetic regulation, which is observed in the group of patients with high level of ME, may be an indication of the great role of the selective processes of inhibition in the cerebral cortex in ensuring of the FWS. However, this hypothesis requires experimental confirmation that could be the next step in the development of these studies.