PATHOLOGICALLY INCREASED CENTRAL REGULATION OF THE HEART RHYTHM – A DIAGNOSTIC BIOMARKER

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Pathologies with affected heart regulation belong to a challenging problem in modern medicine. The problem is, on the one hand, because of the peculiarities of a fast shift from the medullar to the central regulation of the heart rhythm, and on the other hand, lack of methods to diagnose this state in time. This study aimed to find out whether the recently described pathological signs analyzing a cardiorhythmogram can be characterized an increased cardiac regulation. Material and methods. In the study 330 individuals were included. Individuals were of both genders and average age of 45.5± 11.0 years. The main group consisted of 150 patients with arterial hypertension. The control group was made up of 180 healthy individuals. In all individuals, the steady-state cardiorhythmogram was analyzed, mainly the new pathological signs. In healthy individuals a baseline measurement was done, followed by a second measurement after an induced state of increased central activity done in several stages. The state was induced by solving a complicated math task. Results. In all 180 healthy individuals the signs for an increased central modulation of the heart rhythm, when solving the math task, compared with the baseline measurement $p < 0.01$. From 150 patients with arterial hypertension, in the steady-state cardiorhythmograms of 138 patients the signs of increased central cardiac regulation $p < 0.01$, like in healthy individuals during solving a math task, were observed. Conclusions. The analysis of the recently-described pathological signs in cardiorhythmograms characterizes pathologically increased central modulation of the heart rhythm. Detecting these in healthy individuals during steady-state should be regarded as biomarkers for cardiovascular risks, like arterial hypertension.

References

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