RELATIONSHIP BETWEEN OF FREE CORTISOL IN SALIVES AND POWER OF EEG RHYTHMS IN THE STATE OF QUIET WALKING

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In 53 subjects of both sexes aged 12 to 35 years (21,55±4,05) the peculiarities of the spectral characteristics of electroencephalogram (EEG), cortisol in saliva and indicators of the current psychophysiological state were investigated. Triple measurement (at 7.00, 13.00 and 23.00) content of free cortisol in saliva was performed using the method of immune-enzyme analysis. For a quantitative assessment of the current psycho-physiological condition, including anxiety, mental fatigue, mental strain, emotional stress, the amount of autogenous deflection, instability of regulation of vegetative coefficient, a measure of health was used the technique of color psycho-diagnostics "Pairwise comparison", which is a modified version of the brief Lüscher color test. During the experiment, a four-time recordings were made of EEG in a state of quiet wakefulness with the eyes closed in accordance with the International 10–20 system. There was a tendency to significant association of cortisol levels in saliva with the vegetative coefficient. The interactions of the content of free cortisol in saliva with a spectral power density (PSD) of the EEG rhythms recorded in the state of quiet wakefulness with the closed eyes were studied. It was revealed that the structure of the observed relationships depended on the time of collection of biological material. The greatest number of statistically significant relationships of PSD EEG with the values of the content of free cortisol in saliva collected immediately before the beginning of registration of EEG activity detects PSD the alpha rhythm of the EEG. Most of the close correlation of the level of free cortisol in saliva with the value of PSD of the alpha rhythm of the EEG manifested in the posterior-temporal leads of both hemispheres.

It was shown that the total deflection, instability of regulation and the health score correlated negatively with cortisol levels in saliva collected at 7:00. Thus, a correlate of stress level can be considered as low-intensity alpha rhythm of the EEG.

***Keywords*:** cortisol, the spectral power density of EEG, the state of quiet wakefulness with the closed eyes.

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