

Materials of Conferences

**DYNAMIC PARAMETERS
OF CARDIO-RESPIRATORY
SYNCHRONISM STUDENTS
AT DIFFERENT LEVELS STRESS**

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The objective of this work is to increase the efficiency of methods of the student's stress-resistance valuation according to parameters of heart-breathing synchronism in order to optimize the educational process and improve the professional selection of specialists for the catastrophe medicine service.

The observation was carried out upon 28 students that were divided into 3 groups according to the parameters of heart-breathing synchronism before and after the impact of stress factor.

Parameters of heart-breathing synchronism did not alter reliably within the first group (5 persons, 17,9 %). The width of the synchronizing range was the biggest among them and the duration of the development of the minimum boarder was the smallest. The alterations of the parameters in response for the impact of the stress factor showed us good functional-adaptive abilities of the organism and lack of those implies the high level of stress-resistance.

Among the persons of the second group (11 persons, 39,3 %) the width of the synchronization range decreased of 22,4 % and the duration of the development of heart-breathing synchronism on the minimum range border had an increase of 13,6 % in comparison with the internal values. The synchronizing range width among those being tested was smaller and the duration of the development on the minimum border was bigger than the corresponding parameters of the first group. The second group was referred to persons with moderate stress-resistance level.

The greater alterations of the heart-breathing synchronism parameters were observed within the third group (12 persons, 42,8 %). The synchronizing range width decreased of 29,9 % and the duration of the development of heart-breathing synchronization of the minimum synchronizing range border increased of 28,9 %. They had the smallest

synchronizing range width and the biggest development duration. The decrease in the synchronization range and the decrease in the duration of its development testifies for the decrease in functional-adaptive abilities of the organism (V.M. Pokrovskiy, 2007). Their stress-resistance level was estimated as low.

As we compare the data of the stress-resistance level identification according to the parameters of heart-breathing synchronism and with help of psychological testing according to the frequency of occurrence among the tested the persons with moderate stress-resistance level were on the first place, on the second – those with low level, and on the third level – those with high level. There was no complete coincidence.

The group with high level of stress-resistance consisted of phlegmatic persons, sanguine persons, phlegmatic/sanguine persons, and phlegmatic/melancholic persons. Wide range of the synchronization and the smallest duration of the development on the minimum range border were typical among those persons. The moderate and low stress-resistance group consisted of melancholic persons, choleric persons, sanguine/choleric persons, and melancholic/choleric persons with narrow synchronization range and the biggest duration of the development on the minimum synchronization range border.

As we know, the widest range of the heart-breathing synchronism is present with phlegmatic temperament type, it is less displayed with sanguine and even less – with melancholic type (I.I. Borisova and co-authors, 200 E.G. Potyagaylo, V.M. Pokrovskiy 2003). The narrowest range width was observed with choleric temperament type. In our research the levels of stress-resistance according to the parameters of heart-breathing synchronism were correspondent to the personality types. The high level of stress-resistance that was defined by the method of psychological testing did not always coincide with the personality types, for which they are determined genetically. Thus, 2 phlegmatic persons and 1 sanguine person were referred to moderate level of stress-resistance.

The comparison of the stress-resistance level of the students according to the parameters of heart-breathing synchronism and the data of definition of emotional stability gave us absolute correspondence. Among the students with emotional stability that is also genetically determined for the high level of stress-resistance there were 3 persons less (they were defined as persons with moderate

level of stress-resistance according to psychological testing), that is data of the definition of stress-resistance level according to psychological testing were contradiction to common knowledge.

According to J. Streliya (1982) the personality types are divided into the most adaptive (phlegmatic and sanguine types) and the least adaptive (melancholic and choleric types), the students with high stress-resistance level turn out to be the most adaptive and the persons with moderate and low stress-resistance level – less adaptive. When comparing the levels of stress-resistance among students, that was defined according to heart-breathing synchronism parameters with the adaptive abilities of the tested a complete correspondence was observed. But when comparing the stress-resistance level that was defined by psychological tests with the adaptive abilities of the tested there was no complete correspondence. Three students of the most adaptive group were defined as persons with moderate stress-resistance level.

Among the students with high level of stress-resistance according to heart-breathing synchronism parameters low level of anxiety was observed, among those with moderate and low level – moderate and high level correspondingly. While defining stress-resistance level among students by psychological testing, no complete coincidence between stress-resistance and anxiety levels was found.

Thus, for students, the comparison of heart-breathing synchronism parameters with the personality types, neurotism, adaptive abilities, the anxiety level, and stress-resistance parameters showed us, that the results of heart-breathing synchronism probes turn out to be more precise than psychological testing data.

On the other hand, analysis of the heart-breathing synchronism parameters showed us that the students with high stress-resistance level had the widest synchronization range and the smallest duration of its development on the minimum range border. With the moderate level the range width was smaller, and the development duration – bigger, and with the low level of stress-resistance the synchronization range width was the smallest and the duration of its development was the biggest.

Thus, the probe of heart-breathing synchronism can be used for objective integral estimation of stress-resistance level among the students. It is more informative than psychological methods.

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CORRELATION BETWEEN THE PROSTATIC STRUCTURE AND SOME INDICATORS OF THE NONSPECIFIC BODY RESISTANCE AND SYMPATHOADRENAL ACTIVITY

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Gland inflammation plays an important role in the pathogenesis of fibrocystic prostatopathy and local adenomatosis against the background of the age-specific discoordination of the central and peripheral endocrine organs. The adenomatosis and inflammation provoke a number of clinical symptoms, which considerably inconvenience patients causing a constant psychological and emotional stress. Chronic growth of active catecholamine concentration (CA) and adrenal cortex hormones aggravate the age-dependent hormonal misbalance and reduce the functional activity of immunocompetent tissue, monocyte-phagocyte system and neutrophilocytes, which in its turn reduces the nonspecific body resistance. One of the indicators of the functional condition of a sympathoadrenal system is the CA content in erythrocytes; and one of the elements of the nonspecific body resistance are the nonenzymatic cationic proteins (NCP) of neutrophilocytes, which determine to a large extent their bactericide function. They can be also classified as signal-regulatory peptides.

This research consisted of two parts: morphological and clinical. The first part of the research included the histological and morphological evaluation of the structural changes in 20 prostate glands obtained from dead persons aged between 50 and 70 years, who suffered from different pathologies and according to anamnesis (medical report data), such associated diseases as nonmalignant hyperplasia of prostate gland (NHPG) and NHPG complicated by chronic prostatitis (CP). The clinical part was aimed at determining the NCP content in blood neutrophilocytes and CA concentration in erythrocytes, followed by calculating an average cytochemical coefficient (ACC) in 28 patients with NHPG, including the 8 patients with CP. The cytochemical research methods used for the evaluation, were adjusted to the age group of the dead material donors.

In the majority of cases, histological changes in prostate gland with NHPG involved stromal hyperplasia with the overgrowth of fibrous tissue and new growth in blood vessels, or complete hyperplasia with both proliferative glandular and