THE GLUCOSE-6-PHOSPHATE DEHYDROGENASE ACTIVITY IN THE TESTES AT THE EXERCISE STRESS VARIOUS REGIMES

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The glucose oxidation pentosophosphate pathway has its great vital significance for the exchange processes in the testes. The glucose-6-phosphate dehydrogenase (G6PDH; KF 1.1.1.49) is one from the key enzymes of the given metabolic pathway. So, the main paper's goal – is to be studied the G6PDH in the rats' testes at the exercise stress and the physical activity various regimes.

This experiment has been carried out at the 40 male rats, having had their 240 ± 20 gr. mass. So, the exercise stress and the physical activity influence upon these rats has been studied by the forced their swimming method with the 10% load from the animal's body mass. In the end, all these animals have been divided into the four, equal in number, groups (n = 10). The first group has been made up the intact rats. The second group – the control ones, which swam without any load. The third group – the rats with the exercise stress and the physical activity optimal regime. The fourth group – with the exercise stress and the physical activity excessive regime. So, the total protein content and the G6PDH activity by the $NADP^+$ recovery rate have been defined in the erythrocytes and in the testes. Then, the NADPH concentration increase has been registered at the 340 nm wavelength during the reaction. The obtained data statistical processing has been carried out with the Student's test (t) application. The communication measurement between the variables has been made by means of the correlation analysis by Spierman ®.

All the received data during the experiment are being testified on the fact, that the exercise stress and the physical activity optimal regime is not considerably influenced upon the G6PDH activity, as in the erythrocytes, well as in the testes. So, the exercise stress and the physical activity excessive regime has been resulted in the G6PDH activity decrease in the fourth group rats' erythrocytes for 52% (p = 0,040), for 64% (p < 0,001), and for 49% (p = 0,006), in comparison with the similar index at the first, the second, the third groups' rats, correspondingly. So, the G6PDH activity of the fourth group has been for 44% (p = 0,001), and 43% (p < 0,001) lowered in the rats' testes, as compared with the similar index at the first, the second groups' rats, correspondingly. Thus, the correlation coefficient between the G6PDH activity has been made up r = 0,489 (p = 0,026) at the excessive exercise and the excessive physical activity in the erythrocytes and in the testes.

Thus, it has been found out, that the exercise stress and the physical activity optimal regime is not considerably influenced upon the G6PDH activity in the testes during the carried out study and the research. So, the exercise stress and the physical activity excessive regime has been resulted in the G6PDH activity decrease in the erythrocytes and in the testes, that is being testified to the pentose cycle inhibition under all these conditions. Then, it is quite possible to be viewed and to be determined on the pentose cycle intensity in the testes by the G6PDH activity in the erythrocytes.

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PECULIARITIES OF GYNAECOLOGICAL ENDOCRINE-DETERMINED PATHOLOGY INHERITANCE WITHIN TEENAGE GIRLS

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In recent years a steady increase in endocrine-determined gynaecological pathology within teenage has been registered. A search for new effective approaches to therapy and rehabilitation of girls with described pathology is closely linked to further deepening of our knowledge on disease emergence mechanisms and definition of genetic and environmental factors in its formation.

The goal of our work is to find out the type of gender development delay (GDD), oligomenorrhea (OM), pubertal uterine bleedings (PUB) inheritance type and contribution of genetic and environmental factors in the development of these nosological forms.

Family anamnesis of 356 teenage girls of 13-17 years has been studied. All patients had no less than one sister older than 17 years. In order to test the correspondance of the pathology to the monogenic inheritance segregation frequencies were calculated according to Weinberg formula, correspondence to multi-factoral inheritance was calculated according to correlation coefficients between relatives of the 1 kinship degree in accordance with quasicontinuous and alternative model. Correlation coefficients were used to decompose total phenotypical dispersion on environmental and genetic part.

Based on segregation frequencies calculation and comparison of difference between empiric and theoretical expected frequency of GDD, OM, and PUB inheritance hypothesis of monogenic inheritance was declined. The calculation of quasicontinuous GDD, OM, and PUB inheritance showed us the discrepancy of these models. While examining alternative hypothesis it was defined that for GDD genotypic component equals 0,75 and environmental – 0,25, while for PUB genotypic component

equals 0,3 and environmental – 0,7, for OM – 0,17 and 0,83 correspondingly.

Thus it is determined that GDD, OM, and PMK are multi-factoral diseases, and for OM and PUB an impact of environmental factors turns out to be the most important and for GDD – genetic factor is the determinant one.

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P CHRONIC PIELONEPHRITIS, ARTERIAL HYPERTENSION AND OXIDATIVE MODIFICATION OF THE BLOOD PLASMA PROTEINS

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Oxidative modification of the blood proteins is stress-marker in various types of pathologies.

The aim of this work was study protein oxidative modification (POM) in blood plasma of patients with chronic pyelonephritis (CP) and chronic pielonephritis associated with arterial hypertension (CP+AH).

We examined 71 patients (age 19-59 years) including 40 patients with chronic pyelonephritis and 31 patients with chronic pyelonephritis associated with arterial hypertension. Control group consisted from 25 healthy persons.

There were examined basic and neutral classis of dinitrophenylhydrazons (KDNPG and ADNPG) in blood plasma which are catabolits of protein oxidative modification and its defined by R.L. Levine methods.

Shown data demonstrated same alterations of free-radical oxidations of proteins in blood plasma at patients with chronic pielonephritis and chronic pielonephritis assotiated with arterial hypertension.

According to these data KDNPG level of neutral class at patients with chronic pielonephritis decreased in 2,3 times than in control group and KDNPG level of basic class decreased in 2,5 times.

More significant alterations of POM data were fixed at patient with CP+AH in blood plasma in compare with control. Thus, the level of KDNPG of neutral class was reliably decreased in 3,1 times than in control and the level of KDNPG of basic class was lower in 4 times in compare with control.

ADNPG in blood plasma was decreased in 1,8 times for neutral class at patient with CP than control, but the level of basic class of ADNPG in plasma no significant modified compare control.

There were fixed a deep oxidative products falling both basic and neutral classis of ADNPG in the next patients group with CP+AH. So, the content of neutral class of ADNPG was lower than control in 2,9 times in blood plasma at patient with CP+AH and the content of basic class of ADNPG was lower in 2 times than control.

The POM data (basic and neutral KDNPG) were reliably lower in 1,4 and 1,6 times at patient with CP+AG in compare with CP. The content of neutral and basic classis of ADNPG were reliably higher in 2,5 times in blood plasma at patients with CP than in patient with CP+AH.

As a whole, according to our data it was fixed the developing of deep oxidative stress with one-directed modifications of free radical proteins at patients with chronic pielonephritis and chronic pielonephritis assotiated with arterial hypertension

The decrease of POM level by our opinion was determined by circulation of oxidative proteins in blood plasma which are indifferent to reaction with carbonyl catabolits.

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