МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

ЗБІРНИК ТЕЗ

міжвузівської конференції молодих вчених та студентів

МЕДИЦИНА ТРЕТЬОГО ТИСЯЧОЛІТТЯ

м. Харків - 2016

УДК 61.061.3 (043.2)

ББК 61 (063)

Медицина третього тисячоліття: Збірник тез міжвузівської конференції молодих вчених та студентів (Харків - 19 січня 2016 р.) Харків, 2016. – 518 с.

За редакцією професора В.М. ЛІСОВОГО

Відповідальний за випуск проф. В.В. М'ясоєдов

Затверджено вченою радою ХНМУ
Протокол № 12 від 17 грудня 2015 р.

Оглавление

ТЕОРЕТИЧНА ТА ЕКСПЕРИМЕНТАЛЬНА МЕДИЦИНА

Globa N.S., Isaeva I.N., Karmazina I.S.

FEATURES OF ADAPTIVE RESPONSES TO PHYSICAL ACTIVITY IN YOUNG PERSONS WITH ARTERIAL HYPOTENSION

Kharkiv National Medical University, Physiology department, Kharkiv, Ukraine

The main objective of this research was to identify the possible features of physical capacity in persons with arterial hypotension, depending on the type of regulation and self-regulation of systemic blood pressure.

60 students of 2nd year of KhNMU aged 18 - 20 years, including 25 students with arterial hypotension and 35 students with normal blood pressure levels have been examined. The physical strain was performed on a bicycle ergometer, during a standard resistance 200/400 W (for young women and men)and 60 rpm. Physical endurance was determined by the duration of the performance of each probationer. Vegetative supply was evaluated by determining the systolic (SBP) and diastolic (DBP) blood pressure by Korotkov method (mmHg), heart rate (HR) was examined by the pulsation of the radial artery, stroke volume (ml) was calculated by the standard formula, cardiac output using the formula: CO = SV*HR. Grouping was performed on a range of factors – the level of systolic and diastolic blood pressure, the type of regulation and the nature of the recovery period. In individuals of the control group (with normal values of SBP, DBP, HR, SV, CO) immediately after exercise, the average duration of which was 164,2sec, in 91,4% of cases acceleration of the heart rate with the average level of 142,3 bpmwas observed. Also there was noted a moderate rise in SBP (77,1% of cases), which on average amounted to 144,5 mm Hg; in 45,7% persons of the control group there was a slight decrease in diastolic blood pressure to 63 mm Hg on average, and, accordingly, an increase in PP was observed in 85,7% of cases. The significant and adequate increase in the CO (11.7 l/min) has been identified which is the result of increase in HR and SV. Analyzing vegetative supply of cardiovascular systemofsubjects with initially reduced blood pressure, after exercise, the average duration of which was 128,9 s that is much less than the duration of exercise in control group, it was found that a significant increase in heart rate to an average of 166 bpm was observed in 52% of cases. At thatSBPdid not change in 48% of cases, and slightly increased to 127,5 mmHg in 52% of examinees in this group. Moreover, DBP more often increased slightly to 80.7 mm Hg on average, which was reflected in 56% of cases, in 28% of subjects DBP did not change, and only 16% of the subjects had a decrease in diastolic blood pressure. Pulse pressure in the majority of persons in this group remained unchanged – 55.3 mm Hg. Also there was noted an increase of CO, which was achieved mainly due to a significant increase of heart rate and not due to increase of SV that was 77.2 ml in average.

The results of current research showed that young persons with initially reduced level of blood pressure have less endurance for physical exercises than those in the control group; also they have the limitation of regulatory mechanisms of adaptive response to physical activity and reduced effectiveness of self-regulation of systemic blood pressure. In patients with hypotension the increase of CO was achieved mainly due to a significant increase in heart rate, instead of SV and heart rate, which indicates the hypotonic type of circulatory regulation, as opposed to individuals with normal BP values, in which the increase of COwas achieved by parallel increase in HR and SV that shows the normotensive type of regulation of the cardiovascular system.