Influence of Wholebody Extreme Aerocryotherapy on Functional State of Cardiovascular System

V.O. Onishchenko

State Institution 'Scientific – Practical Medical Rehabilitating and Diagnostic Center of the Ministry of Health of Ukraine', Kostiantynivka, Ukraine

Bogomolets National Medical University, Kyiv, Ukraine

The human body functioning and mechanisms of its adaptation to unusual environmental conditions are the important aspects of physiology. The cardiovascular system is one of the first to respond to any extreme factor, so studying the exposure to extreme low temperatures is an important task of practical medicine.

The research aim was to study the effect of wholebody extreme aerocryotherapy on the functional state of cardiovascular system.

Patients signed an informed consent before the study. The procedures were carried out in accordance with the requirements of the Helsinki Declaration.

The study included 63 patients (31 men and 32 women), of 42.6 ± 2.1 years old, with a high normal blood pressure and grade 1 arterial hypertension. Patients were rehabilitated with somatoform disorders in the State Institution ‘Scientific – Practical Medical Rehabilitating and Diagnostic Center of the Ukrainian Ministry of Health in Kostiantynivka without antihypertensive therapy’. The procedures were performed using the Cryo Therapy Chamber (–110°C) (Zimmer Midizin Systeme, Germany). All patients received 15 procedures of wholebody extreme aerocryotherapy (GEACT), conducted according to O.A. Panchenko methods. The state of cardiovascular system was evaluated by recording the heart rate (HR) and blood pressure (BP).

After GEACT systolic pressure in men increased by 9 mm Hg, and diastolic increased by 5 mm Hg, in women it increased by 8 mm Hg, and by 3 mm Hg in average. After GEACT session the heart rate decreased in men by 7 beats per minute, and in women it did by 5 beats per minute supported the minute volume of blood circulation at a constant level. After 30 min of GEACT in 85% of patients, the indices of blood pressure and heart rate returned to initial ones.

After the GEACT session the blood pressure indices in men were decreased by 4 mm Hg, and in women they were reduced by 7 mm Hg (p < 0.05). The index of blood pressure decreased in average by 3 mm Hg (p < 0.05).

Thus, the GEACT performing in patients with somatoform disorders during regenerative treatment promotes optimization of the functional state of organism and increased its functional reserve.