

THE EVALUATION OF STRESSFUL INFLUENCE OF CRYOTHERAPY ON THE HUMAN BODY

L.V. Panchenko¹, O.A. Panchenko^{1,2}, V.O. Onishchenko²

¹Rehabilitation & Diagnostic Center Ministry of Health of Ukraine, ²Donetsk National University by M. Gorky, Donetsk, Ukraine

The whole body air cryotherapy is based on short-term heat abstraction from the whole body surface of a patient by a laminar stream of dry air with a temperature about -110 -120 °C.

Research objective of this study is an estimation of stressful influence of cryotherapy on a human body. Sessions of cryotherapy were carried out into cryochamber «Zimmer Medizin Systeme» (Germany). 145 people have taken part in the research. The duration of cryotherapy sessions was 0.5 minute for the first day and then, increasing by 0,5 minutes daily, has been reached up to three minutes on the 6th and 7th day of the research. The course of cryotherapy was composed of 20 sessions. The cortisol level in the blood was defined weekly after each 5 sessions with immune-enzyme analyzer «BioTec EL 800».

Before cryotherapy sessions were carried out, the level of cortisol averaged 436±26,6 n/mol/l, after the 5th session - 420±21,05 n/mol/l, after the 10th session - 401±21,05 n/mol/l, after the 15th session - 391±21,5 n/mol/l. After the whole cryotherapy session the average level of cortisol estimated 365±31,5 n/mol/l, that was lower than initial values of the quotient ($p < 0,05$).

In the course of cryotherapy there was a gradual decrease in level of cortisol of patients that testifies to the effect that the level of patient stress has been decreasing during the therapy, and by the 20th session the process of adaptation to low temperature influence of a human body was the result of proposed regimen.