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BODY COMPOSITION AND HEART RHYTHM VARIABILITY IN WRESTLERS

Introduction. Modern elite sport presupposes high competition among participants in sports competitions, coaches, functionaries and many other professionals who provide the training process [1, 2]. In this connection, in order to ensure an objective understanding of changes in the parameters of athletes' readiness, and to build a competitive system for training athletes of national teams, a scientific approach to the training process is relevant and does not raise doubts about its need.

The heart rhythm variability is a very relevant and informative direction in the analysis of the adaptive reactions of the body of athletes [3]. However, there is little understanding of the relationship between body composition and heart rhythm variability in elite athletes.

The aim of the work was to study the relationship between body composition and heart rhythm variability in elite wrestlers.

Methods. In the work we used: Omron BF511 body composition monitor, we obtained and analyzed data on the body composition of 8 highly qualified athletes, members of the Ukrainian national team in Greco-Roman wrestling in 5 weight categories. 67kg - 1 person, 72kg - 1 person, 77kg - 3 people, 87kg - 2 people and 97kg - 1 person. Vegetative regulation was assessed according to the indicators of statistical and spectral analysis of heart rhythm variability.

Results. As a result of the study, it was stated that the indicators of the body composition of the highly qualified wrestlers have some differences, but most of them correspond to the norm (according to the Omron Healthcare rating scales). Also, a distinctive feature of the studied athletes is a high and very high percentage of skeletal muscle mass (in the range from 40.2 - 42.9% to 44.7 - 46.5%). At the same time, the highest values of this indicator were found among the leaders of the national team. The studied variable indicator of the percentage of body fat was low and normal (in the range of 8-19.9%). At the same time, one athlete with a body weight of 81.5 kg showed the highest percentage of fat (high level, 21.1%). This athlete had the highest value of visceral fat (9 conventional units), although this indicator was in him within the upper limit of the norm.

According to the study of heart rhythm variability, it was found that the total power of the spectrum (TP) increases due to an increase in the power of the energy spectrum of the parasympathetic link of autonomic nervous regulation (high-frequency spectrum HF) and a decrease in the power of the low-frequency spectrum (LF). In elite wrestlers being at rest state, it is possible to activate maximum parasympathetic rhythm regulation with inhibition of sympathetic influences [4]. Consequently, the hemodynamic supply of the organism of highly qualified athletes occurs under higher tension of the mechanisms of cardiac activity regulation.

Conclusion. Studies have shown that a high percentage of muscle mass is consistent with the activation of parasympathetic influences on the sinus node of the heart at rest state, which reflects the result of adaptive restructuring of the body during the training process.

Reference

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