STRUCTURE OF LOADING IN COMPETITIVE EXERCISE

In modern sports achievement, the best result is closely connected with the functional loadings of the maximum capacity. The primary goal of the training process is the adaptation in the physical condition of the athletes according to the needs of the competitive loading which leads to need of a “functional loading” programme for the athletes.

The question that surrounds the ranges and sizes of competitive loadings for competent handball players has been discussed in the works of Russian (A.A.Danilov, 1987; V.J.Ignateva, 1995; V.I.Thorev, 1995; 2000) and other (M. Bon, M. Šibila, 2004) experts. However, this consideration has fragmentary character and is examined by the authors within the sphere of other issues.

As an integrated parameter, some authors (S.M.Vajtsehovsky, 1966; F.P.Suslov, 1976; E.A.Pirogova, L.J.Ivaschenko, N.P.Strapko, 1986; V.JA.Ignatyev, V.I.Thorev, I.V.Petracheva, 2005) have analysed how the intensity of loading serves the FHR.

The given parameters are also based on V.A. Sorvanov’s point method, developed in 1978, which is an estimation of how much energy is used by athletes when performing specific exercises. This aim of this particular area of study was to define the pulse ranges of competitive activity of players in the first (back) and second (wing) lines in competitions at national level.

Research was conducted by means of the electronic “Polar S810i” system. Data taken from 12 experienced handball players (from the Russian national team), carried out the functions of 6 back and 6 wing players in 15 games at a national level and the results were subject to analysis.
The attained results defined the duration of competitive activity of the wing and back players in the basic zones of capacity (diagram 1).

Diagram 1: A percentage parity of time spent in the basic zones of capacity by the back and wing player during performance of a competitive exercise of a national level.

The analysis of the collected data from competition at national level has revealed:

- In the aerobic zone of capacity the difference in the duration of competitive activity is 25.9% comparing the wing to the back player. Distinctions are authentic (p<0.001)

- In mixed aerobic-anaerobic zone of capacity, the difference in competitive loading of the wing player in comparison to the back player is 15% (p<0.01)

- In anaerobic-glicolitic zone of capacity, the loading competitive activity of the wing player is authentically (p <0.001) 12.1% above that of the back player.

Gradation of functional loading of the back and wing players within the limits of exercise at national level and FHR ranges has allowed construction of range of pulse frequencies (Diagram 2).
The result of this research has revealed:

- Distinctions in an aerobic zone of capacity are caused by greater (p<0.001) duration of game activity in back players in all FHR ranges from 91 up to 150 beats a minute.

- In mixed aerobic-anaerobic zone of capacity distinctions develop, first of all, because of a noticeably smaller (p<0.001) duration of competitive activity for back players in FHR ranges of 161-170 and 171-180 beats a minute.

- In anaerobic-glicolitic zone of capacity in all FHR ranges from 181 up to 210 beats a minute competitive loading of wing players is distinctly more than loading of the back players.

Point of energy expenses of back players is averaged with 705.1±28.99 points whereas it is equalled about 998.2±20.55 points of the player in the wing role.

The presented part of the achieved results from our study clearly testifies to the necessity of an individual approach to the functional preparation of the players in basic match roles. The models of functional loading developed by us also take into consideration and solve the problems of planning and the control of training loads.

For national handball team of Russia, models of competitive loading on an international level have been developed.

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