POWER WORKING CAPACITY AND HAEMATOLOGICAL STATUS OF YOUNG FOOTBALL PLAYERS – A LONGITUDINAL STUDY

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The active sport practiced by young people in pubescent age deeply influences the development of their structural and functional status. On the other hand, the aerobic capacity of soccer players substantially influences their technical performance and tactical choices. Thus, the assessment of soccer players’ aerobic performance and the parameters which influences this performance should be of interest for soccer coaches in order to evaluate and improve their endurance training sessions (1).

The aim of the study was to evaluate the anthropological characteristics, the physical working capacity, the technical skills and the changes in some haematological parameters of young football players from youth Bulgarian football teams of national level measured in 12 months interval.

Methods 50 footballers (16.03±0.92 ys old), which had been trained for 5.01±0.53 ys, were investigated twice in an interval of 12 months. In this interval the training program was the same as in the previous years – 5 days a week, twice a day, 90 min each training session. The year dynamics of the body mass (BM), the body mass index (BMI), the power working capacity (PWC170), red blood cell count (RBC), haemoglobin concentration (HGB), haematocrit (HCT), and the technical skills was studied. A paired t-test was used to assess the individual differences in the above parameters and the correlation analysis was applied in order the relations between the variables to be studied. The data were presented as mean±SD.

Results All the data obtained were in the normal ranges for athletes of this age (2). There was a significant increase of the individual BM of the group investigated (from 61.87±9.82 to 65.34±8.16 kg, p<0.05) and in the BMI (from 20.15±2.04 to 20.99±1.91, p<0.05) for the one-year period of the study. The PWC170 related to a kg BM increased 7% for one year (from 20.13±2.71 to 21.58±2.60 km/min/kg, p<0.01) which correlates with the increased index presenting the sports abilities and the technical skills of the players (from 7.23±0.34 to 7.83±0.41 respectively, p<0.01) and supports the findings of other authors (3). On the other hand, significant correlations had been found between the BMI and the PWC of the football players in both measurement – the first one and 12 months later (r=0.66, p<0.05 and r=0.63 respectively, p<0.05). No changes in RBC (5.19±0.30 vs. 5.19±0.30 10^12/l, p>0.05), HGB concentration (148.48±6.48 vs. 148.48±6.48 g/l, p>0.05), and HCT (0.433±0.026 vs. 0.447±0.026, p>0.05) was registered in the second study when compare with the first one.

Conclusions Training of young football players in pubescent age for a year increases their working capacity and improves their technical skills, which is not associated with changes in the oxygen carriers of the blood. Following the above parameters in dynamics gives the opportunity to create criteria for establishing best practices for coaching soccer.

References:

Keywords: Soccer, Sport Performance, Growth and Development

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