Abstract

Title: Komparácia fyziologických a motorických determinantov mladých elitných hráčov futbalu s cieľom ich predikcie do reprezentačného výberu ČR

Objectives: Comparative analysis of physiological and motive determints of young elite soccer players with regard to predicton to top elite CR representation

Methods: The monitored group of young football players, who play at the top league level and in the youth national team of the Czech Republic, may have met the pre-determined criteria. Laboratory testing is performed in the Laboratories of Sports Motor Motors (LSM) of the Faculty of Physical Education and Sport, Charles University (FTVS UK), always in the morning from 8:00 - 12:00. The field reduction was at least allowed by 10° C due to the objectification of the measured data and always took place in the afternoon 14:00 - 16:00 on artificial grass 4th generation. Based on body composition, we used the bioelectric impedance TANITA MC-980. Footscan (Rsscan International, Belgium). For the purpose of the explosion of the force of the lower limbs, we used KISTLER 8611 force plates (Kistler, Switzerland), on which the frequency was set to 1000 Hz. Cybex Humac Norma (Cybex NORM®, Humac, CA, USA). For field testing, we used the following tests: Sprint at 5 and 10 meters, Flying 20 meters sprint, Agility 505 test and Yo - Yo intermittent recovery test (level 1). We used photocells (Browertiming system, Salt Lake City, Utah, USA) to measure the time at speed abilities (Sprint at 5 and 10 meters, Sprint at 20 meters after the start, Agility 505 test).

Results: The results of the study show significant differences between the players at the league level and the players of the Czech national team in most of the monitored parameters. In laboratory testing, we observed significant differences in the parameters of body weight, postural stability, explosive force through CMJ (countermovement jump) and SJ (squat jump) tests, isokinetic force of knee flexors and extensors at an angular velocity of 60°.s-1. On the contrary, significant differences between the observed groups were not reflected in the evaluation of body height, body fat and in the CMJ-FA (countermovement jump fixed arms) explosive strength test. In field tests, we observed significant differences which favoured players at the national team

level in all tests, ie. Acceleration speed (5 and 10 m), rapid change of direction (A505) and in YO-YO intermittent recovery test (level 1). In terms of prediction, we found that within the entire set, regardless of the game position of the players, the selected prediction model worked with a high accuracy of 84%. When predicting players to the extreme position, the model worked with an accuracy of 90%, but due to insufficient sample size, it is not possible to generalize these results. It was similar in the other two groups. For the positions of medium players and attackers, the chosen model worked with an accuracy of 70%. The prediction model for the post of middle defender based on the monitored parameters worked with only 50% success, but the file size was not large enough as in the previous two groups and the results cannot be generalized.

Conclusions: Based on the findings of our study, we conclude that there are significant differences between the players at the league level and the players at the representation level: body height, body fat, postural stability, speed-strength (explosive power of the lower limbs, isokinetic force of the lower limbs, acceleration speed, maximum speed), endurance (specific intermittent endurance). We found that based on the parameters we monitored, it is possible to determine a prediction with high accuracy (84%) on the current sample, but it is not possible to generalize the prediction due to specific game positions due to the low number of probands on each player's post.

Key words: soccer, selection of talents, tests, evaluation