

Abstract

Name: Hamstring injuries and possible prevention based on the evaluation of risk factors in selected athletes

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Aims: The aim was to make a review of available information about hamstring muscle injuries and then to identify and describe the muscular capabilities in group of Czech athletes with a focus on speed-power disciplines. Furthermore, to statistically evaluate the correlation between the selected injury risk factors and injury (trunk muscle strength, H/Q force ratio and body composition analysis focusing on segmental analysis).

Methods: The methods were designed as follows: firstly, as a document analysis, then by measuring three selected parameters in relation to risk factors for hamstring injury and then a non-standardized questionnaire was developed to clarify the current condition of the probands and the preventive procedures they used.

Results: Correlation of each variable did not confirm the set hypotheses that these factors might be related to injury risk. However, a correlation was found between trunk strength measurements and the H/Q ratio on the dominant and nondominant lower limbs, as well as an association of the H/Q ratio between the two lower limbs (medium to high level of correlation at $p < 0.05$).

The results are consistent with the available literature, where the hamstring injury is a multifactorial problem and single major risk factor cannot be detected. For hamstring injuries, no direct association was found between the tested parameters. Nevertheless, it is recommended to include prevention programs to reduce modifiable injury risks.

Keywords: athletic injuries, injury prevention, hamstrings, isokinetic dynamometry, body composition analysis, trunk strength