Evaluation of the relationship between ACE gene genotype distribution and lower muscle strength in novice adolescent wrestlers

Oral Presentation

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Abstract
Introduction: Sports genetics is a relatively new concept that examines the genetic factors that affect the improvement and development of athletic performance. Sports scientists and researchers in related fields have undoubtedly agreed on the fact that the level of physical growth and the process of adaptation to actions is due to the genetic composition of individuals. The aim of this study was to investigate the correlation between angiotensin gene polymorphism (ACE) and lower muscle strength of beginner adolescent wrestlers.
Methods: First, according to the protocol inside the SINACLON kit, DNA extraction was performed, and after DNA extraction, its quality and quantity were evaluated by spectrophotometry (nanodrop) and electrophoresis in 15% agarose gel. The leg squat test was used to measure the strength of the lower torso muscles. In this test, the weights were placed in balance on the athlete's shoulders. Then the weight was lifted with the help of an assistant. The squat was performed normally with the foot squat, with the head facing forward and up, and the movement was continued until the athlete's thighs were parallel to the ground, then the squat moved rapidly upwards. Done above; So that the knees should be completely straight. ANOVA analysis was used for quantitative analysis to compare and correlate and CHI-SQUARE analysis to determine the frequency distribution of genotype.
Results: The results of the analysis showed that among novice wrestlers who have strong endurance muscles of the lower torso, 57.1% have the ACE DD gene, 14.3% have the ACE ID gene, and 28.6% have the ACE II gene.
Conclusion: The use of gene profiling techniques can optimize exercise content and positively affect athletic performance.

Keywords
Gene; ACE; muscle strength; wrestler

Reference:

1. Puthucheary Z., Skipworth J.R.A., Rawal J., Loosemore M., Someren K.V., Montgomery H.E. (2011). Genetic influences in sport and physical performance. Sports Medicine, 41(10), 845-59.
2. Paulauskas, A., Danileviciutė, A., Povilaitis, T., & Poderis, J. (2009). Genetic Variability Associated with Angiotensin Converting Enzyme (ACE) Gene Polymorphism in Sportsmen Pursuing Different Sports. Proceedings of the Latvian Academy of Sciences. Section B. Natural, Exact, and Applied Sciences., 63(1- 2). Doi: 10.2478/v10046-009-0012-y