عنوان مقاله:

The comparison of the genetic profile of ACTN۳ single-nucleotide polymorphism in elite weightlifters and non-athletes

محل انتشار:

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خلاصه مقاله:

Background and aims: The α-actinin-۳ (ACTN۳) gene plays a key role in muscle signaling pathways and sarcomere contraction. Iranian weightlifters are among the most successful world and Olympic champions. Therefore, the present study was performed to compare the genetic profile of the single-nucleotide polymorphism of the ACTN۳ gene in elite Iranian male weightlifters vs. non-athletes. Methods: This cross-sectional study was of a qualitative-quantitative type. Subjects included ۳۰ volunteer elite male weightlifters, including all of Iran's premier league, members of the national team, Olympic, world, and Asian champions of Isfahan province, with a mean age of ۲۱.۷۷±۷.۱۱, the height of ۱۷۹.۸۷±۶.۹۸, and the weight of ۹۶.۸۷±۲۲.۷۳ (Mean±SD) versus ۳۰ volunteers available healthy non-athletes who were the same in age, height, and weight as weightlifters. After completing the consent form and physical health measurement questionnaire, participants' saliva samples were collected, and DNA was extracted accordingly. Genotypes were determined after performing the polymerase chain reaction via the Tetra-Arms method and electrophoresis. Data were analyzed by SPSS (version ۲۰) and the chi-square test (P<۰.۰۵). Results: The prevalence of the RR genotype in selected weightlifters (۵۶.۷%) was significantly higher than that of other genotypes (χ۲=۱۳.۴۰, P=۰.۰۳). There was a significant difference in ACTN۳ R/X genotype distribution (P=۰.۰۳۹, χ۲=۶.۴۸) between weightlifters and non-athletes. Conclusion: A higher prevalence of the RR genotype of the ACTN۳ gene in selected elite male weightlifters versus non-athletes can be likely considered for selecting genetically predisposed individuals.

کلمات کلیدی: