عنوان مقاله:

Evaluation of Caffeine Ingested Timing on Endurance Performance based on CYP۱A۲ rs۷۶۲۵۵۱ Profiling in Healthy Sedentary Young Adults

محل انتشار:

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خلاصه مقاله:

Background: Caffeine is generally suggested to increase VO۲max in endurance performance. Nevertheless, the response to caffeine ingestion does not seem to be uniform across individuals. Therefore, caffeine ingested timing on endurance performance based on the type of CYP۱A۲ single nucleotide polymorphism rs۷۶۲۵۵۱, that were classified as fast and slow metabolizers, need to be evaluated. Methods: Thirty participants participated in this study. DNA was obtained from saliva samples and genotyped using polymerase chain reaction-restriction fragment length polymorphism. Each respondent completed beep tests under three treatments blindly: placebo, ۴ mg/kg body mass of caffeine one hour, and two hours before test. Results: Caffeine increased estimated VO۲max in fast metabolizers (caffeine=۲۹.۳۹±۴.۷۹, placebo=۲۷.۳۳±۴.۰۲, p<۰.۰۵) and slow metabolizers (caffeine=۳۱.۲۵±۶.۱۹, placebo=۲۹.۱۷±۵.۳۲, p<۰.۰۵) in one hour before test. Caffeine also increased estimated VO۲max in fast metabolizers (caffeine=۲۸.۹۱±۴.۶۵, placebo=۲۷.۳۳±۴.۰۲, p<۰.۰۵) and slow metabolizers (caffeine=۳۲.۵۳±۶.۶۸, placebo=۲۹.۱۷±۵.۳۲, p<۰.۰۵) in two hour before test. However, for slow metabolizers, the increasing was greater when caffeine was administered two hours before test (slow=۳.۳۷±۲.۰۷, fast=۱.۵۷±۱.۶۲, p<۰.۰۵). Conclusions: Genetic variance may affect the optimal caffeine ingestion timing, sedentary individuals who want to enhance their endurance performance may ingest caffeine ۱ hour before exercise for fast metabolizers and ۲ hours before exercise for slow metabolizers.

کلمات کلیدی:

Caffeine, CYP۱A۲, Performance Enhancer, Sedentary, VO۲max.