ABSTRACT

EFFECT OF CREATINE LOADING COMBINED WITH ACUTE CAFFEINE INGESTION ON LOWER BODY MUSCULAR STRENGTH AND NEUROMUSCULAR FUNCTION

The purpose of this study was to examine the impact of creatine monohydrate loading combined with acute caffeine ingestion on lower body muscular strength and neuromuscular function. Surface electromyogram (EMG) was collected from the vastus lateralis (VL) and gluteus maximus (GM) muscles of subjects' left leg during the barbell back squat exercise (BBS). Lower body muscular strength was determined from 10 resistance-trained males based on the maximum number of repetitions completed at 87.5% of their 1-repetition maximum (1RM) for the BBS (87.5%BBSRMTEST) under different treatment conditions: placebo (PL) and creatine plus caffeine (CC). One week prior to each test, the subjects' 1RM (BBSRMPRED) was predicted from a 3-8 RM test (BBSRMREP). Subjects supplemented for 7 days with either creatine (5 grams, 4 times daily) or placebo (corn starch). Following day 7 of supplementation, subjects reported to the lab and ingested either placebo (dextrose) or caffeine (5 mg/kg body weight) 1 hour prior to testing. Testing sessions were separated by 4 weeks. Treatment possibilities were 1) PL – placebo (corn starch) loading + placebo, or 2) CC – creatine loading + caffeine. Combined creatine and caffeine supplementation had no significant effect on 87.5%BBSRMTEST and surface EMG data. In conclusion, combined creatine and caffeine supplementation elicited no significant effect on lower-body strength and neuromuscular function.

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