عنوان مقاله:

The effect of L-Arginine supplementation on Delayed Onset Muscle Soreness (DOMS) after eccentric heavy exercise

محل انتشار:

دوماهنامه پزشکی هرمزگان, دوره 21, شماره 3 (سال: 1396)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Babak Nakhostin-Roohi - *Department of Physical Education and Sport Sciences, Ardabil Branch, University of Mohaghegh-Ardabilli, Ardabil, Iran*

Zahra Mohammadi Aghdam - *Department of Physical Education, University of Mohaghegh-Ardabili, Ardabil, Iran*

خلاصه مقاله:

Introduction: L-Arginine supplementation improves antioxidant defenses through LArginine/nitric oxide pathways. This investigation assesses the influences of acuteLArgininesupplementation on selected markers of delayed onset muscle soreness (DOMS)after one by one heavy eccentric exercise in healthy young females.Methods: Twelve healthy young females students of the University of Mohaghegh-Ardabilivoluntarily participated in a double-blind randomized-controlled crossover trial to estimate theeffects of 3g L-Arginine oral supplementation versus placebo (3g glucose) following anunaccustomed heavy eccentric exercise. L-Arginine (ARG) or placebo (PLC) was takenimmediately after squat exercise, separated by 10day washout. Measurements were conductedat baseline, 24, and 48h after exercise comprising: (a) TAC (b) CK (c) LDH (d) VisualAnalogue Scale (VAS) (e) Range of Motion (ROM) of both knees (f) Edema of both thighs.For data analysis software SPSS version 20 was used. To analysis the data, analysis ofvariance with repeated measure was used.Results: TAC significantly increased 48h after exercise compared with the pre-exercisejust in ARG group (P<0.05). CK and LDH significantly enhanced 24, and 48h afterexercise only in the PLC group (P<0.05). VAS and edema increased 24, and 48h afterexercise compared with the pre-exercise in both groups (P<0.05). Moreover, ROMdecreased in both groups 24, and 48h after exercise compared with the pre-exercise(P<0.05). There were no between-group differences in any time series (P> 0.05).Conclusion: The findings of this study suggest that acute supplementation of ARG afterheavy eccentric exercise may alleviate muscle damage .through promoting the antioxidantcapacity, protein synthesis, or decrease of lactate accumulation

کلمات کلیدی:

(Creatine Kinase (CK), Lactate dehydrogenase (LDH), Visual Analogue Scale (VAS