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Effects of vitamin C and E combination on hormonal, enzymatic and hematological values in blood of forced training basketball players

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[Biol Sport](#) 2010; 27 (1):

ICID: 907784

Article type: Original article

IC™ Value: 9.38

Abstract provided by Publisher



I investigated effects of vitamin C and E (VCE) combination supplementation on lactate dehydrogenase (LDH), creatine kinase (CK) activities, and free testosterone, cortisol and hematological values in blood of forced training of basketball players.

Blood was obtained from 14 male basketball players pre-game (Group A), post-game (group B) and after 35 days on vitamin C (500 mg) and E (150 mg, VCE)/ 24 h orally supplementation pre (Group C) and post-training (Group D). The anticoagulated blood and serum samples were obtained from all subjects.

Cortisol levels were lower in forced training subjects than in control subjects, whereas there was a significant increase serum CK levels, free testosterone levels and free testosterone/cortisol ratio. Decreased cortisol values were mostly increased by exercise plus VCE supplementation although serum CK levels, free testosterone levels and free testosterone/cortisol ratio were decreased by exercise plus the VCE supplementation. There were no significant changes in white blood cells, red blood cells and platelets counts and hemoglobin and hematocrit values in the four groups.

In conclusion, these data demonstrated an increase in the CK in the serum of forced training whereas there is a decrease in the free testosterone, cortisol and their ratio. However, supplementation of VCE might partially modulate for the hormonal and enzymatic stress marker profile due to strengthen the antioxidant defense system by decreasing ROS.

ICID 907784

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