Abstract


Oral vitamin C and E combination modulates blood lipid peroxidation and antioxidant vitamin levels in maximal exercising basketball players.


Department of Biophysics, Suleyman Demirel University, Isparta, Turkey.

BACKGROUND: Oxidative stress occurs during maximal exercise, perhaps as a result of increased consumption of oxygen. Vitamins C and E can overcome the effects of antioxidants in exercise.

OBJECTIVE: We investigated the effects of supplementation with a combination of vitamin C and E (VCE) on blood lipid peroxidation (LP) and antioxidant levels following maximal training in basketball players.

METHODS: Blood samples were taken from 14 players (group A) and divided into two subgroups namely maximal training (group B) and maximal training plus VCE groups (group C). Group B maximally exercised for 35 days. VCE was supplemented to group C for 35 days and blood samples were taken from group B and C. Plasma and hemolyzed erythrocyte samples were obtained from the players.

RESULTS: Erythrocyte glutathione peroxidase (GSH-Px) activity and plasma vitamin E concentration were lower in group B than in group A, whereas plasma and erythrocyte LP levels were higher in group B than in group A. Plasma vitamin A, vitamin E, erythrocyte GSH-Px, and reduced glutathione (GSH) values were higher in group C than in groups A and B although LP levels in plasma and erythrocytes were lower in group C than in group A and B. beta-Carotene values did not change in the three groups.

CONCLUSION: In conclusion, VCE supplementation in maximal exercising basketball players may strengthen the antioxidant defense system by decreasing reactive oxygen species (ROS).

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