The effect of hemp seed oil on serum oxidant/antioxidant balance in rats trained to exercise with progressive intensity

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Abstract

Background. The antioxidant action of hemp oil and its favorable effects on increasing aerobic capacity and on the serum oxidant/antioxidant balance demonstrated in rats during linear intensity exercise led us to study the influence of hemp oil dietary supplementation on the serum oxidant/antioxidant balance in rats trained to progressive intensity exercise.

Objectives. We pursued the experimental progressive intensity training effect, with or without hemp seed oil, on the serum balance of oxidants/antioxidants in rats.

Methods. The research was conducted on three groups (n=10 animals/group) of male, adult Wistar rats. Group 0 was the control group (sedentary animals), group I consisted of rats trained to progressive intensity exercise, group II consisted of rats trained to progressive intensity exercise and supplemented with hemp oil. Exercise training lasted for 28 days.

Results. Hemp oil supplementation and exercise with progressive loading caused significant increases in oxidative stress indicators and significant increases in antioxidant defense.

Conclusions. Hemp oil is a complex nutritional agent with an antioxidant effect during progressive loading exercise by increasing antioxidant defense capacity.

Keywords: rats, exercise, serum oxidant/antioxidant balance, hemp oil.