

HEART ANTIOXIDANT ENZYME ACTIVITIES DURING ISCHEMIA-REPERFUSION INJURY ARE MODULATED BY EXERCISE AND ANABOLIC STEROID TREATMENT

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The beneficial effects of exercise against ischemia/reperfusion (I/R) injury are well known. Previous studies showed that exercise cardioprotection would be mediated by increasing the antioxidant enzyme activities that were impaired by the anabolic steroid nandrolone decanoate (DECA) treatment. Here, we evaluated the effects of exercise and DECA treatment on the activities of the four antioxidant enzymes superoxide dismutase (SOD), catalase (cat), glutathione peroxidase (GPx) and glutathione reductase (GR) in three periods: pre-ischemia (PI); after 30 minutes of ischemia (I); after 30 minutes of ischemia and 60 minutes of reperfusion (I/R). The activity of all antioxidant enzymes were increased during I period in all groups. Control trained rats (CT) showed higher activities of SOD and GPx at PI, I and I/R periods when compared to control sedentary (CS), DECA sedentary (DS) and DECA trained (DT) rats. GR activity was increased in CT rats at PI and I/R periods compared to DS and DT. Cat activity was higher in CT group at PI period compared to DS. Together, these results indicate that the exercise-induced heart antioxidant enzyme activities was impaired by DECA treatment.

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