

Heart and Plasma LDH and CK in Response to Intensive Treadmill Running and Aqueous Extraction of Red Crataegus pentagyna in Male Rats

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Abstract : Aim: The purpose of the current study was to investigate the effect of a high intensity treadmill running training (8 weeks) with or without aqueous extraction of Crataegus pentagyna on heart and plasma LDH and CK. Design: Thirty-two Wistar male rats (4-6 weeks old, 125-135 gr weight) were used. Animals were randomly assigned into training (n = 16) and control (n = 16) groups and further divided into saline-control (SC, n = 8), saline-training (ST, n = 8), red Crataegus pentagyna extraction -control (CPEC, n = 8), and red Crataegus pentagyna extraction -training (CPET, n = 8) groups. Training groups have performed a high-intensity running program 34 m/min on 0% grade, 60 min/day, 5 days/week) on a motor-driven treadmill for 8 weeks. Animals were fed orally with Crataegus extraction and saline solution (500mg/kg body weight/or 10ml/kg body weight) for last six weeks. Seventy- two hours after the last training session, rats were sacrificed; plasma and heart were excised and immediately frozen in liquid nitrogen. LDH and CK levels were measured by colorimetric method. Statistical analysis was performed using a one way analysis of variance and Tukey test. Significance was accepted at P = 0.05. Results: Result showed that consumption crataegus lowers LDH and CK in heart and plasma. Also the heart LDH and CK were lower in the CPET compared to the ST, while plasma LDH and CK in CPET was higher than the ST. The results of ANOVA showed that the due high-intensity exercise and consumption crataegus, there are significant differences between levels of hearth LDH (P < 0/001), plasma (P < 0/006) and hearth (P < 0/001) CK. Conclusion: It appears that high-intensity exercise led to increased tissue damage and inflammatory factors in plasma. In other hand, consumption aqueous extraction of Red Crataegus maybe inhibits these factors and prevents muscle and heart damage.

Keywords : LDH, CK, crataegus, intensity

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