

## Investigating Combined Effect of Aerobic Training and Crataegus elbursensis Extract on Plasma Angiogenic Mediators in Male Wistar Rats

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**Abstract :** The present study aims to investigate the effect of six weeks of progressive aerobic training and aqueous extract of Crataegus monogyna on VEGF variations and plasma angiotensin-1/2 (ANG- 1/2) in male Wistar rats. Materials and methods: A number of 30 male Wistar rats, 4-6 months old, were randomly divided into four groups: control Crataegus monogyna (N=8), training Crataegus monogyna (N=8), control saline (N=6), and training saline (N=8). The aerobic training program included running on the treadmill at the speed of 34 meters per minute for 60 minutes per day. The training was conducted for six weeks, five days a week. Following each training session, both experimental and control subjects of Crataegus monogyna groups were orally fed with 0.5 mg Crataegus monogyna extract per gram of body weight. The normal saline group was given the same amount of normal saline solution (NS). Eventually, 72 hours after the last training session, blood samples were taken from inferior vena cava. Results: the results showed that progressive endurance training caused insignificant reductions in plasma VEGF concentration in the training group, Crataegus monogyna group and training-Crataegus monogyna group comparing the control group. Plasma ANG-1 concentration reduced in the training, Crataegus monogyna and training-Crataegus monogyna groups while plasma ANG-2 concentration significantly increased in the Crataegus monogyna group ( $P=0.022$ ) comparing with the control group. The results showed that the ratio of plasma ANG-2 to ANG-1 significantly increased in the Crataegus monogyna group ( $P=0.028$ ) comparing with the control group. Conclusion: the findings suggest that combination of aerobic training and Crataegus monogyna extract has no synergistic effect on anti-angiogenesis indicators and Crataegus monogyna extract had a stronger effect on anti-angiogenesis indicators.

**Keywords :** angiotensin-1/2, VEGF, Crataegus monogyna extract, aerobic training

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