

## **The Effect of Aerobic Training and Aqueous Extract of *C. monogyna* (Hawthorn) on Plasma and Heart Angiogenic Mediators in Male Wistar Rats**

**Authors :** Asieh Abbassi Daloi, Ahmad Abdi

**Abstract :** Introduction: Sports information suggests that physical inactivity increases the risk of many diseases, including atherosclerosis. Coronary heart disease, stroke and peripheral vascular disease, atherosclerosis and clinical protests. However, exercise can have beneficial effects on risk factors for atherosclerosis by reducing hyperlipidemia, hypertension, obesity, plaque density, increased insulin sensitivity and glucose tolerance is improved. Despite these findings, there is little information about the molecular mechanisms of interaction between the body and its relation to sport and there arteriosclerosis. The present study aims to investigate the effect of six weeks of progressive aerobic training and aqueous extract of crataegus monogyna on vascular endothelial growth factor (VEGF) variations and angiotensin-1/2 (ANG- 1/2) in plasma and heart tissue in male Wistar rats. Methods: 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 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 the body weight. The normal saline group was given the same amount of the normal saline solution (NS). Eventually, 72 hours after the last training session, blood samples were taken from inferior Vena cava. Conclusion: It is likely that crataegus monogyna extract compared with aerobic training and even combination of both training and crataegus monogyna extract is more effective on angiogenesis.

**Keywords :** angiotensin 1,2, vascular endothelial growth factor, aerobic exercise

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