World Academy of Science, Engineering and Technology
International Journal of Sport and Health Sciences
Vol:11, No:08, 2017

The Effect of Eight-Week Medium Intensity Interval Training and Curcumin Intake on ICMA-1 and VCAM-1 Levels in Menopausal Fat Rats

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Abstract : Background and Purpose: Obesity is an increasing factor in cardiovascular disease and serum levels of cellular adhesion molecule. It plays an important role in predicting risk for coronary artery disease. The purpose of this research was to study the effect of eight weeks moderate intensity interval training and curcumin intake on ICAM-1 & VCAM-1 levels of menopausal fat rats. Materials and methods: in this study, 28 Wistar Menopausal fat rats aged 6-8 weeks with an average weight of 250-300 (gr) were randomly divided into four groups: control, curcumin supplement, moderate intensity interval training and moderate intensity interval training + curcumin supplement. (7 rats each group). The training program was planned as 8 weeks and 3 sessions per week. Each session consisted of 10 one-min sets with 50 percent intensity and the 2-minutes interval between sets in the first week. Subjects started with 14 meters per minute, and 2 (m/min) was added to increase their speed weekly until the speed of 28 (m/min) in the 8th week. Blood samples were taken 48 hours after the last training session, and ICAM-1 A and VCAM-1 levels were measured. SPSS software, one-way analysis of variance (ANOVA) and Pearson correlation coefficient were used to assess the results. Results: The results showed that eight weeks of training and taking curcumin had significant effects on ICAM-1 levels of the rats ($p \leq 0.05$). However, it had no significant effect on VCAM-1 levels in menopausal obese rates ($p \geq 0.05$). There was no significant correlation between the levels of ICAM-1 and VCAM-1 in eight weeks training and taking curcumin. Conclusion: Implementation of moderate intensity interval training and the use of curcumin decreased ICAM-1 significantly.

Keywords : curcumin, interval training , ICMA, VCAM
Conference Title : ICSEHS 2017 : International Conference on Sport, Exercise and Health Sciences
Conference Location : Vancouver, Canada
Conference Dates : August 07-08, 2017