

The Effects of Six Weeks Endurance Training and Aloe Vera on COX-2 and VEGF Levels in Mice with Breast Cancer

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Abstract : The aim of this study was to determine the effects of the effects of six weeks endurance training and Aloe Vera on cyclooxygenase 2 (COX-2) and VEGF levels in mice with breast cancer. For this purpose, 35 rats were randomly divided into 5 groups: control (healthy), control (cancer), training (cancer), Aloe Vera (cancer) and Aloe Vera + training (cancer). Induction of breast cancer tumors were done in mice by planting method. The training program includes six weeks of swimming training was done in three sessions per week. Training time from 10 minutes on the first day increased to 60 minutes in second week, and by stabilizing this time, the water flow rate was increased from 7 to 15 liters per minute. 300 mg per kg body weight of Aloe Vera extract was injected into the peritoneal. Sampling was done 48 hours after the last exercise session. K-S test to determine the normality of the data and analysis of variance for repeated measures and Tukey test was used to analyze the data. A significant difference in the $p < 0.05$ accepted. The results showed that induction of cancer cells significantly increased levels of COX-2 in aloe group and VEGF in training and Aloe Vera + training groups. The results suggest that swimming exercise and Aloe Vera can reduce levels of COX-2 and VEGF in mice with breast cancer. The results of this study, Induction of cancer cells significantly increased levels of COX-2 and MMP-9 in the control group compared with the cancer control group. The results suggest that Aloe Vera can probably inhibit the cyclooxygenase pathway and thus production of prostaglandin E2 decrease of arachidonic acid.

Keywords : endurance training, aloe vera, COX-2, VEGF

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