

## The effect of combination of Tamoxifen with interval and continue training on tumor mass in Mice with breast cancer tumor

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### Abstract

**Background:** Breast cancer is considered as the most common malignancy among females in the world. In Iran, this cancer is also the most prevalent malignancy among women. The aim of this study is to compare the effects of Tamoxifen and interval and continues training on tumor mass Balb/c mice suffering from breast cancer

**Methods:** For this reason 30 female Balb/c mice were utilized and after transplant carcinoma tumor to mice randomly divided in 6 groups as follows: 1: tumor-control 2: tumor-continue training 3: tumor-continue training-Tamoxifen 4: tumor-interval training 5: tumor-interval training-Tamoxifen 6: tumor-tamoxifen. Continuous training protocol was done for 6 weeks at 25% to 75%  $\dot{V}O_2$  max and interval training protocol was done for 6 weeks at 20% to 55%  $\dot{V}O_2$  max between 1 until 10 interval rep \* 1 min. The drug was injected every day during research program. Blood samples were collected after protocol. The levels of Heat shock protein 70-kDa (Hsp70), interleukin 4 (IL-4), and interferon gamma (IFN  $\gamma$ ) were measured with ELISA method, and the resulting data was analyzed with SPSS 10 statistical software

**Result:** Data analysis showed that the Hsp70 levels in both groups of interval and interval plus Tamoxifen were decreased ( $P=0.459$ ). Also in continues group was increased ( $p>0/05$ ). The IL-4 level in both groups of interval and interval plus Tamoxifen showed no significant differences compared to tumor control ( $P=0.112$ ). The IFN  $\gamma$  level in both groups of interval and interval plus Tamoxifen showed an increase, but was not significant compared to control group ( $P=0.784$ ).

**Conclusion:** Tumor mass in interval training only, interval training and Tamoxifen treated showed a significant decrease in the tumor growth in comparison with control group. But tumor mass in continues group was increased in comparison control group.

