ORIGINAL ARTICLE

Iranian Quarterly Journal of Breast Disease 2015; 8(3).

The Effect of 8 Weeks Aerobic Training on Serum Levels of Adiponectin and Estradiol in Women with Breast Cancer

Kazemi A: Dept of Physical Education, Faculty of Literature & Humanities, Vali E ASR University of Rafsanjan, Rafsanjan, Iran
Kalantari Khandni B: Dept of Oncology, Kerman University of Medical Science, Kerman, Iran
Rahomi Majd E: Dept of Exercise Physiology, Faculty of Literature & Humanities, Islamic Azad University, Kerman, Iran

Corresponding Author: AbdolReza Kazemi, a.kazemi@vru.ac.ir

Abstract

Introduction: Obesity through production of estrogen and Adipokines is risk factor for breast cancer. The aim of present study was to investigate the effect of aerobic training on serum Adiponectin and estradiol levels in women with breast cancer.

Methods: The present study was quasi-experimental study. To do this, fifty patients with breast cancer at stage 2 from Kerman with mean of 51.16 year, weight 72.48 kg and height 157.74 cm that chemotherapy courses were completed, randomly divided into two groups: training (n = 30) and control (n = 20). Training group performed endurance training for 8 weeks with intensity between 40 to 55 percent of target heart rate. Before and after the exercise protocol, blood samples were taken from both groups and serum levels of Adiponectin and estradiol were measured by ELISA via a Boster kit.

Results: Present study results showed Significant decreased in serum levels of estradiol (F=14.71 P=0.001) and significant increase in serum levels of Adiponectin (F=8.85 P=0.005) in the experimental group after 8 weeks aerobic training compare to control group.

Conclusion: Decreased estradiol without medical intervention that is aim of hormone therapy in breast cancer patients can show a positive effect of physical activity. It seems that Adiponectin is involved in decrease of estradiol levels through inhibition of cholesterol synthesis. Considering the findings, regular aerobic training is recommended for patients with breast cancer.

Keywords: Endurance Training, Breast Cancer, Estradiol, Adiponectin.