IJAE
Vol. 120, n. 1 (Supplement): 215, 2015
ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

Anthropometric indices of adiposity and fasting glucose metabolism in breast cancer survivors: effects of aerobic physical activity

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Adiposity and hypersinsulinemia are factors involved in cancer mortality including BC (1). Physical activity (PA) has the potential to counterbalance these risk factors. In fact, PA has been shown to produce beneficial effects on adiposity and glucose metabolism (2). We thus designed a randomized controlled trial to test the effect of an aerobic PA program on anthropometric indices of adiposity and fasting glucose metabolism in BC women included in a dietary intervention trial for prevention of BC recurrences. 42 BC women, aged 35-70 years, were randomized into an intervention (IG=19) and control group (CG=23). The IG had to participate in a 3-month active PA program that included two sessions of one-hour brisk walking per week. At baseline and after 3-month, all women were requested to undergo an anthropometric visit and to collect a blood sample for determination of fasting insulin and glucose levels. At the end of the 3-month PA a significant reduction in waist circumference ($p<0.05$) and percentage fat mass ($p<0.01$) were observed in IG, but not in CG. In addition, only IG increased significantly their Metabolic Equivalent of Task (METs) ($p<0.05$). Although fasting glucose and insulin levels don't show any significant change in either group, it is nevertheless encouraging that the two groups displayed an opposite trend as far as the changes in fasting insulin were concerned: fasting insulin shows a mean reduction (-0.9 U//ml) in the IG group and a mean increment in the CG (+0.7 U/ml). The results suggest that a standardized PA program in BC survivors reduces anthropometric indices of adiposity and may prove useful in preventing the development of hyperinsulinemic levels.

References

[1] Mann et al. (2014) Changes in insulin sensitivity in response to different modalities of exercise: a review of the evidence. Diabetes Metab Res Rev. 30(4): 257-268.
[2] Pisani (2008) Hyper-insulinaemia and cancer, meta-analyses of epidemiological studies. Arch Physiol Biochem 114(1): 63–70.

Keywords
Anthropometrics; body composition; breast cancer; physical activity.