Letter

Diabetes Metab J 2017;41:322-323
https://doi.org/10.4093/dmj.2017.41.4.322
pISSN 2233-6079 · eISSN 2233-6087

dmj
DIABETES & METABOLISM JOURNAL

The Effect of 12 Weeks Aerobic, Resistance, and Combined Exercises on Omentin-1 Levels and Insulin Resistance among Type 2 Diabetic Middle-Aged Women (*Diabetes Metab J* 2017;41:205-12)

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Adipose tissue is currently known as an endocrine organ that secretes a large number of factors termed adipocytokine with diverse actions in an autocrine, paracrine, or endocrine fashion [1]. Omentin-1, which has insulin-sensitizing effects, is preferentially produced by visceral adipose tissue, and is known to be reduced in obesity, insulin resistance, and type 2 diabetes [2]. Low circulating levels of omentin-1 is thought to be associated with inflammation and cardiovascular disease [3].

Life style modification was effective in resolving metabolic syndrome and reducing related abnormalities such as hyperglycemia, abdominal obesity, hypertension, dyslipidemia, and cardiovascular disease [4]. Both aerobic and resistance training have been shown to be important strategies for improving inflammatory profiles [5], and one study reported that combined high intensity aerobic and resistance training showed marked improvements in the inflammatory profile [6]. Changes in body composition, especially abdominal fat mass, is an important factor when life style intervention is planned to improve metabolic abnormalities such as insulin resistance or change inflammatory markers or adipocytokines [7].

AminiLari et al. [8] reported the effect of 12 weeks of aerobic, resistance or combined exercise on omentin-1 levels and insulin resistance among type 2 diabetic middle-aged women. Combined aerobic and resistance exercise efficiently improved homeostasis model assessment of insulin resistance (HOMA-IR) and increasing serum omentin-1. Authors also showed that omentin-1 level is inversely associated with HOMA-IR, body fat percentage, and body mass index (BMI). However, resistance exercise alone did not improve HOMA-IR despite significant body weight reduction. On the other hands, in aerobic exercise group, body weight reduction was not significant but percentage of body fat decreased significantly as well as HOMA-IR. Fasting blood sugar decreased significantly in all intervention groups. Overall, in combination exercise group, all variables included in the results were improved including BMI, muscle amount as well as insulin resistance and omentin-1 level. In this paper, it would have been better to estimate the visceral obesity by measuring the abdominal circumference.

There are several mechanisms involved behind the beneficial effects of exercise on metabolic abnormalities. However, further studies are needed to identify the molecular mechanisms underlying the effects of exercise and what the roles of so-called beneficial adipocytokines and/or harmful adipocytokines are in this action. Also, the effects of exercise on metabolism seems to be dynamic and influenced by other factors; thus, the type, duration, and intensity of exercise should be stated for adequate assessment of lifestyle modification for resolving metabolic abnormalities. Furthermore, researches that also include diet, medicine, and other comparisons are needed

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to uncover the effects of exercise on metabolic abnormalities.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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