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Effect of Inspiratory Muscle Training on Blood Glucose Levels and Serum lipids in female patients with type 2 diabetes

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Abstract: Chronic hyperglycemia and hyperlipidemia can lead to serious long-term complications in type 2 diabetes. Physical exercise can effectively lower blood glucose levels and serum lipids. However, women with type 2 diabetes are more likely to have limited physical activity due to comorbidities, and/or reduced physical exercise opportunities due to personal, social, and cultural barriers. This would address the need for exploring alternative exercise forms. Thus, the purpose of this study is to investigate the effect of inspiratory muscle training (IMT), as a potential alternative, on blood glucose levels and serum lipids in female patients with type 2 diabetes. Twenty eight female patients with type 2 diabetes were included in this study. The patients gave their written consents and were equally assigned to either a study (n=14) or a control (n=14) group. Patients in both group received oral anti-diabetic pharmacological therapy. Only patients in the study group received inspiratory muscle training at 30% of maximal inspiratory pressure, once daily, five days/week, for 8 weeks. Fasting and 2-h post-prandial blood glucose, cholesterol, low density lipoproteins, triglycerides, and HOMA-IR were measured at baseline and after the intervention. Unpaired t-test was used to calculate differences between the two groups, and Paired t-test was used to calculate changes within each group. none of the measured variable has been significantly changed in either group, and nor were there any significant differences between the two groups. IMT with low inspiratory loading fails to demonstrate any significant improvements in blood glucose levels, serum lipids, and/or HOMA-IR in female patients with type 2 diabetes.

Key words: Type 2 diabetes, Inspiratory muscle training, Blood glucose, Serum lipids, HOMA-IR.

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