



**Libyan International Medical University
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Lifestyle intervention

Type 2 Diabetes management

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Abstract

Lifestyle intervention is an integral part of diabetes management along with dietary and pharmacological interventions. Lifestyle interventions, which include increased physical activity for example aerobic exercises, such as walking or dancing or combination with resistance training, such as yoga, which improves blood supply to the muscles. These have potential to prevent T2DM in high-risk individuals

Introduction

Obesity, which is one of the foremost reasons for type 2 DM development and associated with higher CV risk, can be controlled with significant lifestyle modifications. Physical activity tends to increase the blood flow to the muscles resulting in increased uptake of glucose and oxygen. Hepatic glucose production and peripheral glucose uptake maintain glucose homeostasis in the resting and fed states¹. It is also known to improve the overall health status, ameliorate depressive symptoms, decrease the rate of hospitalizations, and improves psychological distress in patients with T2DM. Regular aerobic training not only reduces glycemic burden but also helps to prevent atherosclerotic CVD by several mechanisms. In older adults with diabetes, regular walking was associated with reduced all-cause and CVD mortality⁴. Yoga is another important way of overcoming the chronic stress and negative affective state in patients with T2DM. In the process of yoga, abdominal stretching leads to rejuvenation/regeneration of pancreatic cells and increases the utilization and metabolism of glucose in peripheral tissues, liver, and adipose tissues through enzymatic process. Furthermore, it improves blood supply to the muscles and enhances insulin receptor expression causing increment of glucose uptake and thus reduces blood sugar.¹

Discussion

The first study is a combination of two (2006 and 2013) studies that were aimed at the general lifestyle modifications of obese and non-obese patients between the age group 25 to 35. Method: 709 patients which report that lifestyle modification reduces risk of T2DM by 35.4%; risk reduction was equally effective in patients with different BMI (obese and non-obese) and age groups (25 and 45 years).¹

The second study was aimed at the effects of aerobic training on glycemic control. Method: A group of 47 Adults with T2DM following a simple aerobic walking program report a significant decrease (96%) in glycemic parameters (Glycated hemoglobin { A1C} and Fasting plasma glucose {FPG}).¹

The third study was aimed at understanding the beneficial effects of combination training on patients with type 2 diabetes. Method: 192 male and 240 female patients revealed that combined training decreased glycemic burden, abdominal adipose tissue, and lipid profiles (total cholesterol and triglycerides) without any adverse effects in all the patients.²

The fourth study was concerned with the influence of Time of Yoga Practice and Gender Differences on Blood Glucose Levels in Type 2 Diabetes. The method: Total of 189 subjects with T2DM 86 male, 103 female who underwent a 10-day yoga program which includes practical and theory lecture sessions for 60min every day, either in the morning or evening. Fasting plasma glucose (FPG) were measured on every day for 10 days. Results of the study showed that in individuals with T2DM, a significantly higher reduction in FPG was observed while practicing yoga in the evening sessions than in the morning sessions. Likewise, a significant reduction in FPG was observed only in women who practiced yoga in the evening than in the morning, while the reduction was not statistically significant in men.³

Conclusions

In conclusion the overall health of patients with type 2 diabetes improved with significant lifestyle modifications. Physical activity improve the overall health status, depressive symptoms, decrease the rate of hospitalizations, and improves psychological distress in patients with type 2 diabetes .

Recommendations

ADA recommended that adults with T2DM should engage in 150 min or more of moderate to vigorous intensity physical activity per week, spread over at least 3 days/week, with no more than two consecutive days without activity or up to 30–45 min on 3–5 days/week or an accumulation of 150 min/week of moderate-intensity aerobic activity (50–70% of maximum heart rate)

Bibliography

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