



Effect of 8 Weeks Endurance and Strength Training on Heart Rate Variability (HRV) and in Type-2 Diabetic Neuropathy women

Poster Presentation

1Shadi Fathi * ; 2Aylar Birar; 3Ayda Asgharnejad

¹MSc student of sports physiology, Mohaghegh Ardabili University, Ardabil, Iran(sh.fathi765@gmail.com)

²MSc student of sports physiology, Mohaghegh Ardabili University, Ardabil, Iran

³MSc of Sports Physiology, Mohaghegh Ardabili University, Ardabil, Iran

Abstract

Introduction: Heart rate variability is a non-invasive, practical, and reproducible indicator of autonomic nervous system function. Distributed autonomic nerve damage in the heart and blood vessels in diabetic patients may lead to Cardiac autonomic neuropathy (CAN) and an increased risk of death. Therefore, the prevention of CAN is important for people with diabetes. The aim of this study was to evaluate the effect of 8 weeks of endurance and strength training on heart rate variability (HRV) in type 2 diabetic women with peripheral neuropathy.

Methods: In this quasi-experimental study, 30 diabetic women with peripheral neuropathy were randomly divided into three groups; Endurance training (10 people), strength training (10 people), and control group (10 people) were divided. Exercises were performed three times a week for 8 weeks. Patients' heart rate variability (HRV) was measured by a holter monitoring device for 20 minutes before and after 8 weeks. Data were analyzed using statistical methods: repeated measures analysis of variance 2×2 , dependent t, one-way analysis of variance (ANOVA).

Results: The results of intergroup changes also showed that all-time axis and frequency axis values (except LF Power parameter) of training groups were significantly different from the control group.

Conclusion: Both strength and endurance training seem to improve the function of the autonomic cardiovascular system and thus increase heart rate variability in diabetic patients with peripheral neuropathy. According to the present study results, it is suggested that strength and endurance training be used to improve time-based indices of heart rate variability (SDNN and rMSSD) in diabetic patients with peripheral neuropathy.

Keywords

Strength; endurance; type 2 diabetes; HRV

Reference:

1. Canani, L. H., Copstein, E., Pecis, M., Friedman, R., Leitão, C. B., Azevedo, M. J., & Gross, J. L. 2013. Cardiovascular autonomic neuropathy in type 2 diabetes mellitus patients with peripheral artery disease. *Diabetology & Metabolic Syndrome*, 5(1): 54.
2. ChuDuc, H., NguyenPhan, K., & NguyenViet, D. 2013. A review of heart rate variability and its applications. *APCBEE Procedia*, 7(2013): 80-85.

