

عنوان مقاله:

Effect of ۱۲ Weeks Aerobic Training on FOXO1 Gene Expression in Pancreatic Tissue of Type ۲ Diabetes Wistar Rats

محل انتشار:

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خلاصه مقاله:

Objective: Exercise as a non-pharmacological treatment plays an important role in regulating and reducing the inflammatory cytokine associated with beta cell function. Genetics is one of the most important and effective factors in the incidence of diabetes, in most cases. The present study aims to explain the effect of ۱۲ weeks aerobic training on FOXO1 expression in pancreatic tissue, insulin and blood glucose levels in male wistar rats with type ۲ diabetes mellitus. **Materials and Methods:** In this study, ۱۶ male wistar rats were divided into diabetic control and diabetic training groups. The two groups were diabetic with nicotine amide and streptozotocin injections and the training group did aerobic exercises for treadmill for ۱۲ weeks. **Results:** The results of the study showed a significant increase in FOXO1 expression after ۱۲ weeks of aerobic training (P-value: ۰.۰۲۷), which resulted in a significant decrease in blood glucose concentration (P-value: ۰.۰۰۰۱). **Conclusion:** The induction of type ۲ diabetes leads to a reduction in the expression of FOXO1 gene in the tissues of the pancreas in experimental rats, which is associated with a decrease in serum levels of insulin and an increase in blood glucose levels. On the other hand, ۱۲ weeks of aerobic training of ۵ sessions per week leads to a significant increase in the expression of FOXO1 gene, with decreasing glucose and increased serum insulin in the pancreatic tissue of diabetic rats.

کلمات کلیدی:

FOXO1 gene expression, Type ۲ diabetes mellitus, Aerobic exercise, Pancreatic beta cells

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