

第二型糖尿病患者執行有氧運動之血糖立即反應和長期成效-前驅研究.

Immediate Serum Glucose Response and Long-term Effects of Aerobic Exercise in Type II Diabetes Patients: A Pilot Study

鄭綺

摘要

本研究目的在探討第二型糖尿病患者執行三十分鐘有氧運動後血糖的立即變化，以及十週運動訓練後之成效。以類實驗法選取十二位患者為運動訓練組，十五位為控制組。運動訓練計畫共十週，每週三次每次約一小時，包括暖身運動、騎三十分靜態腳踏車、和冷卻運動。實驗組患者在每次運動前後需測試血糖值，並於第一週和第十週分別測試兩組病患的日常活動狀態和生活品質。所得資料以 t 檢定、配對 t 檢定、逐步迴歸、皮爾森積相關等方法分析。結果顯示，三十分鐘有氧運動後，血糖值由 157.25mg/dl 顯著下降至 96.83mg/dl($t=5.62$, $p<0.0001$)，而運動前的血糖值與血糖下降的量有顯著的正相關($r=0.80$, $p=0.002$)。運動訓練十週後，病患的生活品質指數雖未有顯著的改變，但平均每週活動的熱量消耗顯著的增加($t=2.78$, $p=0.01$)。

Abstract

The purpose of this study was to examine acute and long-term effects of aerobic exercise training. A quasi experimental design was used. The experimental group underwent a 10-week aerobic exercise training program. The control group did not receive any instruction related to exercise. The exercise training program consisted of a warm-up period, an aerobic exercise period (30 minutes), and a cool-down period, three times per week for 10 weeks. Serum glucose level was determined by using the mini Accutrend monitor before and after each exercise session, Physical activity status and quality of life were measured at the first week and the tenth week, respectively. Data analysis was based on twenty-seven type II diabetes patients. Twelve subjects were assigned to the exercise training group, whereas the remaining 15 subjects served as non-exercising control subjects. Results of the study demonstrated that the serum glucose level was significantly decreased from 157.25 mg/dl to 96.83 mg/dl after 30 minutes aerobic exercise ($t = 5.62$, $p < 0.0001$). The serum glucose before

exercise is significantly related to the changes of serum glucose after 30 minutes exercise ($r = 0.80$, $p = 0.002$). Although significant improvement was not observed in quality of life, physical activity increased significantly after 10 weeks exercise training