# 補充維生素 E 對第 2 型糖尿病患者體內抗氧化狀況及脂質過氧化之影響

# Vitamin E Supplementation on the Antioxidative Status and Lipid Peroxidation in Subjects with Type 2 Diabetes Mellitus


中文摘要

本實驗之目的在探討補充維生素 E 對血糖控制良好的第 2 型糖尿病患體內抗氧化的狀況及脂質過氧化代謝之影響，並進一步瞭解能否預防或減少併發症之發生。受試者為 45 位第 2 型糖尿病患者，依隨機方式分成三組，採取雙盲方法給予安慰劑、維生素 E 400 IU 及維生素 E 800 IU，為期 6 個月，分別在 0、3 及 6 個月做體位測量、血液生化檢查及飲食評估。共有 36 位全程完成本實驗之研究。實驗結果顯示體內維生素 E 的濃度，隨著補充維生素 E 後，有明顯增加；受試者在補充維生素 E 後，隨時間和劑量皆有意義延長血漿中 LDL 氧化延遲時間(LDL oxidative lag-time)，並減少脂質過氧化產物(MDA production)，但血中抗氧化酵素活性無明顯改變，除補充維生 E 800 IU 3 個月後，麩胱甘肽過氧化酶（glutathione peroxidase）活性有明顯增加。因此本研究發現血糖控制良好的第 2 型糖尿病患在補充維生素 E 後，能顯著延緩低密度脂蛋白的氧化作用，進而降低動脈粥狀硬化症的發生。



關鍵詞：第 2 型糖尿病、維生素 E、抗氧化酵素、脂質過氧化物



英文摘要

The propose of the study is to investigate the effect of vitamin E supplement on the antioxidative status and lipid peroxidation in blood glucose well-controlled type 2 Diabetes Mellitus (DM) patients, and further to understand whether it could prevent or decrease the side-effect incidence. Thirty-six Type 2 DM patients were randomly and double-blindly assigned to three groups as follows: placebo group, vitamin E 400 IU group, and vitamin E 800 IU group. The anthropometrics measurement, blood biochemical data, and dietary assessment were collected at the 0, 3, and 6 months. Results showed the blood vitamin E content was significantly increased with the vitamin E supplementation by doses and duration. Furthermore, it is significantly prolonged the serum LDL oxidative lag time and decreased the serum lipid peroxidation (MDA production) by increased supplemented dose and duration. However, the blood antioxidative enzymes activity (GPx and SOD) showed no change except the 800 IU vitamin E supplemented for three months. Consequently, the study showed that after vitamin E supplementation the LDL oxidation of the well-controlled DM patients was significantly decreased, and this may further

decrease the atherosclerosis incidence.

Keywords: Type 2 Diabetes Mellitus, vitamin E, antioxidative enzyme, lipid peroxidation