

# 八十九年度行政院國家科學委員會專題研究計畫進度報告

NSC 89-2314-B-002-128-M52

氧化性脂蛋白對血管通透性之病生理影響

## **The Pathophysiological Role of Oxidized-Lipoprotein in the Change of Vascular Permeability**

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執行期限：自民國89年8月1日起至民國90年7月31日止

### **Background**

The transfer process in human arterial wall has been studied by only a few investigators. Currently, there is still no widely accepted and clinically noninvasive method to measure the systemic vascular permeability. In our previous study, we used fluorophotometry to evaluate the vascular endothelial integrity in vivo in hyperlipidemic rabbits. The vascular permeability change correlated well with the serum cholesterol level and occurred in the very early stage of atherosclerosis.

### **Purpose**

To evaluate the status of blood-aqueous barrier (F60) and to define the significant determinants of vascular permeability in hyperlipidemic patients.

### **Methods and Results**

Fifty-eight males and 74 female patients (aged  $53.6 \pm 10.6$  years) underwent risk stratification, physical and blood chemistry examinations. Fluorophotometry examination was also performed in these hyperlipidemic patients. The relationship between the blood ocular barrier and blood chemistry and multiple risk factors was studied.

### **Results**

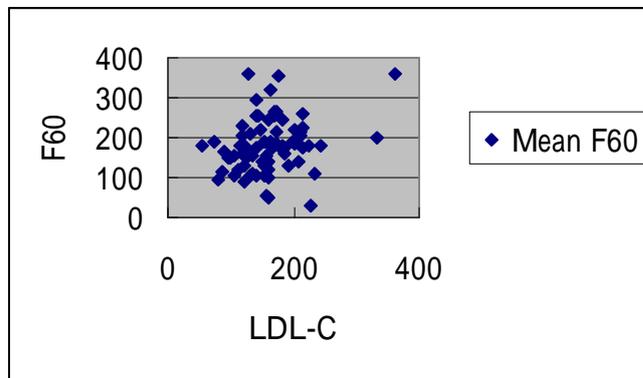
The F60 value was the lowest in the premenopausal female, higher in male, and the highest in postmenopausal females. It was higher in the aged patients, those with

diabetes mellitus, or those with vascular diseases. However, the F60 value was lower in the patients with HDL  $\leq 60$  mg/dl. The F60 value also correlated positively with the patients' age, number of risk factors, cholesterol, LDL (Fig.1), T-CHO/HDL, LDL/HDL (Fig. 2), glucose, and HbA1c levels, and correlated negatively with the HDL level. By multivariate stepwise linear regression analysis, the vascular permeability value correlated significantly with the LDL/HDL ratio, age, diabetes mellitus, and cholesterol level. Other risk factors or the serum TG level were not significant independent predictors for the F60 value.

### Conclusion

The vascular permeability could be evaluated noninvasively by fluorophotometry. It was independently determined by the patients' lipid profile, age, and the existence of diabetes mellitus in hyperlipidemic patients.

**Fig.1**



**Fig.2**

