

CHOLESTEROL CONTENT OF HIGH DENSITY LIPOPROTEIN  
(HDL)-SUBFRACTIONS AS AN INDICATOR  
OF RISK OF CORONARY HEART DISEASE (CHD)

M.I.F.P. Jayawardena & T.M.S. Atukorala  
Dept. of Biochemistry, Faculty of Medicine Colombo 8.

Epidemiological studies have shown an inverse relationship between prevalence of CHD and HDL-Cholesterol concentrations. It has been suggested that HDL<sub>2</sub>-cholesterol is more responsible for this association than total HDL-cholesterol<sup>(3)</sup>.

The usefulness of the measurement of cholesterol content of HDL-subfractions in predicting risk of CHD was evaluated in 33 healthy subjects and in 30 patients with CHD in the age group 20-50 years.

A double precipitation technique was used to separate the HDL-subfractions<sup>(2)</sup> and the cholesterol content was estimated by an enzymic method<sup>(1)</sup> (Boehringer-Mannheim reagent Kit No. 236691).

Patients had significantly higher concentrations of total cholesterol and lower concentrations of HDL-cholesterol than healthy subjects. However, only 6.7% of patients had very low total HDL-cholesterol concentrations indicative of a high risk of CHD. In contrast, the HDL<sub>2</sub>-cholesterol concentration of patients was almost half that of healthy subjects, while the HDL<sub>3</sub> cholesterol concentration was similar in patients and controls. This resulted in a markedly lower mean HDL<sub>2</sub>-cholesterol : HDL<sub>3</sub>-cholesterol ratio of  $0.48 \pm 0.04$  in patients as compared to a ratios of  $0.80 \pm 0.02$  in healthy subjects. Thus, the measurement of cholesterol content of the HDL<sub>2</sub> subfraction is a more sensitive indicator of risk of CHD than total HDL-cholesterol.

The authors thank the National Institute of Health Sciences, Kalutara for financial support.

References

1. Allain, C.C. et.al. (1974) Clinical Chemistry 20(4):470-475.
2. Fellin, R. et.al. (1985) Clinical Chimica Acta, 47, 233-240
3. Martini, S. et.al. (1984) Clinica Chimica Acta 137, 191-198.

09th Dec. 1987 (Wednesday) 09.30 a.m. - 09.45 a.m.