

## **A pilot study on pattern B lipoprotein profile in Malaysia**

### **ABSTRACT**

**Introduction:** Dyslipidaemia is a recognised conventional risk factor for cardiovascular disease (CVD). However, even when traditional lipid parameters are normal, CVD risk can exist. Small dense lowdensity lipoprotein cholesterol (sdLDL) has appeared as a significant risk marker for CVD. This study aimed to determine the prevalence and associated factors of atherogenic lipoprotein Pattern B in the Malaysian population. **Materials and methods:** This cross-sectional study included 150 subjects aged 30 years and above who attended a health screening in a Malaysian tertiary institution. Sociodemographics, clinical characteristics and laboratory parameters (lipids, glucose, and sdLDL) were obtained. Lipoprotein subfraction was analysed using the polyacrylamide gel electrophoresis method. **Results:** Malays and females made up the majority of subjects and the median age was 37 years. Normolipidaemic Pattern B was significantly higher in women ( $p=0.008$ ). Significant independent predictors of Pattern B were gender ( $p=0.02$ ), race ( $p=0.01$ ), body mass index (BMI) [ $p=0.02$ ] and lipid status ( $p=0.01$ ). Triglyceride was the only independent predictor of sdLDL ( $p=0.001$ ). **Conclusion:** The prevalence of Pattern B of 33% in this study was comparatively high, of which 6.7% were normolipidaemic. Chinese males with dyslipidaemia and increased BMI independently predicted Pattern B. Differences in triglyceride levels alone among these ethnic groups do not fully explain the differences in the prevalence of Pattern B although it was the only lipid parameter to independently predict sdLDL. Individuals with atherogenic normolipidaemia are at greater risk for a CVD event as they are not included in the protective measures of primary CVD prevention.

**Keyword:** Atherogenic normolipidaemia; Cardiovascular risk; Small dense low-density lipoprotein cholesterol (sdLDL); Pattern B