

C-REACTIVE PROTEIN AND THE RISK OF CARDIOVASCULAR DISEASE AMONG MIDDLE AGED INDIVIDUALS OF THE UNIVERSITY OF SRI JAYEWARDENAPURA

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Cardiovascular disease (CVD) has been reported as the second most common cause of death worldwide. All CVD cannot be explained by traditional risk factors. Inflammation plays a major role in CVD. C-Reactive Protein (CRP), one of the inflammatory markers, has been reported to increase during atherogenesis. High levels of high sensitive C-Reactive Protein (hsCRP) has been identified as a risk factor for CVD. This study determines the correlation between hsCRP and the risk of CVD. This study also identifies the association between hsCRP levels and traditional cardiac risk factors.

Hundred and fifteen (115) individuals, between the ages of 40-65 years, of the University of Sri Jayewardenepura were recruited for this descriptive cross sectional study. Their baseline characteristics such as age, gender, smoking status, BMI (Body Mass Index), diabetes status, cholesterol levels, blood pressure levels, hsCRP levels were obtained. Risk of CVD was calculated by using Framingham Risk Score (FRS) which is a multiple risk prediction model. Level of hsCRP was measured by automated measurements using photometric technique.

The median hsCRP level of the participants was 1.1×10^6 ng/L. Forty six percent had low levels ($<1 \times 10^6$ ng/L) of hsCRP and 54% had high levels ($>1 \times 10^6$ ng/L). Among overweight individuals 65% had high levels of hsCRP. Even though a higher percentage of individuals with diabetes, elevated levels of systolic blood pressure, high total cholesterol, high LDL (Low Density Lipoprotein) had high levels of hsCRP, the association was not significant. Correlation coefficient between FRS and hsCRP was 0.006 and only forty percent individuals with high hsCRP levels had high FRS. Therefore, there was no significant correlation between hsCRP and FRS. These findings suggest that hsCRP and the FRS might be measuring different aspects of CVD risk.

The median hsCRP value for Sri Lankan population was lower than that of the Western population. There was a significant association found between BMI and high hsCRP level. The predictive ability of the hsCRP cannot be inferred as this was a cross sectional analysis. Furthermore the small sample size may have underestimated the association between the factors. The findings of this study indicate that hsCRP could not be used as a single indicator to predict the risk of CVD instead of the FRS and without considering other traditional risk factors.