

## Investigation of Cardiovascular Disease Risk among Patients Attending the Medical Clinic of University Hospital KDU, Using Lipid Indices and ASCVD Risk Calculator

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Accurate risk assessment of cardiovascular disease (CVD) plays a pivotal role in preventing coronary heart disease, stroke, etc. which could be life threatening. This study aimed at investigating the correlation of Atherogenic Index of Plasma (AIP) and Atherogenic Coefficient (AC) with Atherosclerotic Cardiovascular Disease (ASCVD) Risk Calculator. Patients (153) suffering from diabetes mellitus, anaemia, hyperthyroidism, etc. satisfying the two inclusion criteria; age group of 40-79 years and having undergone serum lipid profile testing for cardiovascular risk assessment while having no clinical history of myocardial infarction or chest pain were selected from Medical Clinic of University Hospital KDU, Sri Lanka during 1 month period. Socio-demographic data were collected via interviewer-based questionnaires. Drug-history, blood pressure values were extracted from patients' histories and lipid parameters from lab reports. Statistical analysis was carried out using SPSS version 20. Results revealed that elevated systolic blood pressure and hyperglycaemia were predominant risk factors in this population with prevalence of 79.3% and 71.1% respectively. Moreover, elevated systolic blood pressure also correlated with 10-year ASCVD risk ( $r=0.386$ ). 10-year ASCVD risk did not correlate with either AIP or AC, whereas AIP correlated with Triglycerides (TG) ( $r=0.829$ ) and High Density Lipoprotein (HDL) Cholesterol ( $r=-0.682$ ). Thus, AIP and AC showed more potency in CVD risk estimation than using traditional lipid parameters alone, especially when lipid parameters were within normal range, which would have otherwise masked or underestimated the CVD risk. Hence, these indices can be used as biomarkers of CVD risk assessment and should be incorporated into routine clinical investigations.

**Keywords:** *Atherogenic Index of Plasma (AIP), Atherogenic Coefficient (AC), Atherosclerotic Cardiovascular Disease (ASCVD) risk calculator*