**PATHOGENESIS OF ATHEROSCLEROSIS IN THE YOUNG:**

**TIME TO LOOK BEYOND DIABETES, HIGH CHOLESTEROL AND TOBACCO**

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**Introduction:** Atherosclerosis is the predominant cause of cardiovascular diseases such as myocardial infarction and stroke which confer significant morbidity and mortality. Atherosclerosis is increasing in younger age groups. The causes are not completely clear. Therefore, we evaluated the influence of the three main traditional cardiovascular risk factors namely diabetes, high cholesterol and tobacco in a young sample of patients with atherosclerosis aged < 50.

**Methods:** Anonymous data of adult patients aged < 50 with a diagnosis coding of atherosclerosis was obtained using the ACALM (Algorithm for Co-morbidity, Associations, Length of stay and Mortality) study protocol. Diabetes was defined as a HbA1c of > 48 mmol/mol as per local standard. High cholesterol was defined as cholesterol > 5.0. Analyses was performed in SPSS.

**Results:** The total sample was 139 patients with atherosclerosis with mean age 42.7 years. A diagnosis of Diabetes (Elevated HbA1C) was the cause of the atherosclerosis in only 14 patients(11.5%) and a diagnosis of high cholesterol (cholesterol > 5.0mmol) was only present in 20 patients (14.4%). Tobacco was responsible for atherosclerosis in another 14 patients (11.5)%. Overall, only 48 patients out of the 139 patients had a distinct cause for atherosclerosis. The overwhelming majority of 91 patients (65.4%) had no measured cause (no diabetes, no high cholesterol or tobacco) but yet had atherosclerosis.

**Conclusion:** The cause of atherosclerosis in young patients seems to be beyond the traditionally measured and accounted for cardiovascular risk factors/causes. Further genetic/epigenetic studies are required to evaluate the cause of the significant proportion of unexplained atherosclerosis in this young group of patients.