Relation between insulin resistance and severity of coronary artery disease in acute coronary syndrome patients.

Thesis submitted in partial fulfilment of MD degree in cardiovascular medicine

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Abstract:

Background: coronary artery diseases are of the most common causes of death in the world. multiple studies suggest that insulin resistance is associated with coronary artery disease in non-diabetics and diabetic patients. **Aim of the study**: to evaluate the relation between insulin resistance (IR) and coronary artery disease incidence and severity of lesions.

Methods: A cross-sectional study performed to 100 patients admitted with acute coronary syndrome to coronary care unit then performed Coronary angiography at cardiology department in 2022. blood samples were taken from the patients, including fasting glucose and insulin level. Insulin resistance was estimated using the homeostatic model assessment index of IR (HOMA-IR) calculated with the following formula: Baseline serum insulin concentration (mU/L) x Baseline plasma glucose (mg/dL)/405 and TYG index calculated from this formula: Ln (Fasting triglycerides (mg/dL) x Fasting blood glucose(mg/dL)/2). Finally Coronary angiography and severity calculation using Genseni Scoring system.

Results: 83% of study group show high level of HOMA-IR level however only 34% of cases where diabetics all cases show high level of TyG index which is another index for insulin resistance. mean fasting insulin was (22.5±22.6). The mean level of HOMA-IR was (12.6±20.1) and the mean level of TyG index was (10±50.2) There was no statistically significant difference with p-value <0.05 in Genseni level between HOMA-IR levels and TYG index levels.

Conclusions: The study showed a significant association between coronary heart disease incidence and insulin resistance in diabetic and non-diabetic patients but no correlation with CAD severity.