Background: The clinical implication of insulin resistance has extended beyond diabetes mellitus to include ischemic heart disease, dyslipidemia, hypertension and features of metabolic syndrome. Non diabetic patients with acute coronary syndrome and elevated admission insulin resistance index (AIRI) may have certain clinical angiographic and therapeutic strategies. Objectives: It was aimed to illustrate the value of AIRI in non diabetic patients with acute coronary syndrome (ACS) and identify the angiographic CAD severity in relation to AIRI. Study design: Cross sectional study. Patients and methods: Includes 120 non diabetic patients presenting with acute chest pain who were admitted to the Coronary Care Unit. Admission glucose and insulin concentration were measured and the AIRI were calculated. ECG was carried out and the cases were grouped as; unstable angina (UA) (40 cases) and acute myocardial infarction (AMI) (40 cases). They were compared to 40 cases of the stable angina (SA) group and the control group (40 cases). The studied cases were examined clinically stressing on the other criteria of insulin resistance syndrome. The following laboratory tests were undertaken including random plasma glucose, HBA1-c, lipid profile, cardiac enzymes (CK-MB, LDH, troponin T). The angiographic study was carried out for patients of each diseased group and 20 cases of the stable angina group. Results: AIRI was significantly elevated in AMI (3.9 ± 0.1) and UA (3.01 ± 0.2) when compared to the group of SA and the control group. AIRI was significantly higher in AMI when compared to the UA group. Coronary angiography revealed one coronary vessel involvement in 10%, 20%, and 10% of SA, UA and AMI, respectively. While, two vessel involvement was detected in 0%, 30%, and 60% of SA, UA and AMI, respectively. Three coronary vessel disease was not detected in SA but was evident in 5% of UA and 30% of AMI. The relation of AIRI of the studied groups by the calculated Chi-square revealed a significant elevation of AIRI in AMI and UA. Cases with three vessel affection demonstrated higher AIRI. Conclusion: Elevated AIRI can predict coronary artery events in non diabetic patients with acute chest pain. Multiple coronary vessel involvement is common in such cases and suitable planned invasive therapeutic strategies have to be considered.