Abstract

Aims and Objectives: Obesity is established risk factor for coronary artery disease and acute coronary syndrome (ACS). Association between obesity and ACS are independent of other traditional risk factors suggestive of possible contribution of other fat related mediators like adiponectin. Adiponectin is a recently discovered adipocyte-specific cytokine which, in contrast to other adipokines, has anti-inflammatory, anti-thrombotic, and anti-atherogenic properties. It is abundant in the plasma of normal subjects, but decreased in conditions such as obesity and type 2 diabetes mellitus. Furthermore in healthy individuals, low plasma adiponectin levels have been associated with increased risk of cardiovascular events. Present study evaluates the relationship between adiponectin and ACS. The association between plasma adiponectin levels and coronary lesion severity on coronary angiography (CAG) was also assessed using Gensini score.

Methods and Results: Thirty patients with acute coronary syndromes(ACS) undergoing CAG in critical care department of Cairo University from April 2009 to April 2010 were enrolled and divided into three subgroups according to presentation-patients with ST elevation myocardial infarction (STEMI) (n = 10) , with Non ST elevation myocardial infarction (NSTEMI) (n = 12) and with unstable angina(UA), in addition to nineteen apparently normal volunteers as a control group, comparable in age, gender, waist to hip ratio and BMI. After statistical analysis, patients with ACS were found to have lower adiponectin (4.55 ± 2.78 µg/ml) level than control group (9.01 ± 3.2 µg/ml) and the difference was statistically significant ($p < 0.001$). Moreover, lower levels of adiponectin were associated with more severe coronary artery lesion evaluated by Gensini score ($p < 0.0001$). Furthermore, A significant difference was reported between three subgroups regarding the severity of CAD evaluated by **Gensini score**, where more severe conditions were reported in the NSTEMI than in the STEMI than in the unstable angina group (98.67 ± 34.04, 85.9 ± 35.32 and 25.25 ± 11.94, $P < 0.0001$ respectively).

Conclusion: Present study concludes that lower adiponectin levels are independently associated with higher risk of ACS and more severe coronary lesions.

Key words: acute coronary syndrome, adiponectin, Gensini score, coronary angiography.