

Comparison of Epicardial Fat Volume and Coronary Calcification in Diabetic Versus Non-Diabetic Patients Detected by CT Coronary

Abdulrahman Alradaei, Master in Cardiology, Alazhar University

Background:

Coronary computed tomography angiography (CCTA) has evolved as a non-invasive imaging technique for evaluation of stenosis in the coronary arteries, but it is also widely used in quantitative plaque assessments. Evaluation of EFV(epicardial fat volumes) can also be performed on the same images.

Aim:

To compare the relation between epicardial fat volume and coronary artery atherosclerosis in diabetic versus non diabetic patient by CT coronary angiography.

Patients and methods:

We included 200 patients. They were divided into 2 groups; diabetic group, and non-diabetic group. All patients in this study have undergone full history taking, clinical examination including BMI, standard ECG, routine laboratory investigations, and multi-slice CT angiography.

Results:

When comparing diabetic and non-diabetic groups, we found that ,degree of stenosis in coronary artery were higher among the diabetic group compared to the non-diabetic one. Multiple vessel affection was more common among the diabetic group when compared with non-diabetic group ($p<0.001$). Overall, Ca total score was significantly higher among the diabetic group compared to the non-diabetic one ($p<0.001$).

EFV was significantly higher among diabetic patients compared to the non-diabetic group ($p<0.001$).

EFV was significantly higher among patients with multiple vessel affection when compared with those with single vessel and normal vessels ($p <0.001$). Higher EFV was correlated with presence of DM more in patient longer than 5 years duration ($p<0.001$). It was also positively correlated with total Ca scores among our study population ($r=0.311$, $p=0.000$).

Conclusion:

A clear association was found between the DM and EFV and both presence of calcific plaques and degree of stenosis among whole study population.