TCTAP A-162
Relationships Between Epicardial Fat Volume, Agatston Score and Presence of Coronary Stenosis Measured on Computed Tomographic Coronary Angiography
Aravind Murugesan,1 Arun prasath Palamalai1
1Mahatma Gandhi Medical College and Research Institute, India

BACKGROUND Computed tomographic coronary angiogram (CTA) is currently performed as an emergency procedure to rule out significant coronary artery disease in evaluating the patient presenting with acute chest pain. Apart from ruling out coronary artery disease, it can also serve to risk-stratify the patient with the additional information it provides in the form of Agatston score and epicardial fat volume (EFV). We evaluate the presence of any significant relationship between EFV, Agatston score and the presence of coronary artery stenosis.

METHODS A total of 32 patients who had undergone CTA for suspected coronary artery disease were included as subjects in the study. All studies were performed on a GE Optima CT660 64-detector row machine with 128-slice axial reconstruction and retrospective ECG gating. Reconstructed slice thickness was 0.625 mm and images were analyzed on an Advantage (GE) workstation. The pericardium was isolated from the surrounding structures with semi-automatic contour tracing from the level of the space of the pulmonary artery to the most inferior slice containing the pericardium. For isolation of fat in the selected volume, a density range of -190 to -30 Hounsfield Unit was used. This was modifiable by the investigator if deemed appropriate. The volume of the isolated voxels was assessed as the EFV. Agatston score assessment was semi-automated using Smartscore 4.0 (GE) software.

Vessel stenosis was analyzed with the CardIQ Xpress 2.0 (GE) software. The stenosis in the major vessels was graded as present or absent with a 50% reduction in luminal diameter as the cut-off value. The relationships between EFV, Agatston score and age were assessed by Kendall’s tau test; relationship between EFV and the prevalence of coronary stenosis was assessed by the Mann-Whitney test and multiple logistic regressions were used to analyze the relationship of the presence of coronary stenosis with EFV, Agatston score and age.

RESULTS Presence of coronary stenosis was significantly associated with EFV at p < 0.05. EFV, Agatston score and age showed significant relationships at p < 0.05. Multiple logistic regressions showed significant relationship between coronary stenosis and Agatston score at p < 0.05.

CONCLUSION EFV and Agatston score measured on CTA are strongly associated with the presence of coronary stenosis. CTA can thus not only serve to rule out coronary artery stenosis but also risk-stratify the patients with additional measurements like epicardial fat volume and Agatston scoring.

TCTAP A-164
Influence of Anemia in Post PCI Vascular Complications Risk
Maddury Jyotsna,1 Oruganti Harish,1 Janaswamy Vibhav Sri Narayana1 Nizam’s Institute of Medical Sciences, India;2 Osmania Medical College, India

BACKGROUND Following Percutaneous coronary intervention (PCI) if vascular complications occurs with fall of hemoglobin, is known to be associated with bad long term outcomes of PCI. The aim of the present study is to evaluate the influence of anemia on post PCI vascular complications.

METHODS We retrospectively analyzed CAD patients who underwent PCI, for the effect of anemia on the vascular complication, in our institution in 2013. Anemia is defined as Hb:<12.5 g/dl in females and Hb:<13.5 g/dl in males. Vascular complications included bleeding (local puncture site or other sites like GIT, Nasal), hematoma, pseudo aneurysm, av fistula, retroperitoneal hemorrhage and arterial occlusion.

RESULTS Total of 950 pts (males=725, females=225) were analyzed. 596 pts were hypertensive (62.7%) and 415 were diabetics (43.7%). 558 subjects were found to be anemic (58.7%) and 392 were non-anemic (41.3%). Other demographic data is represented in the table. Radial arterial approach was done in 514 patients.

Vascular complications occurred in 38 patients (4%). 16 out of 558pts with anemia and 22 out of 392 patients without anemia had vascular complications, but the difference is not statistically significant [chi square p value=0.06, odds ratio of 0.51(95%CI -0.25 to 1.03 and relative risk of 0.53 (95%CI - 0.28 to 1.3)]. Means anemia is not predisposing factor for vascular complications.

CONCLUSION Our study suggests that patients with anemia may not be at higher risk for vascular complications including both access site and non-access site bleeds, following PCI in obstructive CAD patients compared to normal Hemoglobin patients.

TCTAP A-163
Association of Hypertension on Development of Coronary Collaterals in Severe Coronary Artery Disease
Solaiman Hossain1
United Hospital Limited, Bangladesh

BACKGROUND Hypertension increases the risk of cardiovascular diseases by two folds, including coronary artery disease and is associated with an increased frequency of higher classes of angina pectoris and a higher probability of having severe atherosclerotic lesion in the major coronary arteries. Coronary collateral vessels or ‘natural bypasses’ are anastomotic connections without an intervening capillary bed between portions of the same coronary artery or between different coronary arteries. This collateral circulation is extensively visible to an area of occlusive coronary artery disease. The prognosis of patients with an acute myocardial infarction may be beneficially affected by the presence of coronary collateral circulation. The patients with coronary artery disease (CAD) develop high degree collaterals and coronary collaterals are present in one fourth of patients with normal coronary arteries or non-obstructive CAD. There are significant associations between the prevalence and quality of collateral vessels with angiographically extensive coronary artery diseases.

METHODS This was a prospective observational cross-sectional study carried out in the department of cardiology of NICVD, Dhaka, Bangladesh during the period from October 2013 to June 2014. A total of 334 patients were examined to include in the study among them 118 patient of severe coronary artery disease (CAD) were included who fulfilled the inclusion and exclusion criteria. From where 63 patients were CAD with hypertension (Group -I) and 55 patients were CAD without hypertension (Group -II). Based on Rentrop Grading the study patients were divided in two groups, patients with poor collaterals (Grade 0 & 1) and good collaterals (Grade 2 & 3). Data compare the coronary collaterals in hypertensive patients with those without hypertension with severe coronary artery disease.

RESULTS The data shows that good collateral circulations were higher with duration of hypertension. The difference were statistically significant Induration <3 years and duration ≥10 years in both groups (p<0.05). The pattern of vessel involvement in double vessel disease and triple vessel disease (p<0.001) and dyslipidemia (p<0.004) appeared to be significant predictor of hypertension controlling for other factors in the model. People with hypertension are around four times more likely to have good collateral circulation, multiple vessel disease and around 12 times more likely to have dyslipidemia.

CONCLUSION It is concluded that the patients of hypertension developed higher grades of coronary collaterals which increases with duration of hypertension inpatients of sever coronary disease. Involvements of coronary arteries were more extensive in patients of hypertension with severe coronary artery disease.