SUMMARY

There is some controversy about non-Q-wave myocardial infarction, its evolution and prognosis. Recent studies showed that inspite of low immediate morbidity and mortality between non-Q-wave myocardial infarction, long term risk of ischemia, reinfarction or sudden death is equal or even greater in non-Q-wave than among Q-wave infarction patients.

Therefore, the goal of the present study was to evaluate the differences in the coronary anatomy and left ventricular function using coronary angiography and left ventriculography between non-Q-wave and Q-wave myoacrdial infarction patients to help in development of treatment strategy.

The study population included 49 patients with myocardial infarction presented by typical cardiac pain more than 30 min. with rised creatine kinase level at least twice the normal limits with an abnormal ECG changes i.e. ST-segment elevation, depression T wave changes without evolution of Q-wave in non-Q-wave infarct group (group I, n=25) but with evolution of pathological Q-wave in Q-wave infarct group (group II, n=24).

Patients with prior infarction, receiving thrombolytic therapy and who with contraindications to coronary angiogarphy were excluded.

Patients with non-Q-wave infaction and Q-wave infarction were analyzed as regard to medical history, clinical examination, 12-lead electrocardiogram, laboratory tests and cardiac catheterization.

Patients of both groups underwent coronary angiogarphy and left ventriculogarphy using standerd views including right and left anterior oblique views with carnial and caudal angulations and using digital quantitative angiogarphy system.

Coronary angiograms analyzed by experienced angiographer as regard to number of vessels affected (single, double or tripple), degree of lumen stenosis (total or subtotal), site of lesion (proximal, midsegment or distal), type of lesion (A,B,or C), TIMI flow grade (0,1,2,or 3), collateral flow (antegrade or retrograde) to the occluded artery.

Left ventriculography were analyzed regarding to global and regional ejection fraction, thrombi and aneuysm formation.

Patients with non-Q-wave and Q-wave infarct groups were well matched for age, height, body weight, heart rate, systolic and diastolic blood pressure, smoking habit, history of angina (to exclude) and the most common risk factors (Diabetes, Dyslipidaemia, Hypertension) .

Peak level of creatine kinase activity was significantly lower among non-Q-wave versus Q-wave groups (638 ± 180 versus 1475 ± 420 IU, $p< 0.01$).

Patients with non-Q-wave infarction were more likely to present with ST-segment elevation in an inferior leads (60% versus 37.5%) whereas patients with Q-wave infarction, the site of infarction was likely anterior (32% versus 54%).

The in-hospital course of the patients showed significant increase in bundle branch block among Q-wave infarct patients while there was insignificant difference in the incidence of ventricular arrhythmias, atrioventricular block, congestive heart failure and cardiogenic shock between the both groups of infarction.

Coronary angiographic findings revealed that single vessel disease in non-Q-wave infarct group was 68% versus 62.5% and double vessel disease was 20% versus 16.6% compared to Q-wave infarct group. However, multivessel disease was more common in Q-wave group (12% versus 20.8%).

The occlusive lesions in the left circumflex artery was (16% versus 28.2%) while left anterior descending artery was (47% versus 50%). The right coronary artery is considered the culprit vessel in non-Q-wave infarction patient (36% versus 20.5%) among patients with non-Q-wave infarct compared with Q-wave infarct .

The proximal site of occlusive lesion within infarct-related vessels was likely similar in non-Q-wave infarct and Q-wave infarct groups (41.1% versus 41%)

The severity of lesions was higher in left circumflex and right coronary arteries in non-Q-wave while it was more in left anterior descending artery among Q-wave infarction group.

In non-Q-wave infarct patients, the infarct-related vessels were left anterior descending, right coronary and left circumflex arteries (47%, 36%, and 16%) respectively.

While, in Q-wave infarct group, the infarct-related vessels were left anterior descending, left circumflex and right coronary arteries (50%, 28.2% and 20.5%) respectively.

Right coronary artery was more commonly classified as the infarct-related artery in patients who evolved a non-Q-wave infarct patients (36% versus 20.5%).

TIMI flow grade 0 among the non-Q-wave versus Q-wave infarct patients was 35.2% versus 30.7%, and TIMI flow grade 1 was 14.7% versus 10.2%. In addition, TIMI flow grade 2 was 20.5 % versus 30.7%. However, complete infarct-related artery patiency (TIMI grade 3 flow) was likely similar (29.4% versus 28.2%).

The development of visible collateral vessels (grade 3) was more in non-Q-wave infarct patients compared to Q-wave infarct group (14.7% versus 7.7%).

Totally coronary occlusive lesion of infarct-related artery in non-Q-wave infarct compared to Q-wave infarct patients was 38.2% versus 25.6%, however, subtotally one was nearly similar (23.5% versus 23%).

Frequency of different types of angiographic lesions between the non-Q-wave infarct versus Q-wave infarct groups was 29.4% versus 41% for A type; 26.4% versus 25.6% for B type, 44.1% versus 33.3% for C type.

Global left ventricular ejection fraction percentage (EF%) was higher in non-Q-wave infarct group compared to Q-wave infarct group (54 ± 9.4% versus 46±12%).

Regional shortening of radii in the various left ventricle zones were non-significantly differ among non-Q-wave infarct or Q-wave infarct patients except in anteriobasal section of left ventricle was 30±8.4% versus 22.5±8%. Severe left ventricular dysfunction (i.e. ejection fraction ≤35%) had a greater percentage between patients evolving a Q-wave infarct (20.8% versus 0%; $p<0.01$), furthermore, left ventricular ejection fraction ≥55% was higher in non-Q-wave infarct compared to Q-wave infarct patient (44% versus 33.3%).