Title: Single Vessel disease involving Left anterior descending – The culprit artery in young (Age < 45) patients with Acute ST elevation Myocardial infarction

Category: Prevention

ABSTRACT

Background: Acute Myocardial infarction is relatively less common in patients aged < 45 yrs. However literature reports that it is still more prevalent in young patients from South Asian population.

Objective: To determine the anatomical characteristics of coronary lesions in Young STEMI patients.

Methodology: It was a cross-sectional study conducted on patients aged ≤ 45 years of age who presented with acute ST elevation MI to emergency department at the Aga Khan University Hospital and agreed for immediate coronary Catheterization (and Primary Percutaneous intervention.) The study was conducted from 2013 to 2018. Patients with prior history of MI, prior Coronary artery bypass graft or prior PCI were excluded. Information was collected through Performa and details of risk factors and Coronary lesion anatomy was collected.

Results: A total of 169 cases were included. Out of these, 89.9% (N=152) patients were male and only 9.5% (N=16) patients were females. Mean age in this population was 39.5 (SD 5.1). In risk factors for myocardial infarction; mean Body mass index in this population was 27.9 (SD 5.7) with 51% (N=73) patients being Obese. Family History of Coronary Artery disease in a young relative was positive in 47.9% (N=81), Tobacco use was prevalent in 45% (N=76) of patients, Diabetes in 37% (N=63), and Hypertension in 32% (N=55).

Coronary lesion anatomy: Sixty six percent of patients had isolated Single Vessel Coronary Artery Disease (N=111), 23% had Two vessel CAD (N=39) and 8.9% (N=15) had Triple vessel disease. Out of these, 76.9% (N=130) had lesion in Left anterior descending/Diagonal (LAD/D1); Of these, 56.2% of lesions were found to be between Osteo-proximal to Mid LAD segments and 29% lesions in Mid to distal LAD. Right coronary artery /Posterior descending artery (RCA/PDA) was involved in 37.3% (N=63) with 17.8% lesions in between Osteo-proximal to mid RCA and 26% lesions in mid to distal RCA. Left circumflex/Obtuse Marginal (LCx/OM1) was involved in 24.3% (N=41), with 11.8% of disease in between osteo-proximal to mid segments and 11.2% of disease after origin of first Obtuse Marginal (OM1).

Conclusions: Almost two third of young (Age < 45) patients with acute ST elevation MI had Single Vessel disease. LAD was the most commonly involved culprit vessel and the most common site was Osteo-proximal to mid LAD.