Experience with primary percutaneous coronary interventions in ST elevation myocardial infarction in tertiary care hospital

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Background: Coronary artery disease is currently the most common, non-infectious disease in India. STEMI is the most catastrophic presentation. Primary PCI is the preferred reperfusion strategy in patients with STEMI presenting within 12 h to an experienced center. There is paucity of data regarding primary PCI in our milieu. This study is designed to prospectively look at the various aspects of contemporary practice of primary PCI at a tertiary care hospital and also to evaluate the 30-day outcomes.

Methods: All patients who present to emergency room as STEMI within 12 h of symptom onset and give informed consent for primary PCI as the reperfusion therapy are being enrolled for this study. The detailed demographic data is being collected systematically. In addition the ECG and echocardiographic findings the angiographic findings and procedural details are reviewed by an independent investigator. Procedural success is defined as achievement of vessel patency to a residual stenosis <30%. The patients are being followed during their in-hospital stay for any acute complications and at 30 days for occurrence of major adverse cardiac events (all cause mortality, acute and sub acute stent thrombosis as per ARC definition, target lesion revascularization, and major bleeding as per BARI criteria). The 30 day follow up results are being recorded.

Results: In this ongoing study 56 patients, 51(89.7%) males, mean age 59.3 years. 46 (81.4%) patients presented as Killip class I, 6 (11.1%) as Killip class II and 2 (3.7%) as Killip III and IV each. 32 (58.6%) patients had inferior while 21 (38.2%) had anterior wall MI at presentation. The mean time to hospital arrival from symptom onset was 3.4 h and mean door to balloon time was 59.9 min. On angiography 20 (37.03%) had single vessel disease while 22 (40.7%) patients had more lesions. All patients were loaded with aspirin 325 mg. The second antiplatelet agent was the clopidogrel in 16.6% cases and ticagrelor in 66.6% cases, given in emergency room, while prasugrel was given in 16.6% cases in cath lab after confirmation of coronary anatomy. Heparin alone was used in 12 (21.4%) cases, bivalirudin in 6 (10.7%) and heparin + GpIIb/IIIa inhibitors were used in 38 (67.8%) patients and the most common agent being abciximab (61.6% cases). Thrombus aspiration was done in 27 (48.1%) patients. All patients were treated with DES except one patient in which bioresorbable scaffold (Absorb) was deployed. Culprit vessel revascularization was the default strategy in majority (81%). In 5 cases multivessel revascularization was done, out of which it was done during the index procedure in 3 patients and as a staged procedure in 2 patients. There was one in-hospital death due to no reflow phenomenon during index procedure. At 30 days 2 patients died, one with sepsis and multorgan failure and other had sudden death at home without establishing the cause and included as probable stent thrombosis. Bleeding complications included BARC subtype 1 in 13%, and type 2 in 3.4% patients. No major bleeding, BARC subtype 3, was recorded at 30 days follow up. All the bleeding complications were occurred in those patients, who received heparin + Gp IIb/IIIa inhibitor.

Conclusions: This ongoing study throws light on important aspects of the clinical and procedural profile of patients presenting with STEMI who are undergoing primary PCI. Data of 100 patients will be presented.

Experience with PCI in CKD patient (disease pattern, immediate and short term outcome)

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Background: Cardiovascular diseases (CAD) are the leading cause of morbidity and mortality in patients of CKD and they begin well before the onset of dialysis. Optimal approach of revascularization in patients with kidney disease has not been determined. With the availability of drug eluting stents & DAP, the scenario has changed. The objective of study was to see disease pattern, immediate and short term outcome of CAD in patients having CKD, with PCI.

Methods: We included 305 patients of CKD (with creatinine clearance <60 ml/min/1.73 m$^2$ having CAD, who underwent PCI with DES (study group) and compared with similar number of age and sex matched controls with creatinine clearance ≥60 ml/min/1.73 m$^2$, having CAD who underwent PCI with DES (control group). The clinical and angiographic follow-up data before and after PCI was collected at 1 month, 6 months and 12 months, using a standard questionnaire. Data about amount of dye used, type of dye used, renal outcomes at discharge, type of antplatelet used, beta blockers, ACE inhibitors/ARB, statins used & Duration of stay in hospital was collected. Using a multiple logistic regression mode multivariable analysis was performed.

Results: The base line variables were similar in the 2 groups. There was a gradual increase of prevalence of HTN as creatinine clearance falls. More number of patients in study group had diabetes as compared to control group but the difference between two groups was not statistically significant. There was no significant difference between two groups regarding smoking and dyslipidemia. Height was not significantly different between two groups; however weight & BMI was significantly lower in study group. Ejection fraction was significantly lower in study group as compared to control group (p < .001). Mean ejection fraction was 47.39% in study group; it was 51.67% in control group. Hemoglobin, BUN, serum creatinine & mean eGFR were significantly lower in study group. To estimate creatinine clearance EPI-CKD equation was used.

Unstable angina as indication for PCI was significantly more in study group. In study group more patients had triple vessel disease, more lesions was of diffuse & calcified type (p < .001). Type B lesions were more in control group and Type C lesions were more in study group (p < .001). Angiotensin converting enzyme inhibitors or angiotensin receptor blockers were used less in study group as compared to control group. Amount of dye used during PCI was higher in control group. Iodixanol (iso-osmolar) was used more in study group. More number of patients in study group developed contrast induced nephropathy. Rate of complete revascularization achieved was also less in lower creatinine clearance group (p < .001). Average number of days stayed in hospital was significantly more in study group (p < .001). Peri-procedural MI occurred.