

## Impact of delayed right coronary artery stenting on recovery of right ventricle function in patients with acute rightventricular myocardial infarction

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**Background:** Right ventricle myocardial infarction (RVMI) is an important subset of Acute Coronary Syndrome. Right Ventricle dysfunction (RVD) and its recovery are major determinants of the outcome. In centres which lack primary Percutaneous Coronary Intervention (PCI) facilities, thrombolysis is the main mode of treatment and these patients receive PCI at a later time.

**Aim:** To analyse the impact of late PCI on Right ventricle (RV) function recovery in acute RVMI patients.

**Methods:** This is a prospective analytical study done in Department of Cardiology at single-centre tertiary care hospital setting from January 2014 to July 2014. 43 Consecutive patients with Acute Inferior and RVMI with RVD presenting within 48 hours in the age group 18-65 yrs were enrolled. All eligible patients received Streptokinase infusion. All underwent detailed echocardiography for assessment of RV and LV function. RVD was defined with Tricuspid Annular Peak Systolic Excursion (TAPSE) <16mm, RV dimensions and RV systolic pressure. Patients without RVD, age more than 65years, presentation more than 48 hours, patients with cardiogenic shock, renal dysfunction, previous MI, LV dysfunction were excluded. All patient underwent coronary angiogram at the earliest and those with significant Right coronary artery (RCA) lesion had undergone PCI with Stenting.

**Results:** Of the 43 patients, 24 were males and 19 were females. 18 patients had significant lesion in RCA and underwent PCI with Stenting. 25 patients did not have significant lesion. All the patients were followed up daily with echo until discharge. RV function in patients who had undergone PCI improved (TAPSE 11 to 17) before discharge. Out of 25 patients who had insignificant lesion, in 11 patient, RV function did not improve. Factors associated with poor recovery were TIMI 1-2 flow, Diabetes mellitus and Female gender. **Conclusion:** RV function significantly improves in patients with RVMI even after late PCI.

## Readmission in the 30 days after percutaneous coronary intervention

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**Background:** Around one-tenth of post PCI patients are readmitted within 30 days of hospitalization. Identifying the causes of readmission may help identify strategies to prevent readmission.

**Methods:** All patients undergoing PCI (elective, urgent, and emergent) at our center between 1st January, 2014 and June 30, 2014, were prospectively followed. Patients readmitted to any hospital within 30 days of the index procedure were identified using telephonic follow-up.

**Results:** During the study period, 550 PCI were performed, and 33 patients (6.0%) were readmitted within 30 days. Of these, 31 (94%) had medical records available for review. Reasons for readmission included: complications related to the PCI (n = 4, 12.9%); non-PCI

cardiac causes related to index admission (n = 12, 38.7%); non cardiac causes related to index admission (n = 3, 9.6%); causes unrelated to the index admission (n = 12, 38.7%). Female sex, advanced age, peripheral arterial disease, and PCI complications during the index procedure were associated with 30-day readmission.

**Conclusions:** Readmissions within 30 days due to complications related to PCI performed on index admission are rare (0.7% of all PCI) and are an infrequent cause of readmission (<13% of readmissions). Thirty-day readmission after PCI should not be used as a quality metric of PCI performance.

## Analysis of myocardial blush and ST segment recovery after revascularization for prediction of recovery of LV function

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**Background:** ST Segment elevation recovery and the angiographic myocardial blush grade are useful markers of microvascular reperfusion after recanalization of the infarct related artery. The purpose of this study is to investigate the ability of a combined analysis of MB Grade and ST elevation (STe) recovery to identify different patterns of myocardial reperfusion shortly after thrombolysis or primary angioplasty and to predict 7 day and 6 month LV functional Recovery.

**Methods:** MB grade and STe recovery were evaluated in patients who underwent thrombolysis or primary PTCA (restoration of TIMI grade 3 flow) in 114 consecutive patients with STe acute myocardial infarction.

LV function was assessed by 2D echocardiograms before PTCA and at 7 days and 6 months thereafter.

**Results:** By combining MB and \_STe changes, 3 main groups of patients were identified.

Group 1 patients (n=60) had both significant MB (grade 2 to 3) and STe recovery ( $\geq 50\%$  versus basal \_STe) and a high rate of 7-day (65%) and 6-month (95%) LV functional recovery.

Group 2 patients (n=21), who showed MB but persistent \_STe, the prevalence of early LV functional recovery was low (24%) but increased up to 86% in the late phase

Group 3 patients (n=28), who had neither significant MB nor ST resolution, had poor early (18%) and late (32%) LV functional recovery.

**Conclusion:** After successful PTCA, integrated analysis of MB and STe recovery allows a real-time grading of microvascular reperfusion of the infarct area and predicts the time-course and magnitude of LV functional recovery.

## Clinical and angiographic outcomes of percutaneous intervention in chronic total coronary occlusion

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**Background:** Percutaneous coronary intervention has become common in the management strategy of patients with chronic

coronary total occlusion. However, despite improving techniques for opening chronic total occlusions, the benefit of successful recanalization of the artery remains unclear.

**Objectives:** The purpose of this study was to know the clinical characteristics and angiographic outcome of patients undergoing percutaneous coronary intervention in coronary total occlusion.

**Methods:** Consecutive patients undergoing nonurgent coronary angiography with CTO were prospectively identified from January 2013 to June 2014. Coronary total occlusion was defined as thrombolysis in Myocardial Infarction flow grade 0 and duration >3 months. Detailed baseline clinical, angiographic, electrocardiographic, and revascularization data were collected and compared successful versus failed procedures.

**Results:** Coronary total occlusions were identified in 76 patients and procedural success was seen in 83% patients (63 of 76). Majority of pts were male (80.95% vs 69.23) and in the age group of 51-60 yrs (46.03% vs 30.76%). Chest pain (50.0% vs 44.82%) and dyspnea (30.0% vs 34.4%) were predominant symptoms. Most patients had USA (55.55% vs 76.9%) and normal LV function was seen in 57.1% vs 12.69%. Most coronary total occlusion were located in LAD (38.09% vs 61.53%) & RCA (39.68 vs 38.46%). Fluoroscopic time (35.9 min vs 40 min) & contrast (165 ml vs 180 ml) used were more with failed procedures. 67% of pts received sirolimus DES. Three patients in failed procedure had perforation and tamponade requiring emergency surgery. At one year follow up 5 pts (7.69%) in successful group had restenosis requiring repeat PCI (4.7%) & CABG (3.17%).

**Conclusions:** Patients with successful recanalization of CTO with PCI have better symptom relief, better clinical outcome, improved left ventricular function and better long-term survival compared with patients in whom the attempt to re-canalize CTO has failed.

## Our experience with bioresorbable vascular scaffolds for real world type C lesions

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**Background:** Bioresorbable Vascular Scaffolds (BVS) has many potential advantages over the current drug eluting stents (DES). Their non inferiority against DES in type A lesions was shown in the ABSORB I trial. We wanted to present our experience with BVS in real world type C lesions.

**Aims:** To present the immediate procedural outcomes and the intermediate term outcomes of BVS in type C lesions and to describe the technical considerations of optimal deployment of BVS in these types of complex lesions.

**Methods:** We collected the data of all consecutive patients who underwent BVS at our centre from January 2013 to June 2014. The complexity of the lesion was scaled using the ACC/AHA criteria. All patients were preloaded with clopidogrel 300 mg or prasugrel 60 mg or ticagrelor 180 mg along with aspirin and were maintained on dual anti-platelet therapy for one year after the procedure. Clinical follow up for major adverse cardiovascular events were collected (death, non fatal MI, target vessel or lesion revascularisation).

**Results:** During the study period we have used 62 BVS in 52 patients out of which 18 were in type C lesions. Seven for Ostial lesions (3 aorto ostial and four non aorto ostial), three for chronic total occlusion (CTO) including one graft CTO, six for long lesions

> 30 mm that required overlapping scaffolds (14 scaffolds were used in these six patients with an average of 44 mm of BVS per patient) and two for bifurcation lesions in which the side branch closed requiring additional intervention (rescued with a DES in one case and BVS in the second case). OCT guidance was used in 14 out of the 18 cases and both IVUS & OCT was used in one patient. One patient had a re-stenosis requiring balloon dilatation at 6 months of follow-up.

**Conclusion:** BVS for type C lesions is feasible with excellent procedural and intermediate term outcomes. These results are from a single centre and needs to be proven in large multicentre studies with longer follow up. Technically the procedure is demanding as it is bulkier, radiolucent & requires intra coronary imaging to optimize the results.

## Comparison of outcomes of percutaneous coronary intervention on proximal versus non-proximal left anterior descending coronary artery: A cross-sectional study

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**Background:** Revascularisation of proximal left anterior descending coronary artery (LAD) has remained matter of debate since long. Data have shown more re stenosis in the proximal LAD as compared to non proximal LAD. However, with availability of 2nd generation stents, this gap seems to have reduced. In the present study, we compared outcomes of percutaneous coronary intervention (PCI) on proximal LAD versus non-proximal LAD.

**Method:** Of the 958 patients who underwent PCI by single operator during January 2003 to 2010, 351 patients were included for the analysis after excluding non LAD Percutaneous coronary intervention (PCI) patients who were lost to follow up. Baseline characteristics and in-hospital outcomes were compared in 83 patients with PCI on proximal LAD versus 268 patients with PCI on non-proximal LAD. Long-term PCI outcomes were also compared between these groups. The statistical methods included Chi-square test, Fisher's exact test, student's t-test, kaplan-meier analysis and multivariate regression model.

**Results:** Both groups had similar baseline characteristics. Among the angiographic and procedural characteristics, pre-dilatation and post dilatation done significantly higher in non-proximal LAD group ( $p < 0.0001$ ,  $p < 0.02$  respectively). Drug eluting stents were more used in LAD proximal group ( $p < 0.0002$ ) and also had larger stent diameter ( $p < 0.04$ .) There were no significant difference in 30 days mortality between the groups ( $p = 0.98$ ). However, In long-term follow-up, major adverse cardiac events [(MACE), death, myocardial infarction, stroke, and repeat procedures] were significantly higher in LAD proximal groups ( $p < 0.02$ ). Freedom from new revascularisation procedures (Proximal LAD 91.6% Vs non proximal LAD 98.1%,  $p = 0.0002$ ) and frequency of repeat hospitalization (Proximal LAD 13.3% Vs non proximal LAD 2.2%,  $p = 0.003$ ) were also superior in the non proximal LAD group.

**Conclusion:** In our study, there was no difference in the short-term clinical outcomes (MACE and its components) of LAD proximal and LAD non proximal PCI. However, long term outcomes were superior in LAD non proximal group.