place special emphasis on the detection of subclinical left ventricular (LV) systolic and diastolic dysfunction and the timely identification of risk factors for HF. Our goal was to describe the prevalence and determinants (risk factors) of LV diastolic dysfunction in asymptomatic elderly population which is expected to have higher prevalence of diastolic dysfunction.

Methods: We evaluated 103 asymptomatic elderly populations at random in the LTMG Hospital, Mumbai from January 2015 to June 2015. For this we have included the patient's relatives who were beyond 60 years of age with LV ejection fraction ≥60%. Patients with organic heart disease were excluded from the study. Data on demographics, baseline characteristics, and medical therapies was collected. In a randomly recruited population sample ($n = 103$; 53.3% women; mean age, 67.9 years), we measured early and late diastolic peak velocities of mitral inflow (E and A), pulmonary vein flow by pulsed-wave Doppler, and the mitral annular velocities (Ea and Aa) at 4 sites by tissue Doppler imaging. Stata SE 13.1 was used to analyse data. Fishers Exact test was applied to test the relationship of categorised independent and dependent variables.

Results: In the study population of 103, overall prevalence of diastolic dysfunction was 63.10% with the number of subjects in diastolic dysfunction groups 1 (impaired relaxation), 2 (elevated LV end-diastolic filling pressure), and 3 (elevated E/Ea and abnormally low E/A) were 43 (41.74%), 18 (17.47%), and 4 (3.88%), respectively (Table 1). We used Ar-A > 30 ms to confirm possible elevation of LV filling pressures in group 2. Only 38 (36.89%) patients had normal diastolic function. Predictors of diastolic dysfunction in elderly were identified as age >70 years ($p = 0.02$), type 2 DM ($p = 0.03$), and smoking ($p = 0.05$), though we did not find any significant difference correlating diastolic dysfunction with sex ($p = 0.09$) and hypertension ($p = 0.1$) (Table 2).

Conclusions: The overall prevalence of LV diastolic dysfunction in a random sample of an elderly population is as high as 63.10% with advanced age being the best predictor of diastolic dysfunction followed by diabetes mellitus and smoking, though gender and hypertension failed to predict the presence of diastolic dysfunction.

Table 1

Echo parameters (mean)	Normal function N = 38 (36.89%)	Grade I N = 43 (41.74%)	Grade II N = 18 (17.47%)	Grade III N = 4 (3.88%)
LA (mm)	38.8	40.6	42.5	41.4
LV (mm)	50.3	50.7	50.5	48.5
IVS (mm)	9.6	10.4	10.8	12.2
PW (mm)	8.5	9.2	9.6	10.4
EF (%)	68.4	66	71.8	71.6
E peak (cm/s)	78.3	53.8	81.3	63
A peak (cm/s)	60.6	78.9	82.2	96.2
E/A	1.37	0.7	1.02	0.65
IVRT (ms)	98.3	114.9	108.5	107.1
Ea peak	12.7	8.28	7.8	5.94
Aa peak	10.2	12.1	10.5	11.6
E/Ea ratio	6.37	6.66	10.6	10.7

Table 2

	Normal diastolic function N = 38	Diastolic dysfunction N = 65	p value
Age (mean)	65	71	0.02
Male (n, %)	14 (36.84)	34 (52.30)	0.09
Smoker	7 (18.42)	29 (44.61)	0.05
Diabetic	15 (39.47)	39 (60)	0.03
Hypertensive	20 (52.63)	37 (56.92)	0.10

Clinical and angiographic characterization of STEMI in women in Eastern India

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Introduction: India is now estimated to be the coronary artery disease (CAD) capital of the world. CAD among women as a group is less easily recognized worldwide and this problem is especially relevant in a developing country like India.

Aims and methods: Fifty female patients of STEMI, aged less than 65 years (mean 49 years) were assessed by clinical, biochemical, and coronary angiographic study. Main parameters observed were time of presentation and angiographic severity.

Results: Average duration of presentation to hospital from symptom onset was 28 h and only 30% ($n = 15$) patients presented within window period of 12 h. Single vessel disease (SVD) was noted in 70% ($n = 35$) patients. Double (DVD) and triple vessel disease (TVD) was seen in 16% ($n = 8$) and 14% ($n = 7$), respectively. Among specific coronary artery disease, LAD was involved in 78% ($n = 39$), LCX 26% ($n = 13$), and RCA 26% ($n = 13$). LMCA was involved in 8% ($n = 4$) cases.

Conclusion: This study reiterates the need of establishing systems for early recognition and awareness of CAD among women in India. As SVD is more common, complete revascularization through PCI is feasible and economically viable in this segment of the Indian population.

An observational, multi-centric, prospective study to understand the usage pattern of Ticagrelor in Indian patients with acute coronary syndrome

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Rationale: The choice of newer anti-platelet therapies and strategies is continuously evolving as well as the International guidelines for their use. The available data concerning the usage pattern of newer anti-platelet therapies in ACS patients is largely derived, essentially from clinical trials. The TREASURE observational study is designed to address the need to understand the usage pattern of Ticagrelor in real life scenario in large number of ACS patients in India.

The multicenter national participation will allow generating real life evidence by involving patients from different geographies and healthcare systems in India.

Objectives: To describe the usage pattern of Ticagrelor in various ACS patient population who undergo either PCI, CABG, or medical management in a real-life setting in India. Also to record various risk factors (i.e. elderly patients, diabetes, renal impairment, smoking, risk score, and their association with ACS and usage of Ticagrelor).

Methods: This is an observational, multi-centric, prospective study. Study intends to include 3000 subjects from 60 sites across India. Key inclusion criteria would be provision of subject informed

consent patients who had been hospitalized for ACS and are on Ticagrelor on discharge or on Ticagrelor therapy for ≤1 month will be enrolled in the study and followed up for a period of 12 months. Demographic data, diagnosis (type of ACS), management of ACS, laboratory investigations, relevant history, and physical examination will be collated.
Results: Study is expected to fill a significant gap existing in our knowledge to understand the usage pattern of Ticagrelor in real life scenario in large number of ACS patients in India. The aim of this national study is to understand the usage pattern (including the duration of treatment) of Ticagrelor in various ACS patient population undergoing PCI, CABG, or medical management in a real-life setting in India. Moreover, patients with various risk factors (i.e. elderly patients, diabetes, renal impairment, smoking, GRACE risk score) and their association with ACS and Ticagrelor usage will be measured.
The study started in May 2015 and approximately 100 patients have been enrolled till date.
Conclusion: The multicenter national study will allow generating real life evidence by involving patients from different geographies and healthcare systems in India. The study is intended to provide useful evidence of the Ticagrelor usage in variety of ACS patients in actual hospital settings.

Prognostic value of the SYNTAX score in predicting in-hospital mortality in coronary artery bypass patients – An Indian perspective

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Background: SYNTAX score is an objective scoring system to assess severity and extent coronary artery disease. To evaluate the prognostic value of the SYNTAX score in predicting in-hospital mortality in coronary artery bypass patients, at a tertiary centre in India.
Methods: A cohort of 325 patients who underwent coronary artery bypass surgery were included in this study from July 2012 to May 2014. They were divided into tertiles according to the SYNTAX score (0–22, 23–33, and above 33). The endpoint was in-hospital mortality.
Results: The mortality in SS tertiles were as follows: 0–22 = 6%; 23–33 = 4.2%, and above 33 = 14.3%. There was significant increase in mortality in the third tertile ($p = 0.0297$). SS above 33 had an odd's ratio of 3.036 ($p = 0.018$) for mortality.
Conclusion: Severity of coronary artery disease as measured by SS of more than 33 is a significant predictor of mortality after CAB surgery.

Correlation of mean platelet volume with angiographic severity of coronary artery disease, both stable angina and acute coronary syndrome: A comparative clinical study

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Background: Platelet activation and aggregation has been implicated in the pathogenesis of atherosclerosis and in the development of acute thrombotic event. Platelet volume is a marker of platelet activation and function, and is measured using mean platelet volume (MPV).
Aim: To investigate the relationship between MPV and angiographic severity of coronary artery disease in terms of SYNTAX score, both in stable angina and acute coronary syndromes.
Methods: In this study, a total of 160 patients were evaluated who presented with suspected CAD on clinical grounds. All patients underwent routine biochemical examination, complete blood count, and coronary artery angiography using standardized protocol. SYNTAX score was calculated using online software and correlation between MPV and coronary lesion severity was analysed using statistical software.
Results: Out of 160 patients, 37 (23.12%) patients presented with CSA and 104 (65%) patients with ACS; out of which 29 (18.12%) patients diagnosed with UA or NSTEMI and 75 (46.87%) patients with STEMI; 19 (11.87%) patients had normal coronary angiogram, allocated to control group. Mean age of the CSA patients was 58.16 ± 11.48 years, while in UA&NSTEMI and STEMI group it was 52.10 ± 8.52 years and 53.99 ± 11.83 years, respectively. 51.21 ± 9.43 years was the mean age in control group. 129 (80.6%) patients were male and 31 (19.4%) patients were female. ACS patients, i.e. UA&NSTEMI and STEMI patients had significantly higher MPV value than CSA and control group (8.86 ± 1.07, 8.83 ± 0.73 fL vs 8.42 ± 0.81, 7.50 ± 0.18 fL; $p < 0.001$). Mean SYNTAX score in CSA group was 16.54 ± 8.10 in male and 17.83 ± 7.41 in female; in UA&NSTEMI group, 19.27 ± 9.85 in male and 9.92 ± 9.89 in female with p value of 0.049. In STEMI group mean SYNTAX score was 19.73 ± 7.27 in male and 17.75 ± 2.79 in female. In low SYNTAX score group MPV values were significantly more in UA&NSTEMI patients and STEMI patients than CSA and control group (8.37 ± 0.76, 8.59 ± 0.62 fL vs 8.09 ± 0.62, 7.50 ± 0.18 fL; $p < 0.001$). In intermediate and high SYNTAX score group MPV did not differ significantly. MPV was significantly more in intermediate and high SYNTAX score category than low SYNTAX score, in all the three study groups. According to Pearson correlation analysis there was large positive relationship between MPV and SYNTAX score in all the three study groups. ROC curve analysis showed cut-off values of MPV for predicting the severity of SYNTAX score, were >7.7 fL for CSA group and >8 fL for ACS patients.
Conclusion: We found that higher MPV values are significantly associated with acute coronary syndromes than stable angina; higher the MPV value more severe and complex is the coronary artery disease, as demonstrated by the SYNTAX score analysis. MPV can be considered a marker of platelet reactivity or a risk factor for CAD. Large scale, randomized controlled trials are needed for further clarification.

Role of tirofiban in postinfarction angina who refused for early intervention – Our hospital experience

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Background: Postinfarction angina is not an uncommon complication after myocardial infarction (MI). Because of its high risk score (Unstable Angina class III, Risk score 9 if rest angina <48 h post MI) guidelines recommend early intervention in these patients. However, financial constraints and lack of wide insurance coverage in developing countries prohibit intervention in these patients. That is why we analysed the addition of tirofiban (GpIIb/IIIa inhibitor) which acts by inhibiting platelet aggregation a key mechanism in postinfarction angina.