

ORIGINAL RESEARCH

Assessment of profile of patients with acute STEMI

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ABSTRACT

Background:The present study was undertaken for studying the profile of patients with acute STEMI. **Materials & methods:**A total of 100 patients were enrolled. All patients of acute ST elevation MI meeting inclusion criteria were enrolled in the study after obtaining informed written consent. Detailed clinical history, details of clinical examination, ECG changes and 2D Echo changes were recorded. Inclusion Criteria included patients from age above 18 years of age which fulfil the criteria of Acute STEMI. All the results were recorded in Microsoft excel sheet and were analysed by using SPSS software. **Results:**Mean age of the patients was 54.23 years. 81.69 percent of the patients were males while the remaining were females. Chest pain, Breathlessness and Palpitation were seen in 80 percent, 38 percent and 15 percent of the patients respectively. Edema, Raised JVP, Peripheral pulses not palpable, Xanthoma, Carotid bruit, Corneal arcus and Locomotor brachialis were seen in 5 percent, 3 percent, 5 percent, 8 percent, 7 percent, 14 percent and 3 percent of the patients respectively. LVEF was $20 \geq$, 21 to 30, 31 to 40 and 41 to 50 in 6 percent, 5 percent, 8 percent, and 81 percent of the patients respectively. **Conclusion:**Chest pain was the most common presenting symptom. This demands the need of expansion of PCI service across different parts of country.

Key words: Myocardial infarction, Necrosis, Coronary heart disease

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INTRODUCTION

Acute ST-elevation myocardial infarction (STEMI) is an event in which transmural myocardial ischemia results in myocardial injury or necrosis. An ST-elevation myocardial infarction occurs from occlusion of one or more of the coronary arteries that supply the heart with blood. Coronary heart disease (CHD) is a major cause of mortality and morbidity all over the world. Although coronary heart disease (CHD) primarily occurs in patients over the age of 40, younger men and women can be affected. Most studies have used an age cut-off of 40 to 45 years to define "young" patients with CHD or acute myocardial infarction (MI).¹⁻³

Among patients suffering from acute myocardial infarction, 70% of fatal events are due to occlusion from atherosclerotic plaques. As atherosclerosis is the predominant cause of acute myocardial infarction, risk-factors for atherosclerotic disease are often mitigated in the prevention of disease. Initial evaluation should include a focused physical examination and a brief history. Patients should be asked about the characteristics of the pain and associated symptoms, risk factors or history of

cardiovascular disease, and recent drug use. Risk factors for an ST-elevation myocardial infarction include age, gender, family history of premature coronary artery disease, tobacco use, dyslipidemia, diabetes mellitus, hypertension, abdominal obesity, sedentary lifestyle, a diet low in fruits and vegetables, psychosocial stressors. Cocaine use can cause an ST-elevation myocardial infarction regardless of risk factors. History of known congenital abnormalities can be helpful.⁴⁻⁶ Hence; the present study was undertaken for studying the profile of patients with acute STEMI.

MATERIALS & METHODS

The present study was undertaken for studying the profile of patients with acute STEMI. A total of 100 patients were enrolled. All patients of acute ST elevation MI meeting inclusion criteria were enrolled in the study after obtaining informed written consent. Detailed clinical history, details of clinical examination, ECG changes and 2D Echo changes were recorded. Inclusion Criteria included patients from age above 18 years of age which fulfil the criteria of Acute STEMI. All the results were recorded

in Microsoft excel sheet and were analysed by using SPSS software.

RESULTS

Mean age of the patients was 54.23 years. 81.69 percent of the patients were males while the remaining were females. Chest pain, Breathlessness and Palpitation were seen in 80 percent, 38 percent and 15 percent of the patients respectively. Sweating, Dizziness, Syncope, Nausea, Vomiting and Abdominal pain were seen in 13 percent, 9 percent, 5 percent, 3 percent, 19 percent and 5 percent of the

patients respectively. Mean BMI of the patients in the present study was 26.8 Kg/m². Mean waist to hip ratio was 0.83. Mean serum creatinine levels and blood urea nitrogen levels were found to be 1.11 mg/dL and 29.3 mg/dL respectively. Edema, Raised JVP, Peripheral pulses not palpable, Xanthoma, Carotid bruit, Corneal arcus and Locomotor brachialis were seen in 5 percent, 3 percent, 5 percent, 8 percent, 7 percent, 14 percent and 3 percent of the patients respectively. LVEF was 20 \geq , 21 to 30, 31 to 40 and 41 to 50 in 6 percent, 5 percent, 8 percent, and 81 percent of the patients respectively.

Table 1: Clinical profile

Clinical profile	Number of patients	Percentage
Chest pain	80	80
Shortness of breath	38	38
Palpitation	15	15
Sweating	13	13
Dizziness	9	9
Syncope	5	5
Nausea	3	3
Vomiting	19	19
Abdominal pain	5	5

Table 2: Clinical evaluation

Variables	Number of patients	Percentage
Edema	5	5
Raised JVP	3	3
Peripheral pulses not palpable	5	5
Xanthoma	8	8
Carotid bruit	7	7
Corneal arcus	14	14
Locomotor brachialis	3	3

Table 3: Echo (LVEF%)

Echo (LVEF%)	Number of patients	Percentage
20 \geq	6	6
21 to 30	5	5
31 to 40	8	8
41 to 50	81	81
Total	100	100

DISCUSSION

Myocardial infarction or acute myocardial infarction (AMI) is a term for an event of heart attack. MI occurs when blood stops flowing properly to a part of the heart, and the heart muscle is injured because of lack of oxygen supply. And one of the coronary arteries which supplies blood to the heart develops a blockage due to an unstable build-up of plaques, white blood cells, cholesterol and fat. If the event becomes serious then it is called as "acute" AMI, acute myocardial infarction. Coronary spasm, emboli, or dissection of the coronary artery are causes of infarction in the absence of occlusive atherosclerosis, and are reported in 5–10% of patients with STEMI and 10–15% of patients with NSTEMI. Similar proportions of patients with non-ST-elevation acute

coronary syndromes (NSTEMACS) have angiographically normal coronary arteries despite elevated troponins and myocardial infarctions detected by MRI.⁷⁻¹⁰

Pfister R et al assessed 3,312 patients who were prospectively between 2006 and 2012 into a registry accompanying the "Cologne Infarction Model" STEMI network, with 68.4% primarily presenting to emergency medical service (EMS), 17.6% to non-PCI-capable hospitals, and 14.0% to PCI-capable hospitals. Median contact-to-balloon time differed significantly by FMC with 89 minutes (IQR 72–115) for EMS, 107 minutes (IQR 85–148) for non-PCI- and 65 minutes (IQR 48–91) for PCI-capable hospitals ($p < 0.001$). TIMI-flow grade III and in-hospital mortality were 75.7% and 10.4% in EMS, 70.3% and

8.6% in non-PCI capable hospital and 84.4% and 5.6% in PCI-capable hospital presenters, respectively (p both < 0.01). The association of FMC with in-hospital mortality was not significant after adjustment for baseline characteristics, but risk of TIMI-flow grade $< III$ remained significantly increased in patients presenting to non-PCI capable hospitals. Despite differences in treatment delay by type of FMC in-hospital mortality did not differ significantly.¹¹ George L et al aimed at finding out the patients' decision delay, prehospital delay, door-to-electrocardiography (ECG), door-to-needle, and door-to-primary percutaneous coronary intervention (PCI) times and their determinants among STEMI patients. Significant factors associated ($P < 0.05$) with patients' decision delay were alcoholism, symptom progression, and attempt at symptom relief measures at home. Prehospital delay was significantly associated ($P < 0.05$) with domicile, difficulty in arranging money, prior consultation at study center, place of symptom onset, symptom interpretation, and mode of transportation.¹²

In a previous study conducted by Duraes AR et al, authors prospectively enrolled all consecutive STEMI patients who were transferred to hospital. Regarding the times evaluated (SDT, TECG, TTRC and DCT), there was no statistically significant difference in relation to gender. STEMI Killip class I was more prevalent in males: 93 (86.1%) vs 12 (63.2%) cases with $P = 0.01$, and thrombolysis with a tendency towards the same direction: 17 (20%) vs 4 (8.3%) and $P = 0.07$. Women with STEMI had significantly higher prevalence of diabetes and low school education level, as well as a higher proportion of complicated STEMI (Killip class $\geq II$).¹³

CONCLUSION

Chest pain was the most common presenting symptom. This demands the need of expansion of PCI service across different parts of country.

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