

Original Research

Assessment of the profile of patient with acute ST elevation myocardial infarction

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ABSTRACT:

Background: An acute ST-elevation myocardial infarction (STEMI) is an event in which transmural myocardial ischemia results in myocardial injury or necrosis. The current 2018 clinical definition of myocardial infarction (MI) requires the confirmation of the myocardial ischemic injury with abnormal cardiac biomarkers. Hence; the present study was planned for assessing the profile of patient with acute ST elevation myocardial infarction. **Materials & methods:** A total of 50 patients were enrolled. This study was conducted by taking a detailed history, clinical examination, management and outcome as per the case record proforma. All the results were recorded in Microsoft excel sheet and were analysed by using SPSS software.

Results: Chest pain, Breathlessness and Palpitation were seen in 84 percent, 40 percent and 16 percent of the patients respectively. Sweating, Dizziness, Syncope, Nausea, Vomiting and Abdominal pain were seen in 12 percent, 10 percent, 8 percent, 4 percent, 16 percent and 6 percent of the patients respectively. Anterior wall and inferior wall was the predominant site of infarction on ECG, found to be present in 56 percent and 34 percent of the patients respectively. Anterior + Inferior wall involvement, Anterior + Lateral wall involvement and Inferior + Lateral wall involvement was seen in 4 percent, 4 percent and 2 percent of the patients respectively. **Conclusion:** Acute coronary syndrome occurs 5-10 years earlier in Indian population compared to western population. STEMI patients with a higher mortality are determined by their pre-hospital characteristics, i.e. higher risk.

Key words: Acute, Profile, Myocardial infarction

Received: 14 December, 2021

Accepted: 19 January, 2022

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This article may be cited as: Srivastava A, Vishwakarma H, Mishra P. Assessment of the profile of patient with acute ST elevation myocardial infarction. J Adv Med Dent Scie Res 2022;10(2):123-125.

INTRODUCTION

An acute ST-elevation myocardial infarction (STEMI) is an event in which transmural myocardial ischemia results in myocardial injury or necrosis. The current 2018 clinical definition of myocardial infarction (MI) requires the confirmation of the myocardial ischemic injury with abnormal cardiac biomarkers. It is a clinical syndrome involving myocardial ischemia, EKG changes and chest pain.¹⁻³

Prior to performing an ECG and collecting troponins the history and physical provide the only clues that lead to a diagnosis of myocardial infarction. 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 planned for assessing the profile of patient with acute ST elevation myocardial infarction.

MATERIALS & METHODS

The present study was planned in the department of internal medicine with the aim of assessing the profile of patient with acute ST elevation myocardial infarction. A total of 50 patients were enrolled. All

patients of acute ST elevation MI meeting inclusion criteria were enrolled in the study after obtaining informed written consent. They were, thereafter, evaluated for the following:

- a) Detailed clinical history
- b) Clinical examination
- c) ECG changes
- d) 2D Echo

INCLUSION CRITERIA

- Patients from age above 18 years of age which fulfil the criteria of Acute STEMI would be taken as study participants.
- Patient willing to give informed consent and abide by the study procedure

This study was conducted by taking a detailed history, clinical examination, management and outcome as per the case record proforma. All the results were recorded in Microsoft excel sheet and were analysed by using SPSS software.

RESULTS

Mean age of the patients was 56.8 years. 80 percent of the patients were males while the remaining were females. Chest pain, Breathlessness and Palpitation were seen in 84 percent, 40 percent and 16 percent of the patients respectively. Sweating, Dizziness, Syncope, Nausea, Vomiting and Abdominal pain were seen in 12 percent, 10 percent, 8 percent, 4 percent, 16 percent and 6 percent of the patients respectively. Edema, Raised JVP, Peripheral pulses not palpable, Xanthoma, Carotid bruit, Corneal arcus and Locomotor brachialis were seen in 6 percent, 4 percent, 2 percent, 6 percent, 6 percent, 16 percent and 4 percent of the patients respectively. Anterior wall and inferior wall was the predominant site of infarction on ECG, found to be present in 56 percent and 34 percent of the patients respectively. Anterior + Inferior wall involvement, Anterior + Lateral wall involvement and Inferior + Lateral wall involvement was seen in 4 percent, 4 percent and 2 percent of the patients respectively.

Table 1: Clinical profile

Clinical profile	Number of patients	Percentage
Chest pain	42	84
Shortness of breath	20	40
Palpitation	8	16
Sweating	6	12
Dizziness	5	10
Syncope	4	8
Nausea	2	4
Vomiting	8	16
Abdominal pain	3	6

Table 2: Clinical evaluation

Variables	Number of patients	Percentage
Edema	3	6
Raised JVP	2	4
Peripheral pulses not palpable	1	2
Xanthoma	3	6
Carotid bruit	3	6
Corneal arcus	8	16
Locomotor brachialis	2	4

Table 3: ECG Findings

ECG Findings		Number of patients	Percentage
Site of infarction	Anterior wall	28	56
	Inferior wall	17	34
	Anterior + Inferior wall	2	4
	Anterior + Lateral wall	2	4
	Inferior + Lateral wall	1	2

DISCUSSION

Myocardial infarction (from Latin: Infarctus myocardi, MI) 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.⁷⁻¹⁰

In the present study, mean age of the patients was 56.8 years. 80 percent of the patients were males

while the remaining were females. Chest pain, Breathlessness and Palpitation were seen in 84 percent, 40 percent and 16 percent of the patients respectively. Sweating, Dizziness, Syncope, Nausea, Vomiting and Abdominal pain were seen in 12 percent, 10 percent, 8 percent, 4 percent, 16 percent and 6 percent of the patients respectively. Edema, Raised JVP, Peripheral pulses not palpable, Xanthoma, Carotid bruit, Corneal arcus and Locomotor brachialis were seen in 6 percent, 4 percent, 2 percent, 6 percent, 6 percent and 4 percent of the patients respectively. Our results were in concordance with the results obtained by Duraes AR et al who also reported similar findings. In their study, authors enrolled all consecutive STEMI patients who were transferred to our hospital. Diabetes and low school education level were more prevalent in women than men, with statistical significance: 20 (48.8%) vs 18 (26.1%) with $P = 0.01$ and 26 (54.2%) vs 28 (32.9%) with $P = 0.04$, respectively. Regarding the times evaluated (SDT, TTEG, 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 $P = 0.07$.¹⁰

In the present study, anterior wall and inferior wall was the predominant site of infarction on ECG, found to be present in 56 percent and 34 percent of the patients respectively. Anterior + Inferior wall involvement, Anterior + Lateral wall involvement and Inferior + Lateral wall involvement was seen in 4 percent, 4 percent and 2 percent of the patients respectively. Similar results were reported in the study conducted by Tabatabai S et al. In their study, authors reported that the use of ambulance service was only 25%. Electrocardiogram findings of ST-segment elevation myocardial infarction (STEMI) were found in 57% and non-STEMI in 43%. History of prior ischemic heart disease was present in 21% of all cohort, diabetes in 36%, hypertension in 38%, and the current smoking rate was 35%. Reperfusion therapy was provided to 94% of the patients with STEMI; only 32% of them had primary angioplasty, and medical reperfusion was performed in 68%. One-third of them received thrombolysis within 30 min, and primary percutaneous coronary intervention (PCI) was provided to 38% within 90 min. All the patients received aspirin and adenosine diphosphate inhibitors within the first 24 h. The majority of the patients received other key medicines like beta-blocker, statin, and anticoagulant agents within 24 h. The in-hospital mortality rate was about 3%.¹¹

CONCLUSION

Acute coronary syndrome occurs 5-10 years earlier in Indian population compared to western population. STEMI patients with a higher mortality are determined by their pre-hospital characteristics, i.e. higher risk.

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