



Clinical Profile of Patients Presenting with Acute Myocardial Infarction in a known population

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Abstract

Background: This study was conducted to assess the Clinical Profile of Patients Presenting with Acute Myocardial Infarction in a known population.

Material and methods: The study was conducted on patients presenting with their first AMI. Patients presenting with their first ST-elevation myocardial infarction (STEMI) within 1 week were included in the study. Each patient was interviewed and encouraged to relate freely the circumstances surrounding the onset of the infarction event. Statistical analysis was conducted using SPSS software.

Results: In this study, out of 100 subjects, 25 were males and 75 were females. Chest pain was the most common manifestation of myocardial infarction accounting for 59 subjects. Hypertension was the most common risk factor for this condition followed by diabetes and smoking.

Conclusion: Chest pain was the most common manifestation of myocardial infarction. Hypertension was the most common risk factor for this condition followed by diabetes and smoking.

Keywords: MI, clinical profile, chest pain, diabetes, smoking, obesity.

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Introduction

Acute myocardial infarction is one of the leading causes of death in the developed world. The prevalence of the disease approaches three million people worldwide, with more than one million deaths in the United States annually. Acute myocardial infarction can be divided into two categories, non-ST-segment elevation MI (NSTEMI) and ST-segment elevation MI (STEMI). Unstable angina is similar to NSTEMI. However, cardiac markers are not elevated.^{1,2,3}

The symptoms of MI include chest pain, which travels from left arm to neck, shortness of breath, sweating, nausea, vomiting, abnormal heart beating, anxiety, fatigue, weakness, stress,

depression, and other factors. The immediate treatment of MI include, taking aspirin, which prevents blood from clotting, and nitro-glycerin to treat chest pain and oxygen. The heart attack can be prevented by taking an earlier action to lower those risks by controlling diet, fat, cholesterol, salt, smoking, nicotine, alcohol, drugs, monitoring of blood pressure every week, doing exercise every day, and losing body weight.⁴

Hence, this study was conducted to assess the Clinical Profile of Patients Presenting with Acute Myocardial Infarction in a known population.

Material and methods

The study was conducted on patients presenting with their first AMI. Patients presenting with their first ST-elevation myocardial infarction (STEMI) within 1 week were included in the study. Each patient was interviewed and encouraged to relate freely the circumstances surrounding the onset of the infarction event. Statistical analysis was conducted using SPSS software.

Results

Table 1: Gender-wise distribution of subjects

Gender	Number of subjects	Percentage
Males	25	25%
Females	75	75%
Total	100	100%

Overall, 100 subjects were evaluated out of which 25 were males and 75 were females.

Table 2: Presenting symptom of acute myocardial infarction.

Symptoms	Number of subjects
Chest pain with or without other symptoms	59(59%)
Pain in arm/wrist/jaw only	16(16%)
Nausea/vomiting only	10(10%)
Dyspnoea only	06(06%)
Epigastric pain only	07(07%)
Others	02(02%)

Table 3: Risk factors analysis.

Risk factors	Number of subjects	Aware	Unaware
Hypertension	65	45	20

Diabetes mellitus	15	12	03
Smoking	10	00	00
Positive family history	06	00	00
Obesity	04	00	00

In this study, out of 100 subjects, 25 were males and 75 were females. Chest pain was the most common manifestation of myocardial infarction accounting for 59 subjects. Hypertension was the most common risk factor for this condition followed by diabetes and smoking.

Discussion

An ST-elevation myocardial infarction occurs from occlusion of one or more of the coronary arteries that supply the heart with blood. The cause of this abrupt disruption of blood flow is usually plaque rupture, erosion, fissuring or dissection of coronary arteries that results in an obstructing thrombus. The major risk factors for ST-elevation myocardial infarction are dyslipidemia, diabetes mellitus, hypertension, smoking, and family history of coronary artery disease.^{5,6}

AMI, usually referred to in lay terms as a heart attack, is most often caused by a decrease or stoppage of blood flow to a portion of the heart, leading to necrosis of heart muscle. This is generally the result of a blood clot in the epicardial artery that supplies that territory of heart muscle. It is now recognized that, based on how AMI is defined, not all cases necessarily require a blood clot etiologically. In all living tissue such as heart muscle, the blood supply must equal the oxygen demands of the muscle. This is termed the supply–demand ratio. It is now appreciated that an imbalance in this ratio (too little supply or too much demand) as might occur with a very rapid heart rate (too much demand) or a drop in blood pressure (too little supply) may lead to myocardial damage without the presence of a blood clot per se. Over the last 10 years, a universal definition of AMI has been available to help the clinician with its diagnosis.^{7,8}

Hence, this study was conducted to assess the Clinical Profile of Patients Presenting with Acute Myocardial Infarction in a known population.

In this study, out of 100 subjects, 25 were males and 75 were females. Chest pain was the most common manifestation of myocardial infarction accounting for 59 subjects. Hypertension was the most common risk factor for this condition followed by diabetes and smoking.

Ferry AV et al⁹ evaluated patient-reported symptoms in 1941 patients (39% women) with suspected acute coronary syndrome attending the emergency department in a substudy of a

prospective trial. Standardized criteria defined typical and atypical presentations based on pain nature, location, radiation, and additional symptoms. Diagnosis of myocardial infarction was adjudicated using a high-sensitivity cardiac troponin I assay with sex-specific thresholds (>16 ng/L women, >34 ng/L men). Patients identified who were missed by the contemporary assay with a uniform threshold (≥ 50 ng/L) were reclassified by this approach. Type 1 myocardial infarction was diagnosed in 16% (184/1185) of men and 12% (90/756) of women, with 9 (5%) men and 27 (30%) women reclassified using high-sensitivity cardiac troponin I and sex-specific thresholds. Chest pain was the presenting symptom in 91% (1081/1185) of men and 92% (698/756) of women. Typical symptoms were more common in women than in men with myocardial infarction (77% [69/90] versus 59% [109/184]; $P=0.007$), and differences were similar in those reclassified (74% [20/27] versus 44% [4/9]; $P=0.22$). The presence of ≥ 3 typical features was associated with a positive likelihood ratio for the diagnosis of myocardial infarction in women (positive likelihood ratio, 1.18; 95% CI, 1.03–1.31) but not in men (positive likelihood ratio 1.09; 95% CI, 0.96–1.24).

Sinha SK et al¹⁰ assessed the risk factors, clinical presentation, angiographic profile including severity, and in-hospital outcome of very young adults (aged ≤ 30 years) with first acute myocardial infarction (AMI). Total of 1,116 consecutive patients with ST-segment elevation acute myocardial infarction (STEMI) were studied between March 2013 and February 2015 at LPS Institute of Cardiology, Kanpur, Uttar Pradesh, India. Mean age of the patients was 26.3 years. Risk factors were smoking (78.5%), family history of premature coronary artery disease (CAD) (46.8%), obesity (39.1%), physical inactivity (38.7%) and stressful life events (29.6%). The most common symptom and presentation was chest pain and anterior wall myocardial infarction (AWMI) in 94.8% and 58.8%, respectively. About 80.6% of patients had obstructive CAD with single vessel disease (57.6%), double-vessel disease (12.9%) and left main involvement (3.2%). Left anterior descending (LAD) was commonest culprit artery (58.1%) followed by right coronary artery in 28.2%. In-hospital mortality was 2.8%. Percutaneous coronary intervention was performed in 71.6% of patients. Median number and length of stent were 1.18 and 28 ± 16 mm, respectively. AMI in very young adult occurred most commonly in male. Smoking was the most common risk factor. AWMI owing to LAD artery involvement was the most common presentation. Mean time of presentation after symptom onset was 16.9 hours.

Conclusion

Chest pain was the most common manifestation of myocardial infarction. Hypertension was the most common risk factor for this condition followed by diabetes and smoking.

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