

Original article:

Study of clinical profile of patients of ST-segment Elevation in Myocardial Infarction

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Abstract:

Introduction: Cardiovascular disease is the greatest scourge affecting the industrialized nations. As with previous scourges - bubonic plague, yellow fever and small pox - cardiovascular disease not only strikes down significant fraction of population without warning but also causes prolonged suffering and disability in an even larger number. With this background present work was planned to study the clinical profile of patients of ST-segment Elevation Myocardial Infarction .

Materials & methods Population of interest: 38 patients of ST segment elevation myocardial infarction developing various arrhythmias within first 48 hours, admitted to Padmashree Dr. D. Y. Patil Hospital and Research Centre, Pimpri, Pune, and willing to participate in the study

Results: Maximum incidence of STEMI was seen in the age group of 48-67 years which accounted for almost 52% of the patients studied.

Conclusion: Sweating was the most commonly (84%) observed associated complaint, while others complained of dyspnoea, vomiting, palpitations and syncope.

Introduction

Cardiovascular disease is the greatest scourge affecting the industrialized nations. As with previous scourges - bubonic plague, yellow fever and small pox - cardiovascular disease not only strikes down significant fraction of population without warning but also causes prolonged suffering and disability in an even larger number. ¹Current demographic trends suggest, however that the scourge of cardiovascular disease, rather than waning may indeed be increasing in the years to come. The aging of the population will increase the overall burden of cardiovascular disease in society, even as adjusted rates of cardiovascular mortality plateau or decline. There is also a need to confront a renewed upswing of cardiovascular risk linked to worldwide epidemic of obesity, insulin resistance, diabetes rooted in over-nutrition and physical inactivity? ²With this background present work was planned to study the clinical profile of patients of ST-segment Elevation Myocardial Infarction .

Materials & methods

Population of interest: 38 patients of ST segment elevation myocardial infarction developing various arrhythmias within first 48 hours, admitted to Padmashree Dr. D. Y. Patil Hospital and Research Centre, Pimpri, Pune, and willing to participate in the study

Inclusion criteria:

Patient presenting satisfying the following criteria for ST segment elevation MI (STEMI)

- typical rise and/ or fall of biochemical markers of myocardial necrosis with at least one of the following:

- Ischaemic symptoms
- Development of pathological Q waves in ECG
- ECG changes indicative of ischaemia - ST segment elevation (~ 2mm in chest leads or > 1mm in limb leads)
- Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality and developing various arrhythmias within the first 48 hours.

Exclusion criteria:

- Non ST elevation MI.
- Unstable angina.
- Prinzmetal' s angina.
- Patients with STEMI presenting after 48 hrs.
- Re-perfusion arrhythmias.

Method of collection of data:

Study Design: A cross-sectional study.

Sample size: 38 patients meeting inclusion criteria were enrolled in the study.

Clinical profile of patients with respect to age, sex, signs and symptoms of ischaemic heart disease, contributing past and family history, risk factors for ischaemic heart disease; general and systemic examination findings were recorded as per the proforma.

Results:

Table 1 : Age and sex distribution.

Age (yrs)	Sex		Total(%)
	Male(%)	Female(%)	
28-37	4 (10.53)	1 (2.63)	5 (13.16)
38-47	6 (15.79)	2 (5.26)	8 (21.05)
48-57	9 (23.68)	1 (2.63)	10 (26.32)
58-67	9 (23.68)	1 (2.63)	10 (26.32)
68-77	3 (7.89)	2 (5.26)	5 (13.16)
Total	31 (81.58)	7 (18.42)	38 (100)

Maximum incidence of STEMI was seen in the age group of 48-67 years which accounted for almost 52% of the patients studied. The youngest patient was a male aged 28 years and the eldest, also a male was aged 76 years. The youngest female patient was aged 35 years and the eldest, 75 years. Male: Female ratio was 4.43:1. Clinical features of the patients were studied with regard to site, type, intensity, character and duration of pain; sleep disturbance, presence of provoking factors, increase in frequency, radiation of pain to other sites and the presence of rest angina.

Majority (60.53%) of the patients presented with retrosternal chest pain whereas two (5.26%) patients presented with silent MI. Unusual sites of pain were back (2.63%) and right sided chest pain (2.63%). Majority of the patients (68.42%) presented with severe pain whereas 26.32% of the patients presented with mild pain on admission to the hospital. **Pricking** type of chest pain was seen in most of the patients accounting for 39.47% of the total number of cases. Constricting type of pain was seen in just one patient (2.63%). 50% of the patients presented within first six hours of onset of symptoms. About 80% of the patients were hospitalized within 12 hours of onset of symptoms. 28 (73.68%) patients complained of sleep disturbance due to symptoms whereas ten (26.32) patients did not have sleep disturbance. Sweating was the most commonly observed associated complaint accounting for about 84% of the patients. Other associated symptoms were dyspnoea (18.42%), vomiting (15.79%), palpitations (13.16%) and syncope (7.89%). Two patients did not have any associated symptoms.

Discussion:

Despite impressive advances in diagnosis and management over the last four decades ST segment elevation myocardial infarction (STEMI) continues to be a major health problem in the developing countries also.^{3,4} The incidence of arrhythmias after STEMI is higher in patients the earlier they are seen after the onset of symptoms.⁵ The clinical profile of 38 patients of ST segment elevation myocardial infarction developing various arrhythmias within first 48 hours, admitted to Padmashree Dr. D. Y. Patil Hospital and Research Centre, Pimpri, Pune were studied.

In the present study, 94.74% of the patients presented with pain at various sites (precordial, retrosternal, left arm etc.) on admission. The rest 5.26% (two) patients presented with dyspnoea, sweating, and syncope. Both of them were elderly male hypertensive patients and one of them, a known diabetic.

This is in consensus with a study done by Davis et. al.⁶ Pain was the most common presenting symptom (94.74%), with majority (60.53%) of them complaining of retrosternal pain. The remaining patients presented with pain in the epigastrium, precordium, left arm, left side of chest, back and right side of the chest. Alpert et. al stated that possible ischaemic symptoms include various combinations of chest, upper extremity, jaw, or epigastric discomfort with exertion or at rest."

In the present study, pain at the time of admission was found to be severe (68.42%) and of pricking (39.47%) type in majority of the patients. The other types of pain as described by the

patient were squeezing, crushing, heaviness, burning and constricting. Sleep disturbance (73.68%), factors provoking pain (78.95%) and rest angina (86.84%) were also present in majority of these patients. However increase **in** the frequency of pain was seen only in 44.74% of the patients. Majority (55.26%) of the patients in the current study **did** not experience radiation of pain, whereas the rest complained of radiation of pain to various sites.

Sweating was the most commonly (84%) observed associated complaint, while others complained of dyspnoea, vomiting, palpitations and syncope.

Conclusion:

Sweating was the most commonly (84%) observed associated complaint, while others complained of dyspnoea, vomiting, palpitations and syncope.

References:

1. Kumar, Abbas, Fausto, Mitchell. Robins Basic Pathology.Sth ed. Phildelphia. Saunders Elsevier: 2007; p379.
2. Libby P, Bonow RO, Mann DL, Zipes DP. Braunwald's Heart Disease. 9th ed. Philadelphia. Saunders Elsevier: 2007.
3. Marshall T: Evaluating national guidelines for prevention of Cardiovascular disease and Primary care, J. Eval. Clin. Pract. 2005; 11 :452.
4. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F et al: Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): Case-control study. Lancet 2004; 364:937.
5. Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J. Harrison's Principles of Internal Medicine. 17 ed. New York. Mc Graw Hill; 2008; 2.
6. Ghuran AV, Camm AJ. Ischaemic heart disease presenting as arrhythmias. British medical bulletin. 2001; 59: 193-210.
7. Day H: History of CCU: Am. J. Cardiol. 1972; 30:405-07.