



Patient Perspectives and Symptom Differences in Acute Coronary Syndromes

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ABSTRACT

Ischemic chest pain is considered to be the hallmark of acute coronary syndromes (ACS). The character, location and duration of chest pain can be markedly different in different types of ACS. Patients with ACS can have other symptoms like dyspnea, diaphoresis, nausea, vomiting and palpitations. ST elevation Myocardial infarction (STEMI) is more likely to have prolonged chest pain and Inferior Wall Myocardial Infarction is more associated with gastrointestinal symptoms. It was the purpose of our study to identify the differences in symptoms between the types of ST elevation myocardial infarction as well as between STEMI and Unstable Angina / Non ST Elevation Myocardial infarction (UA/NSTEMI). A total of 209 patients with acute coronary syndromes were evaluated (NSTEMI – 102; STEMI – 107). It was found that only less than seventy percent of patients experienced a chest pain during a myocardial infarction. Certain chest pain characteristics were associated with the likelihood of ST elevation MI (viz squeezing, stabbing, pain lasting for > 30 minutes). Patients with STEMI and NSTEMI showed significant differences regarding several presenting symptoms like giddiness, palpitations and fatigue.

INTRODUCTION

One third of patient who present with chest pain will eventually have a diagnosis of ACS. The physical examination of patients with ACS can vary from completely unremarkable to dramatic, depending on the degree and location of the ischemia as well as individual patient factors. The

more severe symptoms accompany acute myocardial infarction. The chest pain history, physical examination, determination of coronary artery diseases (CAD) risk factors, and the initial electrocardiogram compose the information immediately available to clinicians to help determine the probability of acute myocardial

infarction (AMI) or acute coronary syndrome (ACS) in patients with chest pain. However, conflicting data exist about the usefulness of the chest pain history and which components are most useful.

OBJECTIVES

1. To identify the elements of the chest pain history that may be most helpful to the clinician in identifying the type of ACS in such patients
2. To evaluate the differences in the symptoms between NSTEMI and STEMI

METHODS

Consecutive patients presenting to ST JOHNS MEDICAL COLLEGE HOSPITAL CCU with a diagnosis of STEMI / NSTEMI were taken up for the study. Clinical and demographic variables were recorded. The type, severity, location and quality of symptoms were assessed. Standardised questionnaires assessed CHD risk factors, medications. All patients had 12 lead ECG, echocardiography and majority of the patient underwent coronary angiograms. Total 209 patients were enrolled for the study (NSTEMI – 102; STEMI – 107)

RESULTS

- 1) The mean age of the patients in the NSTEMI group was 61.23 years and in the STEMI group was 55.22 years (p value = 0.0007; 95% CI – 2.566 to 9.437)
- 2) 69% in the NSTEMI group and 84% in the STEMI group were males (p value = 0.0092 ; 1.078 to 2.438)

- 3) 55% of the patients were diabetics in the NSTEMI group compared to 41% in the STEMI group (p value = 0.0531 ; 0.5793 to 1.000)
- 4) 76% in the NSTEMI group and 48% in the STEMI group were hypertensives (p value = < 0.0001 ; 0.4367 to 0.7304)
- 5) History of dyslipidemia was present in 40% of NSTEMI patients and 22% of STEMI patients (p value 0.0001 ; 0.2490 to 0.6052)
- 6) Prior history of CAD was presents in 33% of patients with NSTEMI and 13% of patients with STEMI (p value 0.0005)
- 7) 12% of NSTEMI patients and 41% of STEMI patients were smokers (p value < 0.0001 ; 1.451 to 2.339)
- 8) SOB was present in 65% of NSTEMI and 34% of STEMI patients (p value <0.001 ; 0.3958 to 0.7147)
- 9) 3% and 5% of patients were having palpitations in NSTEMI and STEMI group respectively (p value = 0.49)
- 10) 22% of NSTEMI patients and 7% of STEMI patients had giddiness at the time of presentation (p value = 0.0017 ; 1.297 to 2.125)
- 11) 4% of NSTEMI patients and 17% of STEMI patients had increased fatigue (p value = 0.0028; 1.342 to 2.203)
- 12) Total cholesterol, LDL cholesterol and triglycerides were significantly higher in patients with STEMI

LIPIDS	NSTEMI (mg/dl)	STEMI (mg/dl)	P VALUE
TOTAL CHOL	162.20	195.88	<0.0001
LDL CHOL	100.02	123.97	<0.0001
HDL CHOL	34.91	34.75	0.098
TRIGLYCERIDE	142.61	179.74	0.0051

13) Mean BMI in NSTEMI patients (26.86) was not significantly different from BMI in STEMI patients (26.44) p value = 0.648

14) Mean trop I (1.738 vs 1.024 ; p value = 0.232) and mean CRP (1.054 in STEMI vs 1.106 in NSTEMI ; p value = 0.88) at the time of admission were not significantly different between the two groups

15) Chest pain was present in 66% of NSTEMI patients and 67.29% of STEMI patients (taken together) p value = NS. Chest pain was present in 78% of patients with AWMI 39.29% of patients with IWMI and 83.33% of patients with LWMI.

PAIN(%)	AWMI	IWMI	LWMI
LEFT SIDED CHEST PAIN	19	9	2
CENTRAL CHEST PAIN	17	6	4
RIGHT SIDED CHEST PAIN	1	3	1
LEFT SHOULDER PAIN	11	5	1
BACK PAIN	1	1	5
THROAT PAIN	5	1	0

16) Patients with STEMI were found to have more severe and more prolonged chest pain (P value < .00001 ; 1.897 to 3.644)

	Heaviness	Tightness	Squeezing	Stabbing	Pricking	Burning
NSTEMI	32	23	5	2	2	3
STEMI	15	11	25	14	0	7

DISCUSSION

The pain in an acute coronary syndrome is most commonly located in the center or the left of the chest with radiation to the left shoulder and arm, neck and jaw^{1,25,13-23}. Less commonly the pain is epigastric leading the patient to mistake it for indigestion. Rarely ischemic chest pain may be perceived in the right side of the chest or interscapular region.

In our study NSTEMI patients were found to be significantly older than the STEMI patients. Proportion of males was more in the STEMI group. NSTEMI patients were found to have more significant association with comorbidities like diabetes, hypertension and prior CAD in comparison to STEMI group. But the incidence of smoking was significantly more in the STEMI group. These findings were consistent with study reports by Kirchberger et al, Ndreppa et al, Abbott et al^{3,6,7}

Clinical symptoms were also different between the two groups. Although incidence of chest pain was equal in the two groups, the STEMI group was found to have more severe and more prolonged angina. By contrast there was no significant differences in the duration of chest pain in the study by Kirchberger et al. in agreement with our study, Thureson et al found a higher intensity of pain in patients with STEMI⁵. The incidence of chest pain varied depending on the area involved in the myocardial infarction. Only 39% of patients with inferior wall MI had angina.

Patients with inferior wall MI were more likely to present with atypical symptoms (viz nausea,

vomiting, diarrhea, giddiness) which correlated with similar studies by Pasceriet al⁸. Dyspnea was more prevalent among patients with NSTEMI, which was concordant with the reports from the MONICA/KORA myocardial infarction registry⁷ but was not reported in other studies. Giddiness and palpitations were significantly more in patients with STEMI. This was similar to the results of the MONICA/KORA myocardial infarction registry⁷ but was not reported in other studies. Giddiness and palpitations were significantly more in patients with STEMI. This was similar to the results of the MONICA/KORA myocardial infarction registry as well as study by Thureson et al^{5,7} Back pain was more associated with lateral wall MI (LCx involvement in CAG). This was in contrast to other studies by Pasceri et al, Droste et al, Eriksson et al which was showing no difference in the pain location according to the type of MI⁸⁻¹⁰.

Only a few studies have examined the differences between patients with STEMI and NSTEMI with regard to the symptoms at the time of admission. To the best of our knowledge there is no Indian study in this regard. Our present study has showed that NSTEMI was more associated with elderly patients having more comorbidities, and the occurrence of several presenting symptoms were markedly different between the two groups.

CONCLUSION

1. Only less than seventy percent of patients experienced a chest pain during a myocardial infarction

2. Certain chest pain characteristics were associated with the likelihood of ST elevation MI (viz squeezing, stabbing, pain lasting for > 30 minutes)
3. Patients with STEMI and NSTEMI showed significant differences regarding several presenting symptoms like giddiness, palpitations and fatigue

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