

PAINLESS MYOCARDIAL INFARCTION;

Its frequency in patients of acute coronary syndrome.

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ABSTRACT... Objective: To determine the frequency of painless MI in patients with acute coronary syndrome. **Study design:** Descriptive cross-sectional study. **Setting and duration:** This study was conducted at cardiology unit Nishtar Hospital Multan and Chaudhry Pervez Elahi Institute of Cardiology Multan. The study duration was 1 year starting from July 2011 to June 2012. **Materials and Methods:** This descriptive study included 331 patients of AMI of either sex and age which were admitted at "Cardiology unit Nishtar Hospital Multan and Chaudhry Pervez Elahi Institute of Cardiology Multan" using non-probability convenience sampling technique. Informed verbal consent was taken from each patient for participation. **Results:** Out of these 331 patients 308 (93.1%) patients reported chest pain as the presenting complaint. Remaining 23(6.9%) presented with clinical feature other than chest pain. Of these 23 patients who presented without chest, minimum age was 30 years while maximum was 90 years with mean age 54.82 ± 12.28 years. Patients with painless AMI presented with variety of symptoms. Most common symptoms seen in patients of AMI without chest pain were generalized weakness and cold sweats. Out of 23 patients with painless AMI, 15(65.22%) patients were male and 08(34.8%) were female. Diabetes mellitus was present as co-morbid condition in 16(69.56%) while 7(30.44%) patients were non diabetic. Hypertension was present in 8(34.78%) patients with painless AMI. **Conclusions:** Painless AMI or atypical presentation of AMI is seen in substantial proportion of ischemic heart disease patients. Absence of chest pain in AMI patients may misguide the doctors and diverts his attention towards other diagnosis which can lead to considerable delay in the essential therapies required in the management of AMI. It definitely affects morbidity and mortality of emergency department. Health care professionals particularly those working in emergency set up must keep in mind that absence of chest pain in suspected cases of ischemic heart disease does not necessarily rule out AMI. Features of AMI other than chest pain should also be kept in mind while dealing with a suspected case of ischemic heart disease. Further research work on painless AMI and presentation of AMI other than chest pain is needed.

Key words: Chest pain, Acute myocardial infarction, painless MI.

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INTRODUCTION

Acute Myocardial infarction (AMI) still remains to be catastrophic cardiac emergency. The clinical diagnosis of AMI requires "typical presentation especially with reference to chest pain in combination with some indirect evidences of myocardial injury established on the basis of biochemical, electrocardiographic and imaging findings". In USA, every year almost 1 million patients suffer from AMI¹. About 5 million patients report to emergency department every year with history of chest pain² but only 15 to 25 percent of patients with acute chest pain actually have acute coronary syndrome³. Frequency of painless myocardial infarction is much higher than that we realize. It is a significant finding because "painless myocardial infarction" most oftenly goes unnoticed by both health care professionals as well as patients thus

leading towards inferior care and having worse outcomes. Such patients are at higher risks of developing unpredictable serious ischemic events. Painless MI has been reported in various other studies⁴. Silent presentation of MI is known to be an important manifestation of coronary heart disease, however these patients remain neglected due to absence of chest pain^{5,6}.

These patients present with the symptoms other than chest pain or discomfort; such angina equivalent symptoms include "dyspnea (most common), nausea, vomiting, diaphoresis, and unexplained fatigue"⁷. In many cases, the sensation is "atypical", with pain experienced in different ways or even being completely absent. Some may report palpitations, anxiety or a sense of impending doom and a feeling of

being acutely ill. The description of the chest discomfort as a pressure has little value in diagnosis of AMI as it is non specific for ACS⁸.

The population of AMI patients who present without chest pain has not been well characterized. Although it is widely known that diabetics, morphine addicts and elderly patients of AMI may not have chest pain at presentation^{9,10}.

Complete understanding of atypical presentations may help in the earlier identification and treatment of these patients with AMI. Patients with acute myocardial infarction who are mistakenly discharged on the basis of absence of chest pain from the emergency department have short-term mortality rates of about 25 percent, which is at least twice what would be expected if they were admitted¹¹.

It is therefore of utmost importance to emphasize the evaluation of those patients of acute myocardial infarction who do not present with chest pain but present with symptoms other than chest pain. By doing this, we can eliminate the chances of mistaken discharge of patients having painless AMI. Early diagnosis and management of these patients will reduce morbidity and mortality in these patients. So the present study was conducted to find out the frequency of painless AMI in our population and will help to identify those AMI patients who present with atypical features.

MATERIAL AND METHODS

This descriptive study included 331 patients of AMI of either sex and age which were admitted at "Cardiology unit Nishtar Hospital Multan and Chaudhry Pervez Elahi Institute of Cardiology Multan" using non-probability convenience sampling technique. Informed verbal consent was taken from each patient for participation. The data were recorded on a pre-designed questionnaire and were entered and analyzed using SPSS-16.

RESULTS

Three hundred and thirty one patients who presented with acute myocardial infarction (AMI) were recruited in the study. Mean age of the study cases was 54.99 ± 11.25 years (minimum age 20 and maximum 90 years). Two hundred sixty four (79.8%) were male and 67(20.2%) were female patients and male to female ratio was 3.9:1. Three hundred and eight (93.1%) of patients had reported chest pain to be the presenting complaint. Out of these 331 patients, 23(6.9%) presented with some clinical features other than that of chest pain. Of these 23 patients who presented without chest, minimum age was 30 years while maximum was 90 years with mean age 54.82 ± 12.28 years (Table-I). Patients with painless AMI presented with variety of symptoms. Most common symptoms seen in patients of AMI without chest pain were generalized weakness and cold sweats (Table-2). In majority of the patients different combination of symptoms were present rather than a single symptom. Out of 23 patients with painless AMI, 15(65.22%) patients were male and 08(34.8%) were female. Diabetes mellitus was present as co-morbid condition in 16(69.56%) while 7(30.44%) patients were non diabetic. Hypertension was present in 8(34.78%) patients with painless AMI.

Age group (years)	Frequency	%age
30-40	01	4.35%
41-50	09	39.13%
51-60	10	43.47%
61 and above	03	13.05%
Total	23	

Table-I. Age wise distribution of study cases.

DISCUSSION

Though major advances have been made in the management of cardiovascular diseases, yet early identification of patients with painless AMI remains a dilemma. Unfortunately not enough material is

Presenting complaints	Yes		No		Total
	Frequency	%age	Frequency	%age	
Cold sweats	18	78.26%	05	21.74%	23
Generalized weakness	18	78.26%	05	21.74%	23
Vomiting	15	65.22%	08	34.78%	23
Palpitation	09	39.13%	14	60.87%	23
Syncope	05	21.74%	18	78.26%	23

Table-II. Presentation of AMI patients without chest pain (n=23)

available which may help to diagnose those AMI patients who present without chest pain. In our study frequency of painless AMI was 6.9%. Dorsch et al¹² identified 3684 consecutive cases with a possible diagnosis of acute myocardial infarction based on coronary care registers, clinical coding, and cardiac enzyme test results. The diagnosis was confirmed in 2096 patients, 20% of whom had presented without chest pain¹². Canto JG et al¹³, reported in this study that 33% did not have chest pain on presentation to the hospital. This proportion is somewhat higher than has been reported in previous studies^{14,15,16}. The reason for low frequency of painless AMI in our setting may be due to lack of health education and awareness. Majority of the people have misconception that AMI patients always have chest pain so the patients of AMI reported to the hospital without chest pain were less.

In our study we found that majority of the patients i.e. 19 (82.6%) were between the age of 41-60 years and mean age was 54.82 ± 12.28 years. Canto JG¹³ noticed that average age for painless AMI is 74.2 years, it may be because average lifespan in their population is high, hence they have seen more cases in average age group of 74.2 years. Secondly, among south Asian the mean age for first MI is lower than the individuals in other countries¹⁷. This may be genetic variation.

At any given age, prevalence of AMI is greater in men than in women¹⁸.

We found that out of 23 patients with painless AMI, 15(65.22%) patients were male and 08(34.8%) were females, while out of 308 patients who had chest pain with AMI 264(79.8%) were male and 67(20.2%) were females. So, the frequency of painless AMI as compared to the AMI with chest pain was comparatively higher in females (34.8% vs 20.2%). Canto et al¹³, had observation that frequency of painless AMI in females was 49% as compared to 38% frequency in a group of those who presented with chest pain. So the painless AMI was noted more in females as compared to males. The reason may be hormonal variations. In our study there were 16(69.56%) patients with diabetes, out of them 9(56.25%) were male and 7(43.75%) were females. Acharya et al⁹ have also found that patients with diabetes mellitus may not have chest pain during AMI (possibly secondary to diabetic neuropathy). Canto et al¹³, found that frequency of diabetes in patients with painless AMI was 32.6%. While in our series it is 69.56%.

CONCLUSIONS

Painless AMI or atypical presentation of AMI is seen in substantial proportion of ischemic heart disease patients. Absence of chest pain in AMI patients may misguide the doctors and diverts his attention towards other diagnosis which can lead to considerable delay in the essential therapies required in the management of AMI. It definitely affects morbidity and mortality of emergency department. Health care professionals

particularly those working in emergency set up must keep in mind that absence of chest pain in suspected cases of ischemic heart disease does not necessarily rule out AMI. Features of AMI other than chest pain should also be kept in mind while dealing with a suspected case of ischemic heart disease. Further research work on painless AMI and presentation of AMI other than chest pain is needed.

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