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Clinical profile and risk factors, complications and hospital outcome of acute myocardial infarction patients among patients

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Abstract
A substantial number of patients with acute myocardial infarction have some cardiac rhythm abnormality, and approximately twenty-five percent have cardiac conduction disturbance within 48 hours following infarct onset. Almost any rhythm disturbance can be associated with acute myocardial infarction, including bradyarrhythmias, supraventricular tachyarrhythmias, ventricular arrhythmias, and atrioventricular block. Smoking (76%) and hypertension (23%) were the most common risk factors in the present study, followed by dyslipidemia (22%). The overall in hospital mortality in this study was 15 % - 10 were males (66.7%) and 5 were females (33.3%).

Keywords: myocardial infarction, hospital outcome, Clinical profile

Introduction

It is perhaps impossible to identify the very first person who observed variations in the cardiac rhythm. However, the review of history of medicine, in this regard is helpful in identifying at least some milestones in understanding this clinical problem. Among the ancient times, it is said that Egyptians were aware of the importance of examination of pulse as early as 13th Century Before Christ. Chinese considered it as a key to diagnose many conditions in 6th century B.C. Just around this time, it is said that 600 types of pulses were known to Ayurvedic physicians. In the year 1628 A.D, Sir William Harvey described circulation of blood; in 1776, William Withering recognized the irregular pulse of atrial fibrillation. In 1835, Boulland recognized two important abnormalities in the pulse, which he called pulse intermittens and ataxia of the pulse (possibly atrial fibrillation). Nothangel likened the irregularity of the heart rhythm in ataxia of the pulse to the delirious state of the brain and hence called it 'delirium cordis'.

The ICCUs have provided a wealth of knowledge on the incidence of arrhythmias and the prognosis of AMI in hospitalized patients13. The risk of CAD in Indians is 3-4 times higher than White Americans and 6 times higher than Chinese. The prevalence of coronary artery disease in Asian Indians [1] has to be viewed with concern. Indians are prone as a community to CAD at a much younger age [2].

In the study by SZ Abildstrom *et al.* [3], risk of sudden cardiac death compared to non-sudden cardiac death, is relatively highest in younger age groups, but the absolute riskof sudden cardiac death, and is much higher among the upper age groups than the younger.

In the Framingham Heart study a male preponderance was observed [4].

In a prospective community based study by Shmuel Gottlieb *et al.* [5] of consecutive AMI patients hospitalized in ICCUs in the mid 1990s indicate that women fare significantly worse than men at 30 days.

In a study by Wolfe CL *et al.* [6], polymorphic VT seen in 2% of patients with MI is often rapid, symptomatic and hemodynamically and electrically unstable.

In a study by Tofler GH *et al.* [7], sustained VT occurring within 48 hours of MI seen in 2% of patients is often transient and is not associated with long –term risk of sudden cardiac death.

Methodology

The data was obtained from total of 100 patients admitted to the ICCU, Tertiary care centre.

Inclusion Criteria

1. Patients 18 years of age or above admitted in the ICCU with acute myocardial Infarction.
2. ST segment elevation Myocardial infarction
3. Myocardial infarction less than 48 hours old.

Exclusion Criteria

1. Patients less than 18 years of age.
2. Myocardial infarction 48 hours old or more.
3. Non ST segment elevation myocardial infarction.

Results

Table 1: showing sex distribution

Sex	No. of Patients	Percentage
Male	82	82
Female	18	18

Out of 100 cases, 82 were males and 18 were females.
The male to female ratio was 4.5:1.

Table 2: Showing distribution according to occupation

Occupation	No of cases	Percentage
Farmer	32	32
House wife	18	18
Manual Labourer	16	16
Driver	6	6
Clerk	4	4
Security Guard	3	3
Fruit vendor	3	3
Others	18	18

Table 3: Showing coronary risk factors

Risk factor	No of cases	Percentage
Smoking	76	76
Hypertension	23	23
Diabetes Mellitus	21	21
Dyslipidemia	22	22
Obesity	7	7
Family history of IHD	7	7

Smoking (76%) and hypertension (23%) were the most common risk factors in the present study, followed by dyslipidemia (22%).

Table 4: Showing the symptoms present at time of admission

Symptoms	No of cases	Percentage
Chest pain	96	96
Sweating	81	81
Vomiting	30	30
Breathlessness	17	17
Giddiness	13	13
Palpitation	7	7
Pain abdomen	4	4
Weakness of Right upper and lower limb	1	1

Chest pain (96%) was the most common presenting symptom followed by sweating (81%) and vomiting (30%)

Table 5: Yime interval between on set of symptoms to hospitalisation.

DURATION (hours)	No of Patients	Percentage
≤ 1	2	2
1-6	56	56
7-12	24	24
13-24	09	09
25-48	09	09

56 (56%) patients were admitted within 6 hours of onset of symptoms.

Table 6: Showing circardian periodicity of onset of chest pain/ symptoms

Time of onset of chest pain/Symptoms	No of patients	Percentage
12 mid night to 4 am	10	10
4am to 8am	28	28
8am to 12noon	14	14
2 noon to 4 pm	10	10
4 pm to 8 pm	22	22
8pm to 12 midnight	06	06

Maximum number of patients i.e. 52% develop acute MI between 4 am to 12 noon. The next highest number of patients i.e. 22(22%) developed acute MI between 4pm to 8pm.

Table 7: Complications other than arrhythmias

Complications	No of cases	Percentage
Left ventricular failure	27	27
Cardiogenic shock	6	6
Congestive cardiac failure	1	1
Pericarditis	2	2
Intracranial haemorrhage	3	3

Left ventricular failure was seen in 27 patients (27%).

Table 8: Showing no cases of thrombolysis

	No of Patients
Thrombolysed	83
Non Thrombolysed	17

Out of 83 patient's thrombolysed, 54 patients had arrhythmias.

Table 9: Showing incidence of mortality

Total no of patients	No of deaths	percentage
100	15	15

The overall in hospital mortality in this study was 15 % - 10 were males (66.7%) and 5 were females(33.3%). of the 15 patients who expired, 10 patients (66.7%) had anterior wall MI and 5 (33.3%) had inferior wall MI. 8 of the 15 deaths (53.3%) occurred within in 24 hours of admission.

Discussion

There were 82 males (82%) and 18 females (18%) in the present study. Male to female ratio was 4.5:1. This finding is consistent with that of Maggioni *et al.* [8] – 4.65:1; Prabhakar *et al.* [9] – 4.2:1 and Elizabeth GC [10] – 5.2:1.

- **Smoking:** smoking was the commonest risk factor present in as many as 76 patients (76%) in the present study. This figure is in accordance with finding of Majeed *et al.* [11] who have reported it to be present in 73.3% of patients.
- **Diabetes mellitus**: 21% of the patients were diabetics in the present study. This is comparable with studies of Bhattacharya *et al.* [12] who have reported diabetes as risk factor in 19.09% of patients.
- **Hypertension:** In this study hypertension was present in 23% of the patients. This finding co-relates with Kundu *et al.* [13] who have reported hypertension as risk factor in 22.55% of patients.
- **Dyslipidemia:** 22 patients (21%) in this study had hypercholesterolemia. This correlates with study of Bhattacharya *et al.* [12] Majeed *et al.* [11] who have reported it to be present in 21.43% and 21% of the patients respectively.
- The most common site of infarction in the present study was anterior wall MI in 66% of patients, which is comparable with the authors of Gupta *et al.* [14], kundu *et al.* [13].
- In the present study incidence of inferior wall MI was present in 30% which is comparable to Jewitt *et al.* [15] showed incidence of 44% and 33.78% respectively.

Conclusion

Arrhythmias continue to be the commonest complication of Acute myocardial infarction especially during first 48 hours. Acute myocardial infarction is a serious condition, it has to be

treated in intensive coronary care unit. Death usually occurs due to arrhythmias which is a potentially reversible condition to be treated at the earliest, thus mortality can be decreased

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