



CLINICAL PROFILE OF PATIENTS OF ACUTE CORONARY SYNDROME (ACS) IN GOVT. THENI MEDICAL COLLEGE, TAMILNADU

General Medicine

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ABSTRACT

Coronary Artery Disease (CAD) is becoming the major cause of morbidity and mortality in the developing world. CAD in Indians is associated with more severe presentation, younger age of onset and shows male preponderance. Objectives: To identify the risk factors and clinical profile of patients of Acute ST Elevation Myocardial Infarction (STEMI). Methods : A prospective study conducted in patients of Acute ST elevation myocardial infarction to find the risk factors, clinical presentation and complications. We enrolled 100 patients with acute myocardial infarction and clinical history, risk factors, duration of symptoms, ECG findings, regions of infarction, rhythm disturbances and complications were documented. Results: Acute ST elevation MI was more common in males (80%) with male to female ratio being 4:1. The most common age group affected was 41-50yrs in males and 51-60 in females. Most patients arrived at hospital within 6 hrs of onset of pain. In the hospital mortality rate was 14 %. Conclusion: The incidence of acute MI is increasing with greater involvement of younger patients and shows male predominance. This highlights the need and importance of health education regarding risk factors, symptom identification and golden hour in reaching the hospital to save the myocardium. It also brings to focus the need for coronary intervention units in peripheries to help the rural people.

KEYWORDS

Coronary artery disease, Morbidity, STEMI, Complications.

1. INTRODUCTION

Cardiovascular disease has emerged as a major health burden in developing countries and is the leading cause of mortality and morbidity in the world. Effective screening, evaluation and management strategies for coronary artery disease are already well established in developed countries [1]. This needs to be implemented in developing countries like India also to reduce the burden of CADs. In this study, clinical profile of coronary artery disease was studied and gets an idea about the risk factors, symptoms, complications and mortality patterns in order to guide in developing the strategies to prevent CAD.

2. METHODS & MATERIALS

This is a prospective study involving 100 patients with acute ST elevation myocardial infarction (STEMI) in the ICU of Government Theni Medical College and Hospital, Theni, Tamilnadu conducted from January 2018 to June 2018. The patients were identified from the emergency Department of the Hospital.

All patients aged above 18 years and having two out of three of the following was included in the study. (i) Typical symptoms (Chest discomfort), (ii) Typical pattern of ECG (ST segment elevation of ≥ 0.1 mv in at least two consecutive leads, (iii) Elevated enzyme levels (Serum CPKMB two times the upper limit of normal level, elevated Troponin-I levels). Exclusion criteria were presence of unstable angina and chronic stable angina. A detailed history was taken and examination done for the patients. The demographic factors like sex and age of patient and date of admission were entered. Vital signs were continuously monitored. Baseline routine blood investigations were done. Electrocardiography, ECHO was done for all patients. Thrombolysis was done for the appropriate patients, immediate complications and outcomes were assessed and treated.

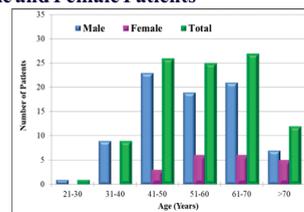
STATISTICAL ANALYSIS

All data were entered in a predesigned proforma and analyzed using SPSS version 21.0 software. Results were expressed in frequencies and percentages. Student's t test was used to analyse data which were parametric nature and a p value less than 0.05 was considered as significant.

3. RESULTS

Out of 100 patients 80 were male and 20 female (Fig. 1). The study patients were categorized into age groups, with 23 male patients belonging to 41-50 years group, 21 to 61-70 years, 19 to 51-60 years, and 9, 7 and 1 male patients to age groups 31-40, more than 70 years and 21-30 years respectively. Majority of the patients with STEMI presenting to the hospital belonged to 41-50 years age group in males and 51-60 years in females. One male patient with STEMI was in the age group of 21-30 years, which is important in the current era. Since the study involved rural population, 80% of patients were manual laborers and agricultural workers with 20% of patients belonging to other professions. Even though the manual laborers and agricultural workers are physically active and don't lead a sedentary life style, they contributed to 80% of the STEMI population.

Figure.1. Male and Female Patients



84% of patients had typical chest pain as their presenting complaint, 62% had associated sweating, 51% had breathlessness, 44% had palpitations, 31% had giddiness, 17%, 16%, 11%, 20% of patients had associated vomiting, abdominal pain, weakness of limbs and back pain respective (Table. 1).

Table. 1. Symptoms of the Patients with ACS

Symptoms	Male	Female	Total
Chest pain	69	15	84
Sweating	47	15	62
Breathlessness	40*	11*	51
Palpitation	33*	11*	44
Giddiness	27*	04	31

Vomiting	14	03	17
Abdominal pain	15	04	16
Weakness of limbs	8	03	11
Back pain	14	06	20

40% of the patients in the study population had anterior wall myocardial infarction, 36% inferior wall involvement, 9% posterior wall involvement and 11% right ventricular involvement. Many patients had combination of anterolateral, anteroseptal, inferior along with posterior wall involvement or inferior and right ventricular involvement (Table. 2).

Table. 2. Patients of Myocardial Involvement

Myocardial Involvement	Male	Female	Total
Anterior wall	33	07	40
Inferior wall	32*	04	36
Post wall	09	00	09
Right ventricle	09	02	11
Lateral	12	03*	15
Septal	15*	02	17

Coming to the complications that occurred during hospitalization, 23% of patients suffered arrhythmias in the form of Ventricular Tachycardia, Atrial fibrillation, Supraventricular tachycardia, AV blocks and complete heart block. Atrioventricular blocks dominated in inferior wall myocardial infarctions, followed by Ventricular tachycardia in other cases. 22 % of patients developed congestive cardiac failure during the stay. 21% of patients developed hypotension during the course of treatment and were optimally managed. 6% of patients had bleeding manifestations following thrombolysis. 18% of patients had heart failures during the course of illness. 8% of the patients had trivial Mitral regurgitation due to papillary muscle dysfunction. 10% of patients developed cardiogenic shock and were treated as per guidelines (Table. 3). Out of the 100 patients of STEMI who underwent thrombolysis there was 14% mortality. Remaining 86% improved with thrombolysis and were discharged and referred to higher centers for further interventions. Table.

3. Complications among ACS Patients

Complications	Male	Female	Total
Arrythmia (VT/SVT/AF/AFL/AVB/CHB)	20*	03	23
Hypotension	19	02*	21
Cardiac failure (Killp's)	20*	02	22
Bleeding	05	01	06
CVA	01	00	01
Mechanical Complications (MR/VSR)	08	00	08
Cardiogenic shock	08	02	10

Coming to risk factors, the parameters analysed in dyslipidemia were hypercholesterolemia and raised LDL. 20 males and 5 females had hyper cholesterolemia. 21 males and 5 females had raised LDL levels. Hypertension was the most prevalent risk factor in this study, present in 36% of the subjects. 30 males and 6 females had hypertension.

35% of patients had diabetes (32 males and 3 females). 44% of patients were cigarette smokers and 22% used tobacco. 25% of patients were obese and 10% had a family history of coronary artery disease. 27% of patients had sedentary life style. The least common risk factor present was dyslipidemia (Table. 4).

Table. 4. Risk factors among ACS Patients

Risk factor	Male	Female	Total
Hypertension (SHT)	30*	06*	36
Diabetes	32*	03*	35
Obesity	20	05	25
Dyslipidemia	20	04	24
Family history	09	01	10
Smoking	44*	00	44
Alcohol	52*	00	52
Tobacco	19*	03	22
Sedentary life style	22	05	27
Previous CAD	12	00	12

*P value < 0.05 significant

The duration of chest pain before arrival to the hospital was assessed. Most of the patients (around 22.8%) presented to the hospital 0-6 hours after onset of chest pain, 6.3% \geq 24 hours, and 0.6% within 6-12 hours. As this was a retrospective study, in 15.9% patients, we were not able to know the exact time duration.

4. DISCUSSION

Age is one of the most important determinants in Ischemic heart disease [2]. In our study people in the age group of 41-60 years contributed to maximum cases of acute ST elevation myocardial infarction. Males were predominantly affected by STEMI than females. Younger people are affected by coronary artery disease due to altered food habits, stress, smoking, untreated hypertension and under treated diabetes [3]. Even though coronary artery

disease is more common in sedentary life, most of the patients in our study were manual laborers, agricultural workers, conductors and drivers. It highlights the effect of stress and other factors in the development of coronary artery disease. Hypertension is one of the most important risk factors for Coronary artery disease (CAD) [4]. Undiagnosed and untreated hypertension contributed to majority of the CAD. 35% of the patients were found to be diabetic. Anterior wall infarction was more common followed by inferior wall myocardial infarction. Dyslipidemia was seen in 24% of the cases.

Hypercholesterolemia was seen in 24% of STEMI patients and raised LDL in 26%. The most common complications that developed were arrhythmias and congestive cardiac failure. 6% of the patients who underwent thrombolysis developed bleeding as a complication. In-hospital mortality was 14% in acute ST elevation myocardial infarction [6]. Identifying the risk factors will help to reduce the occurrence of Ischemic heart disease through proper education regarding preventive strategies. The proper identification of symptoms by patients will cause them to seek medical care early helping to reduce morbidity as well as mortality. In the same way identifying poor prognostic factors helps to focus more on their presence and in their effective management [7].

5. CONCLUSION

Acute STEMI has a male to female prevalence ratio of 4:1. Most patients were in the age group of 41-50 yrs in males and 51-60 yrs in females with chest pain being the commonest symptom. Smoking was the most important risk factor followed by hypertension and diabetes. Majority of the patients arrived in hospital within 6 hrs. Most of them had anterior wall involvement, with most common complications being arrhythmias and cardiac failure. 87% received Thrombolysis and the mortality was 14%. More studies involving larger cohorts are needed for more details. Therefore efforts should be made to make available percutaneous coronary intervention to the patients of acute ST elevation myocardial infarction in all tertiary centres.

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