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Short Term Complications of Acute Myocardial Infarction in a Tertiary Hospital

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Abstract

Introduction: *Acute myocardial infarction is very common in Bangladesh. It is one of the most common causes of mortality worldwide. The clinical course is associated with various complications.* ***Materials and Methods:*** *To assess the short-term outcome of acute coronary syndrome we select 100 patients. The study was conducted at the Medicine wards of Khulna Medical College Hospital, Khulna from February'2019 to August'2019. We observed the clinical presentations, ECG findings, echocardiographic findings, short term complications and outcome.* ***Results:*** *We found that most of the patients (61%) were within 45-64 years of age. Chest pain was the most common (85%) presentation. NSTEMI is more common than STEMI. 53% patients developed complications. Acute LVF is the most common (23%) complication. AV block is the most common arrythmia (10%). We found overall mortality 38%.* ***Conclusion:*** *Early detection of complications is essential for reduction of morbidity and mortality. This study will help to evaluate short-term complications and to give appropriate management.*

Keywords: *Infarction, Complications, NSTEMI, STEMI.*

Number of Tables: *05;* ***Number of References:*** *20;* ***Number of Correspondence:*** *05.*

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Introduction:

Coronary artery diseases (CAD) is a common cause of mortality worldwide[1] and within few years it will be first in the leading cause of disability[2]. Acute Myocardial Infarction (AMI) is the most common form of CAD. When there is rupture of an atherosclerotic plaque or there is erosion with superimposed thrombosis then acute occlusion of coronary artery occurs followed by myocardial infarction. Though AMI is very common in Bangladesh but advanced treatment of AMI (eg. thrombolytic therapies and PCI) is not available in every hospital, even in all tertiary level hospitals. As a result, various complications develop in these patients and many patients die. Numerous studies done in our country as well as in abroad shows that various complications may arise after an acute MI such as left ventricular failure, carcinogenic shock, heart block, arrhythmia, cardiac rupture and pericarditis[3-7]. This study was done to see the various complications and outcome of the patients of AMI admitted in a tertiary level hospital in Bangladesh.

Materials and Methods:

It is an Observational study. The study was conducted at the Medicine wards of Khulna Medical College Hospital, Khulna from February'2019 to August'2019. Patients with Acute Myocardial Infarction admitted in the Medicine wards of Khulna Medical College Hospital were taken.

Sampling method: Purposive sampling.

Inclusion criteria:

- Patients with Acute Myocardial infarction
- Age > 18 years
- Both male and female
- Voluntarily given consent.

Exclusion criteria:

- Not willing to give informed consent
- Patients with AMI having the following associations:
- Rheumatic and congenital heart diseases
- Chronic liver disease
- Chronic kidney disease
- Malignancy

Informed written consent was taken from the patient. All patients were interviewed by using standard questionnaire containing socio-demographic and relevant information about the study topic. General medical condition of the patients was evaluated through complete history, physical examination and help of investigations. Standard treatment of acute MI was given to all patients and they were followed up till discharge. After collection, data editing and clearing was done manually and prepared for data entry and analysis by using SPSS.

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Results:

Table I shows age distribution of patients with acute myocardial infarction. Out of 100 patients 29(29%) were in the age group of 55-64 years and 32(32%) were in the age group of 45-54 years. The mean age for AMI is 54.2±10.75 years.

Table-I: Age distribution.

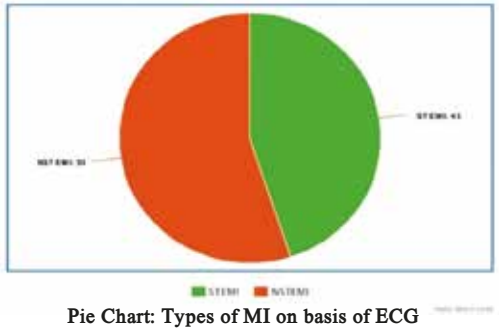
Age group	No (%)	Mean± SD
25-34	4 (4)	
35-44	15 (15)	
45-54	32 (32)	53±10.74
55-64	29 (29)	
65 and above	20 (20)	

Table II shows clinical presentation in AMI patients. Chest pain was the most common (85%) symptom reported. The second and third common symptoms were dyspnea (52%) and sweating (43%) respectively. Among other symptoms, anxiety was also found in significant number of patients.

Table-II: Clinical Presentation.

Manifestations	No	Percentage
Chest pain	85	85%
Dyspnea	52	52%
Sweating	43	43%
Nausea vomiting	38	38%
Anxiety	27	27%
Epigastric pain	12	12%

On the basis of ECG findings MI was divided into STEMI & NSTEMI. NSTEMI (55%) was more common than STEMI (45%).



Pie Chart: Types of MI on basis of ECG

Cardiac function was assessed by echocardiography. Systolic dysfunction was found in 33% cases, diastolic dysfunction in 15% cases and both systolic and diastolic dysfunction in 30% cases.

Table-III: Echocardiographic findings.

Echocardiographic findings	No	Percentage
Systolic dysfunction	33	33%
Diastolic dysfunction	15	15%
Both systolic and diastolic dysfunction	30	30%
Normal	22	22%

In our study 53% patients developed complications. Acute left ventricular failure was the most common complication 23%. Among other complications 17% developed arrythmia and 13% developed cardiogenic shock. Among the arrythmias atrioventricular block (AV block) was most common (10%). Other arrythmias include ventricular tachycardia (4), ventricular fibrillation (3).

Table-IV: Complications.

Complications	No	Percentage
Acute LVF	23	23%
Arrythmia	17	17%
Cardiogenic shock	13	13%
Post MI angina	09	09%
Thrombo-embolic phenomenon/ stroke	02	02%

Table-V: Types of arrythmia.

Types of arrhythmia	No	Percentage
Atrioventricular (AV) block	10	10%
Ventricular tachycardia (VT)	04	04%
Ventricular fibrillation (VF)	03	03%

Mortality is 38%.

Discussion:

This observational study was carried out on 100 cases of Acute Myocardial Infarction (AMI) admitted in the medicine wards of Khulna medical college hospital. Demography, clinical presentations, investigations and outcome were observed.

This study found that, most of the patients were in the age group of 45-54 years (32%). This finding is similar to a study by Islam M et al[8] in 2017 in Bangladesh and in other studies[9-10].

Chest pain was the most common symptom reported. The second and third most common symptoms were dyspnea and sweating respectively. Among other symptoms, anxiety was also found in significant number of patients. These findings correspond to several other studies[11-12].

ECG findings revealed that NSTEMI was more common (55%) than STEMI (45%). Similar finding was found in a study by Kjell Nikus et al[13]. Several studies reveals STEMI more common than NSTEMI[14-15].

Echocardiographic assessment of cardiac function shows Systolic dysfunction (33 %) both systolic and diastolic dysfunction (30%) diastolic dysfunction (15%). These findings are similar to findings in other studies[16-17].

Acute Left ventricular failure was the most common complications (23%), followed by arrythmia (17%) and cardiogenic shock (13%). Study also found that AV block was the most common arrythmia (10%) followed by VT (4%) and VF (3%). These complications correspond with other several studies[18-19].

In our study we found that mortality rate was 34%. This result is very similar to a study by Harvey D White[20].

Conclusion:

In Bangladesh advanced treatment of AMI (different thrombolytic therapies and PCI) is not available in every health care facility, even in all tertiary care hospitals. So due to delay in diagnosis and lack of availability of appropriate treatment various complications may develop and patients may die. Early detection of complications can reduce morbidity and mortality. Thus, this study may help physicians to be aware of short-term complications and taking essential management.

Conflict of Interest: None.

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