Original Article

A study of various complications and outcomes in patients with acute ST elevation MI patients at tertiary health care center

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Abstract

Introduction: An atherosclerotic plaque with a large lipid core, thin fibrous cap and evidence of inflammation may result in fissuring of the plaque. Plaque rupture and resultant platelet activation and thrombosis leads to epicardial artery occlusion, accounting for the majority of ST segment elevation myocardial infarction (STEMI). **Aims and Objectives:** To Study of Various Complications and Outcomes in Patients with acute ST elevation MI patients at Tertiary health care center **Methodology:** This was a hospital based cross-sectional study of the Patients who were admitted to tertiary health care Centre with diagnosis of Myocardial Ischemia diagnosed by ST-Elevation Myocardial Infarction during the Period of One year from March 2014 to March 2015 at tertiary health care Centre. Total 127 patients were enrolled into the study. Detailed case history was recorded all the complications were assessed by various investigation like 2D- Echo, ECG, And clinical examination .Patients were followed up for their outcome like Complete recovery or Discharge against medical advice or Death etc. **Result :**The majority of the Patients were from >60- 33.86% followed by 50-60- 29.92%, 40-50- 20.47%30-40- 9.44% and 20-30- 6.29%.Majority of the Patients were Male i.e. 55.11% and 39.37% were Female The most common complication observed in our study were Cardiogenic shock- 55.56% Followed by Congestive heart failure- 48.81%, Mitral regurgitation- 33.33%, Major bleeding episode - 33.33%, Stroke- 18.51%. Out of the total 127 patients 63.77% recovered completely and Complications occurred in 21.25% cases and Death occurred In 5.55% cases and 9.44% patients taken Discharge Against medical Advice. **Conclusion:** The most common complication observed in our study were Cardiogenic shock, Congestive heart failure , Mitral regurgitation, Major bleeding episode , Stroke Most of the Patients recovered completely.

Key Words: ST elevation MI, Complications of Myocardial infarction, Cardiogenic shock, Recovery after Myocardial infarction.

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INTRODUCTION

An atherosclerotic plaque with a large lipid core, thin fibrous cap and evidence of inflammation may result in fissuring of the plaque. Plaque rupture and resultant platelet activation and thrombosis leads to epicardial artery occlusion, accounting for the majority of ST segment elevation myocardial infarction (STEMI). Distal embolisation of thrombus compounds the problem. In patients without obstructive coronary artery disease (CAD) the reasons for STEMI are coronary artery dissection, embolisation and vasospasm. This may occur in 5-10% of cases.[1-4] Restoration of coronary blood flow to the infarct related artery is the guiding principle of treatment of STEMI. Rapid availability of reperfusion therapy, whether pharmacological (fibrinolytic therapy) or catheter based intervention, primary percutaneous intervention (PCI) limits infarct size and improves survival.[5] The Global Registry of Acute Coronary Events (GRACE) suggested that up to 40% of patients with STEMI do not receive reperfusion therapy.[6]Primary

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percutaneous coronary intervention (pPCI) is the standard of care reperfusion therapy for patients with evolving ST-segment elevation myocardial infarction (STEMI) [6-9]. Although individual centers have performed pPCI for many years, a significant number of patients with STEMI either do not receive this optimal treatment or do not receive it in a timely manner due to the small number of tertiary care centers with an around-the-clock ('24/7') service. Large urban centers and rural areas, where tertiary care hospitals are restricted to specific regions, are less likely to have the capacity to deliver this treatment to the population as a whole.[10]

METHODOLOGY

This was a hospital based cross-sectional study of the Patients who were admitted to tertiary health care Centre with diagnosis of Myocardial Ischemia diagnosed by ST-Elevation Myocardial Infarction during the Period of One year from March 2014 to March 2015 at tertiary health care Centre. Total 127 patients were enrolled into the study. Detailed case history was recorded all the complications were assessed by various investigation like 2D Echo, ECG, And clinical examination .Patients were followed up for their outcome like Complete recovery or Discharge against medical advice or Death etc.

RESULT

Table 1: Age wise Distribution of the MI Patients

Age	No.	Percentage (%)
20-30	8	6.29%
30-40	12	9.44%
40-50	26	20.47%
50-60	38	29.92%
>60	43	33.86%
Total	**127**	**100.00%**

The majority of the Patients were from >60- 33.86% followed by 50-60- 29.92%, 40-50- 20.47%
30-40- 9.44% and 20-30- 6.29%.

Table 2: Gender wise Distribution of the MI Patients

Sex	No.	Percentage (%)
Male	70	55.11%
Female	50	39.37%
Total	**127**	**100%**

Majority of the Patients were Male i.e. 55.11% and 39.37% were Female.

Table 3: Complications of Myocardial Infarction*

	No.	Percentage (%)
Congestive heart failure	13	48.81%
Cardiogenic shock	15	55.56%
Mitral regurgitation	9	33.33%
Stroke	5	18.51%
Major bleeding episode	9	33.33%

(*More than one complications per patient Present)

The most common complication observed in our study wereCardiogenic shock- 55.56% Followed by Congestive heart failure- 48.81%, Mitral regurgitation- 33.33%, Major bleeding episode - 33.33%, Stroke- 18.51%.

Table 4: Distribution of the Patients as per the Outcome

Outcome	No.	Percentage (%)
Recovered	81	63.77%
Complications	27	21.25%
Died	7	5.55%
Discharge Against medical Advise	12	9.44%
Total	**127**	**100.00%**

Out of the total 127 patients 63.77% recovered completely and Complications occurred in 21.25% cases and Death occurred In 5.55% cases and 9.44% patients taken Discharge Against medical Advice .

DISCUSSION

STEMI was diagnosed with reasonable accuracy in our study by clinical and ECG criteria. Troponin levels were obtained in a minority of patients because of the unavailability of the test in the state sector and the high cost in private-sector laboratories.MR after acute MI portends a poor prognosis, as demonstrated in multiple trials.[11,12] MR of mild-to-moderate severity is found in 13% to 45% of patients following acute MI. Whereas most MR is transient in duration and asymptomatic, MR caused by papillary muscle rupture is a life-threatening complication of acute MI. Fibrinolytic agents decrease the incidence of rupture; however, when present, rupture can occur earlier in the post-MI period than in the absence of reperfusion. Although papillary muscle rupture was reported to occur between days 2 and 7 in the prefibrinolytic era, the SHOCK (Should we emergently revascularize Occluded Coronaries in cardiogenic shock?) Trial Registry demonstrated a median time to papillary muscle rupture of 13 hours.[13] Papillary muscle rupture is found in 7% of patients in cardiogenic shock and contributes 5% of the mortality after acute MI.[14,15]LV dysfunction is to be expected after an acute MI. The degree of dysfunction correlates with the extent and location of myocardial injury. Non-infarcted myocardium can also become temporarily hypokinetic or akinetic due to ischemic "stunning." Patients with small, more distal infarctions may have discrete regional wall motion abnormalities with preserved overall LV function because of compensatory hyperkinesis of the unaffected segments.[16] Prior MI, older age, female gender, diabetes, and anterior infarction are risk factors for development of cardiogenic shock.[17,18] The incidence of clinically evident systemic embolism after MI is less than 2%. The incidence increases in patients with anterior wall MI. The overall incidence of mural thrombus after MI is

approximately 20%. Large anterior MI may be associated with mural thrombus in as many as 60% of patients.[19]
In our study we have observed thatThe most common complication observed in our study were Cardiogenic shock- 55.56% Followed by Congestive heart failure- 48.81%, Mitral regurgitation- 33.33%, Major bleeding episode - 33.33%, Stroke- 18.51%. Out of the total 127 patients 63.77% recovered completely and Complications occurred in 21.25% cases and Death occurred In 5.55% cases and 9.44% patients taken Discharge Against medical Advice

COMPLICATIONS

The most common complication observed in our study were Cardiogenic shock. Congestive heart failure, Mitral regurgitation, Major bleeding episode , Stroke Most of the Patients recovered completely.

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