



A STUDY OF SUCCESSFUL CLINICAL REPERFUSION IN ACUTE MYOCARDIAL INFARCTION

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ABSTRACT

Introduction: Coronary artery disease (CAD) is a major cause of mortality worldwide. It comprises of stable ischemic heart disease and unstable ischemic heart disease, better known as Acute Coronary Syndrome (ACS). Despite advances in the diagnosis and management, STEMI remains a major public health problem in the industrialized world and is on the rise in developing countries. Thrombolysis in the treatment of acute myocardial infarction is an important revolution in the management as it has changed the outcomes. **Aims & objectives:** To study successful clinical reperfusion (SCR) noninvasively using clinical markers of reperfusion. To evaluate the prognostic value of clinical markers of reperfusion in predicting early (30 days) prognosis after thrombolysis in Acute Myocardial Infarction. To observe Successful Clinical Reperfusion (SCR) in different variables like age of patient, time of presentation, location of MI and Killip's class at admission. **Materials and Methods:** The present study comprises of 50 cases of ST elevation myocardial infarction (STEMI) which were admitted in ICCU department, Pandit Deendayal Upadhyay Medical College and Hospital, Rajkot during the period between April 2022 to September 2022. Total 166 patients were thrombolysed with Streptokinase. **Results:** The patients who presented early (within 6 hrs. from symptom onset) and were successfully thrombolysed were more in number than who presented late. Inferior wall MI (80.95%) had more patients with SCR+ than in Anterior wall MI (64.2%) patients. LV dysfunction and akinesia in 2D ECHO were more severe in patients who failed thrombolysis (SCR-). Killip class 3 or 4 on admission were found out to have failed thrombolysis (SCR-) in most of the patients (78.6%). Mortality rate was more in SCR- patients and it makes this patient with poorer prognosis after thrombolysis and in such patients alternative strategies of reperfusion should be considered.

KEYWORDS : Reperfusion, Thrombolysis, Stemi, Killip.

INTRODUCTION

Coronary artery disease (CAD) is a major cause of mortality worldwide. It comprises of stable ischemic heart disease and unstable ischemic heart disease, better known as Acute Coronary Syndrome (ACS). Despite advances in the diagnosis and management, STEMI remains a major public health problem in the industrialized world and is on the rise in developing countries. Thrombolysis in the treatment of acute myocardial infarction is an important revolution in the management as it has changed the outcomes. Reduction in chest pain after thrombolysis has been shown to correlate with angiographically assessed patency and can be used as clinical marker of reperfusion. ST resolution after AMI is influenced by coronary artery status and achievement of early ST resolution is marker of reperfusion. Washout of creatine kinase MB (CK-MB), i.e., released from injured myocytes occurs after restoration of coronary artery patency. Hence rapid peaking of CK-MB after thrombolysis can be considered as marker of successful reperfusion. Because angiography is not available in every hospital, there is an increasing interest in simple noninvasive tests of patency assessment. Furthermore, clinical signs after thrombolysis in AMI may have a better correlation with functional reperfusion than the isolated image of angiographic patency.

AIMS & OBJECTIVES

To study successful clinical reperfusion (SCR) noninvasively using clinical markers of reperfusion. To evaluate the prognostic value of clinical markers of reperfusion in predicting early (30 days) prognosis after thrombolysis in Acute Myocardial Infarction. To observe Successful Clinical Reperfusion (SCR) in different variables like age of patient, time of presentation, location of MI and Killip's class at admission.

MATERIALS AND METHODS

The present study comprises of 50 cases of ST elevation myocardial infarction (STEMI) which were admitted in ICCU

department, Pandit Deendayal Upadhyay Medical College and Hospital, Rajkot during the period between April 2022 to September 2022. Total 166 patients were thrombolysed with Streptokinase.

Inclusion Criteria:

1. Patients with 1st time diagnosed ST Elevation Myocardial Infarction (ST elevation of at least 2 mm in contiguous precordial leads and 1 mm in two adjacent limb leads) irrespective of clinical symptoms
2. Age > 20 years
3. Patients who will be thrombolysed with Streptokinase

Exclusion Criteria:

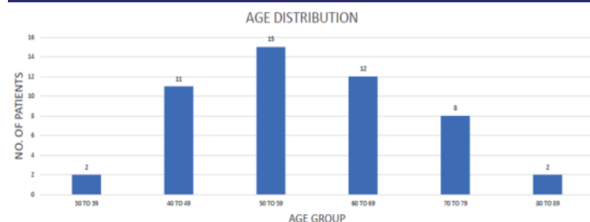
1. Patients with previous history of Ischemic Heart Disease
2. ACS - Unstable Angina and NSTEMI
3. Patients who had prior coronary reperfusion intervention

All the patients were thrombolysed (using 1.5 million International Units (IU) of streptokinase in 100mL normal saline over 45 minutes). After thrombolysis patients were divided into two groups based on success of thrombolysis ascertained using noninvasive criteria. Those with successful reperfusion were grouped into SCR (+) group and those without it were grouped into SCR (-) group. Both the groups were then followed for next 30 days and are compared. Successful clinical reperfusion was defined by presence of at least two of the following criteria at 2 hours of starting treatment.

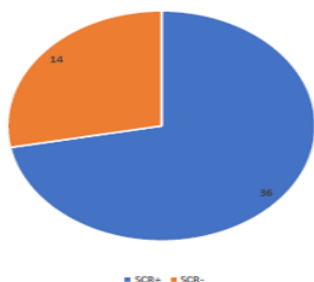
- Significant relief of chest pain (50% or more)
- Resolution of ST-segment elevation by more than 50% after starting SK infusion in the lead with maximum elevation on baseline ECG.
- Abrupt initial rise of CK-MB level, more than two-fold over upper normal or baseline values.

Analysis

It shows that 26 patients (52%) out of 50 were in the age group 40 to 59.



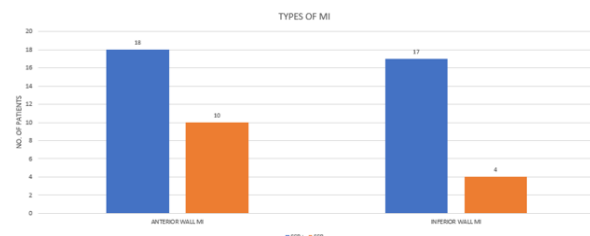
SUCCESSFUL CLINICAL REPERFUSION



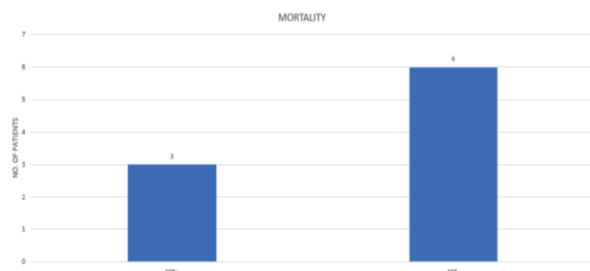
36 patients had Successful Clinical Reperfusion(SCR+) and 14 patients had No Successful Clinical Reperfusion(SCR-).



Killip class 2 patients were 10 in number out of which 7 were SCR+. Killip class 3 or 4 patients were 14 in number out of which 3 were SCR+.



28 patients had anterior wall MI from which 18(64.2%) had SCR+. 21 patients had inferior wall MI from which 17(80.95%) had SCR+.



Total mortality was 9 out of 50 patients. 6(42.8%) out of 14 patients died in SCR- group and only 3(8.3%) out of 36 patients died in SCR+ group. Mortality rate was more in SCR- patients.

RESULTS & CONCLUSION

The patients who presented early(within 6 hrs. from symptom onset) and were successfully thrombolysed were more in number than who presented late. Inferior wall MI(80.95%) had more patients with SCR+ than in Anterior wall MI(64.2%)

patients. LV dysfunction and akinesia in 2D ECHO were more severe in patients who failed thrombolysis(SCR-). Killip class 3 or 4 on admission were found out to have failed thrombolysis(SCR-) in most of the patients(78.6%). Mortality rate was more in SCR- patients. It is concluded that Killip's class at admission of more than or equal to three and absence of SCR are the predictors of mortality after thrombolysis. Mortality rate was very high in patients without SCR than in patients with SCR. It is further advocated that all patients of Acute Myocardial Infarction who receive thrombolysis should be assessed at the end of 2 hours for these simple, noninvasive clinical markers of reperfusion. Absence of SCR defines a group of patients with poorer prognosis after thrombolysis and in such patients alternative strategies of reperfusion should be considered.

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