Original article:

Effect of Thrombolysis in STEMI Patient Attending Cardiology Emergency at Bikaner City

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Abstract

Introduction: Thrombus causes closure of vessels in acute myocardial infarction and compromises flow in unstable angina. Successful epicardial vessel thrombolysis is necessary for better prognosis, but the outcome more strongly correlates with the micro vascular flow.

Methodology: The duration of our study was 4 months from January 2018 to May 2018. The study included data of 70 diagnosed cases of ST elevation Myocardial Infarction attending cardiology emergency of H.R.M.C. S. P. Medical College Bikaner. Diagnosis of STEMI in symptomatic patients was based on the ECG criteria.

Results and Conclusion: The Thrombolysis in Myocardial Infarction Trial shows a median time of 30 min from administration to the establishment of grade 2 or 3 coronary flow in patients successfully reperfused using thrombolytic agents.

Keywords: Myocardial Infarction, STEMI, Thrombolysis.

INTRODUCTION

Thrombus causes closure of vessels in acute myocardial infarction and compromises flow in unstable angina. Successful epicardial vessel thrombolysis is necessary for better prognosis, but the outcome more strongly correlates with the micro vascular flow. ST segment on ECG is a better indicator of prognosis. When there is occlusion of an epicardial coronary artery, ST elevation is shown on ECG which is electrical manifestation of the pathophysiological changes and is known as ST-Elevation Myocardial Infarction (STEMI). Although cardiac arrest initiated by intracoronary thrombosis in situ is different from the mechanisms associated with pulmonary thromboembolism, thrombolysis has proved to be an effective treatment strategy for both these diseases. With this view present study was planned to find out the efficacy of thrombolytic therapy of STEMI patient.

STUDY METHODOLOGY

The duration of our study was 4 months from January 2018 to May 2018. The study included data of 70 diagnosed cases of ST elevation Myocardial Infarction admitted in cardiology emergency of H.R.M.C. S. P. Medical College Bikaner. Diagnosis of STEMI in symptomatic patients was based on the ECG criteria. The established criteria of Myocardial Infarction which defines STEMI as new ST elevation at the J point in at least 2 contiguous leads of ≥2 mm (0.2 mV) in men or ≥1.5 mm (0.15 mV) in women in leads V2–V3 and/or of ≥1 mm (0.1 mV) in other contiguous chest leads or the limb leads.

Inclusion Criteria

Admission to the coronary care unit

- Patient willing to give consent.
- Patient's age more or equal to 30 years.
- ECG showing ST elevation myocardial infarction.
- CK MB LEVELS raised.
- Patient thrombolysed with streptokinase within 30 minutes of admission.

Exclusion Criteria

- Patient not willing for consent.
- Previous history of ischemic heart disease or any other heart disease.
- No elevation of ST segment.
- Any active bleeding tendency

Table 1: Age wise distribution of the patients

Sr No.	Age Groups(yrs)	Frequency
01	<40	07(10%)
02	41 to 50	06(08.6%)
03	51 to 60	14(20%)
04	>60	43(61.4%)
	TOTAL	70(100%)

RESULTS

The Thrombolysis in Myocardial Infarction Trial shows a median time of 30 min from administration to the establishment of grade 2 or 3 coronary flow in patients successfully reperfused using thrombolytic agents.

DISCUSSION

From the clinical point of view left ventricular remodeling is a dynamic process, starting in the acute phase of myocardial infarction (MI) with infarct expansion-that is, rearrangement of wall structure leading to myocardial thinning and lengthening, and progressing to left ventricular dilation and hypertrophy, the development of infarct expansion commonly precedes myocardial rupture and denotes a worsened prognosis.[1] Left ventricular infarct expansion in the early phase of acute myocardial infarction is produced by myocardial structural changes such as

myocyte necrosis, slippage, or rupture, and reduction in the intercellular space[2], which result in infarct segment lengthening and wall thining.[3,4] Interventions that aim to improve outcome in cardiac arrest have proved to be disappointing. In particular, no drug has been reliably proved to increase survival to discharge after cardiac arrest. Given that coronary thrombosis in situ is implicated in a large proportion of patients with cardiac arrest, the use of thrombolytic agents has been suggested. When considering the potential benefits of thrombolysis in cardiac arrest, it is equally important to explore the risk. Many clinical guidelines list prolonged CPR as a contraindication for thrombolysis.[5,6]

However, there was a significant difference in the prevalence of in-hospital mortality between those patients with acute anterior STEMI who developed early left ventricular infarct expansion compared with patients with acute STEMI without left ventricular infarct expansion.[7]

CONCLUSION

The Thrombolysis in Myocardial Infarction Trial shows a median time of 30 min from administration to the establishment of grade 2 or 3 coronary flow in patients successfully reperfused using thrombolytic agents.

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