

A Study on Systemic Hypertension Influencing the Success of Thrombolysis by Streptokinase in ACS - Stemi Patients in CMCH

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Abstract: Coronary heart disease is a health epidemic present worldwide. Thrombolysis by fibrinolytic agents is still the preferred mode of treatment in India. Several factors contribute to the success of re perfusion in a case of ST elevation myocardial infarction including age, sex, time taken from onset of pain to treatment, co morbidities like diabetes and systemic hypertension, lifestyle changes like smoking, whether Anterior wall myocardial infarction or Inferior wall myocardial infarction, etc. So, in the following study, the influence of Systemic hypertension on the success of thrombolysis by Inj.Streptokinase in ST elevation myocardial infarction patients have been analysed and correlated with the data obtained from subjects from similar studies.

Key words: Coronary heart disease, Steptokinase

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I. Introduction

The incidence of Myocardial infarction (MI) in India is steadily increasing over the past few decades. Rural to urban ratio in rise in MI cases is around 2:9. This could probably be due to migration from rural to urban cities. Another major problem is the occurrence of MI at a younger age in the Indian population.

STEMI is an emergency due to acute total occlusion of an epicardial coronary artery, most often due to atherosclerotic plaque rupture / erosion and subsequent thrombus formation. Compared to UA / NSTEMI, STEMI is associated with a higher in-hospital and 30 day morbidity and mortality. Left untreated, the mortality rate of STEMI can exceed 30% and the presence of mechanical complications (papillary muscle rupture, ventricular septal defect, and free wall rupture) increases the mortality rate to 90%.

Keys to treatment of STEMI include rapid recognition and diagnosis, coordinated mobilization of health care resources, and prompt reperfusion therapy.

Thrombolysis by fibrinolytic agents is still the preferred mode of treatment in India. Only 15% to 20% of patients with MI are able to undergo primary PCI, available in only a few tertiary hospitals in the city limits. Several factors contribute to success of re perfusion in a case of STEMI – age, sex, time taken from onset of pain to treatment, co morbidities like diabetes and systemic hypertension, lifestyle changes like smoking, whether AAMI OR IWMI, etc. So, in the following study, the influence of Systemic hypertension on the success of thrombolysis by Inj.Streptokinase in STEMI patients have been analysed and correlated with the data obtained from subjects from similar studies. Hypertension is one of the leading causes of the global burden of disease. Nearly “13–15% “of the total deaths were attributable to high BP in 2001. Hypertension doubles the risk of cardiovascular diseases, including coronary heart disease (CHD), congestive heart failure (CHF), ischemic and ; hemorrhagic stroke, renal failure, and peripheral arterial disease.

JNC 8 criteria :

A person is said to be hypertensive and in need of medication if :

- i. In “age > 60 years” : “BP > 150/90 mm of Hg “
- ii. In “age < 60 years” : “BP > 140/90 mm of Hg”
- iii. In diabetics and CKD patients : Target BP should be <140/90 mm of Hg

Effect on thrombolysis :

Though high BP is a major risk factor for CAD, hypertension per se has no major influence on the success or failure of thrombolysis.

II. Aim Of The Study

1. To study Systemic hypertension influencing the success of Thrombolysis in Acute coronary syndrome – STEMI patients.
2. Comparing the study with similar studies conducted before in famous institutions.

III. Methods And Materials

This study was conducted with total of 102 patients (with or without hypertension) were treated by thrombolysis because of Acute coronary syndrome with STEMI. All parameters were compared and studied in hypertensives and Non hypertensives.

Investigations done: Electro cardiogram , Blood pressure monitoring

Table I: Influence Of Systemic Hypertension On Success Of Thrombolysis :

	Success			Failure		
	Number	Percentage within SHT	Percentage within result	Number	Percentage within SHT	Percentage within result
Systemic hypertension	12	60%	17.1%	8	40%	25%
Not a K/C/O Systemic hypertension	58	70.7%	82.9%	24	29.3%	75%

Pearson Chi – Square –

Value – 0.860

Df – 1

P = 0.354

Fisher’s exact test = 0.252

Systemic Hypertension has no significant relation with the success of thrombolysis

Chart I : Successful Thrombolysis – H/O SHT

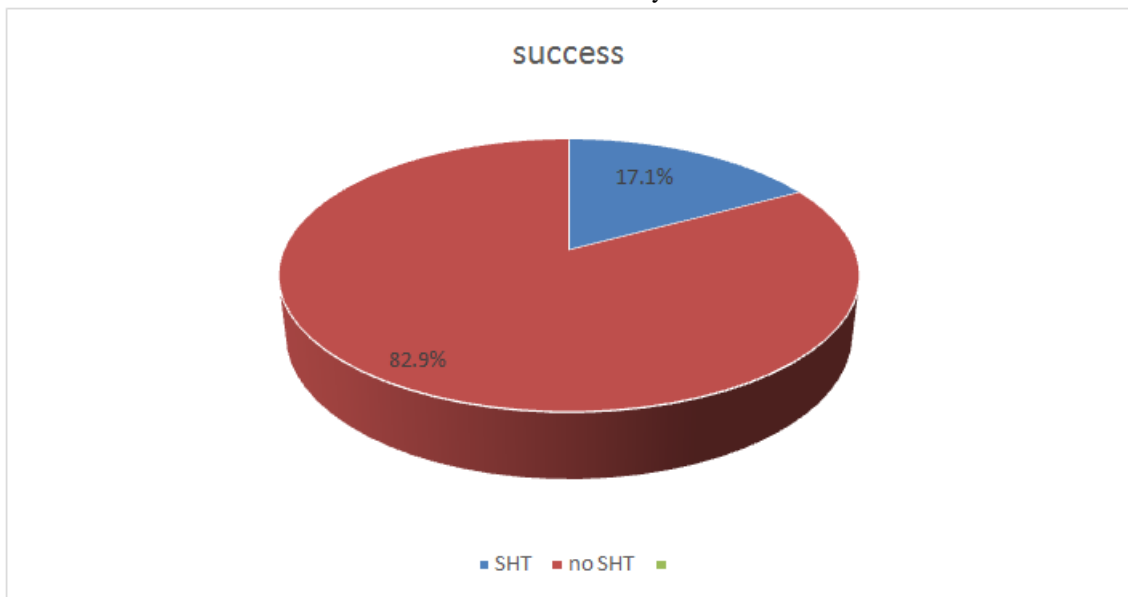
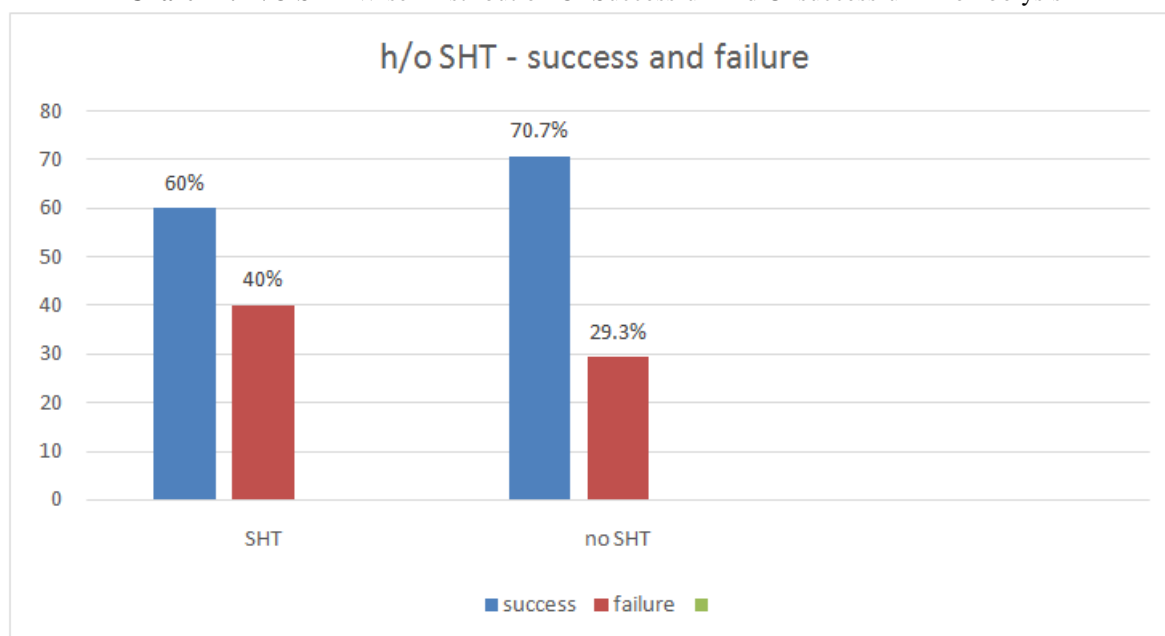


Chart II : H/O SHT Wise Distribution Of Successful And Unsuccessful Thrombolysis



In our study , of the 102 patients thrombolysed , 20 were hypertensives on medications and 82 were non-hypertensives . The success and failure rate of thrombolysis among hypertensives were found to be 60% and 40% respectively and the success and failure rate of thrombolysis among non-hypertensives were found to be 70.7% and 29.3% respectively . On statistical analysis ,there was no significant relationship between hypertension and result of thrombolysis using Inj.Streptokinase ($p = 0.354$)

A similar study “Original research Factors influencing the outcome of thrombolysis in acute myocardial infarction “ was done by Dr.GirishRonad et al at, Department of General Medicine, ESIC Medical College, Gulbarga from October 2011 to October 2013. A total of 100 patients were included in the study. The success rate of thrombolysis was not found to be different among hypertensive/non hypertensive patients. Among the 30 hypertensives , 21 were thrombolysed successfully and among the 70 non-hypertensives, 44 were thrombolysed successfully . p value was 0.47 i.e. insignificant.

IV. Conclusion

1. Presence or absence of systemic hypertension at the time of presentation for thrombolysis had no influence on the success or failure.
2. Limitations of the study are smaller sample size ,Cross sectional study design ,Chances of confounding bias are more in this study , no cardiac enzymes to confirm the diagnosis of myocardial infarction, No coronary angiogram to confirm the localization of thrombus in the coronary arteries , which is based on ECG features alone in this study .

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