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A Study on Window Period Influencing the Success of Thrombolysis by Streptokinase in ACS - Stemi Patients in CMCH General Medicine Department

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Abstract: *Acute myocardial infarction is a major health disease in the world. Thrombolysis by fibrinolytic agents is the main treatment for myocardial infarction . Success rate of re perfusion in a case of ST elevation myocardial infarction is influenced by many factors.Among these Window period has great influence on thrombolysis outcome . In this study , the influence of Window period on the success of thrombolysis in ST elevation myocardial infarction have been studied and correlated with similar studies .*

Key words: *Acute myocardial infarction , Window period.*

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I. Introduction

Fibrinolytic therapy can reduce the relative risk of in-hospital death by "up to 50%" when administered within the first hour of the onset of symptoms of STEMI, and much of this benefit is maintained for at least 10 years. The timing of reperfusion therapy by fibrinolysis or a catheter-based approach is important because myocardium can be saved only before it has been irreversibly injured . "Every minute is important " and those treated within 1–3 h of the onset of symptoms generally benefit the most.

Some benefit is still possible even up to 12 h, especially if chest discomfort is still present and ST segments remain elevated.

Door to needle time – it describes the time taken to administer the fibrinolytic agent after the patient has entered the ER door . The shorter the door to needle time , the more efficient ER is to cope with MI .

Door to balloon time – the interval between the arrival of the patient in the ER till the guide wirecatheter crosses the occluded coronary artery in the cardiac cathlab .

The success rate is higher if the patient presents earlier to hospital (< 3 hours) . The success rate declines as time progresses up to 12 hours after which time , fibrinolysis is rarely attempted .

II. Aim Of The Study

1. To study Window period influencing the success of Thrombolysis in ACS – STEMI patients.
2. Comparing the study with similar studies conducted before in famous institution.

III. Materials And Methods

Influence of Window period on thrombolysis study was conducted in 102 patients in our hospital . The success and failure rate of thrombolysis according to the Window period was studied.

Materials: Electro cardiogram ,Timing of Chest pain

At the GISSI trial , the initial report changed the outlook of physicistsall over the world regarding thrombolytic therapy for STEMI . Around 11,806 patients from 176 coronary care units in different hospitals were included during a period of 17 months (February 1984 to June 1985) for the study. The results showed patients had higher chance of survival if the time was shorter between the symptom onset and the streptokinase infusion .

A similar study "Original research Factors influencing the outcome of thrombolysis in acute myocardial infarction " was done by DrGirishRonad 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 .In this study also it is evident. Success rate was 80% in those patients thrombolysed within 4 hours from the onset of symptoms. The success rate decreased to 61.7%, when they were thrombolysed

after 4 hrs but within 8 hours of onset of symptoms. Success rate came down to 30.7%, when STK/ TNK was administered after 8 hours but within 12 hours ($p < 0.01$).

In our study , of the 102 patients thrombolysed , 43 patients were thrombolysed within 3 hours , 37 patients between 3 to 6 hours and 22 patients in more than 6 hours (till 12 hours) . The success and failure rate of thrombolysis within 3 hours were found to be 83.7% and 16.3% respectively , the success and failure rate of thrombolysis between 3 to 6 hours were found to be 64.9% and 39.1% respectively and the success and failure rate of thrombolysis in more than 6 hours (< 12 hours) were found to be 45.5% and 54.5% respectively . On statistical analysis ,there was significant relationship between window period and result of thrombolysis using Inj.Streptokinase ($p < 0.05$) . Success rate of thrombolysis is found to be greater for the patients thombolysed within 3 hours (83.7%) , decreased to 64.9% in those between 3 to 6 hours and further decreased to 45.5% in those thrombolysed in more than 6 hours.

TABLE I: INFLUENCE OF WINDOW PERIOD ON SUCCESS OF THROMBOLYSIS

	Success			Failure		
	Number	Percentage within window period	Percentage within result	Number	Percentage within window period	Percentage within result
<3 hrs	36	83.7%	51.4%	7	16.3%	21.9%
3-6 hrs	24	64.9%	34.3%	13	35.1%	40.6%
>6hrs	10	45.5%	14.3%	12	54.5%	37.5%

Pearson Chi – Square –

Value – 10.280

Df – 2

P <0.05 .

Window period from onset of pain to thrombolysis has significant relation with the success of thrombolysis

CHART I : SUCCESSFUL THROMBOLYSIS – INFLUENCE OF WINDOW PERIOD

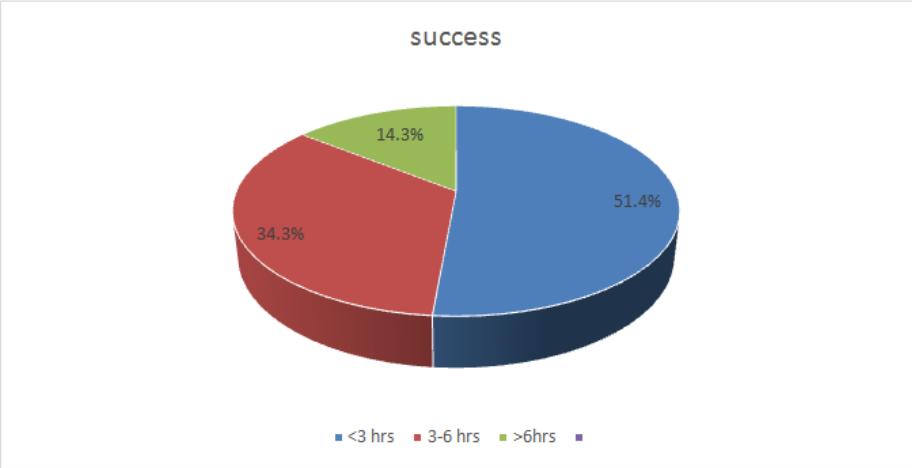


CHART II : INFLUENCE OF WINDOW PERIOD - THROMBOLYSIS FAILURE

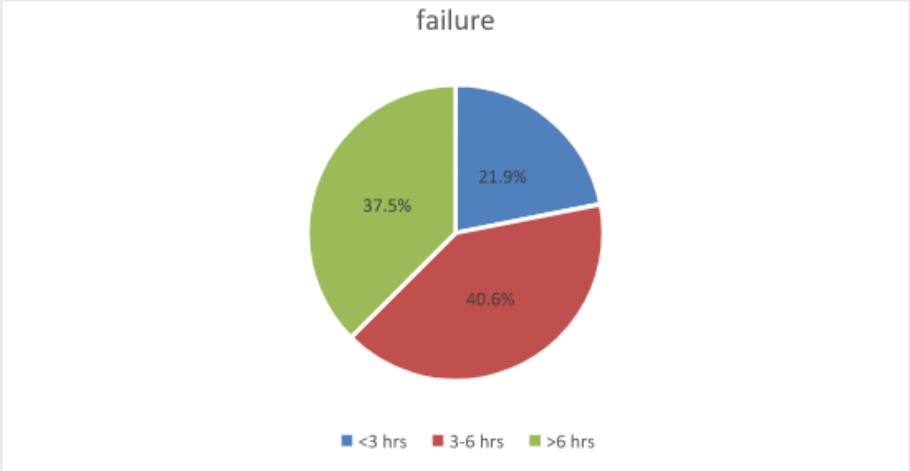
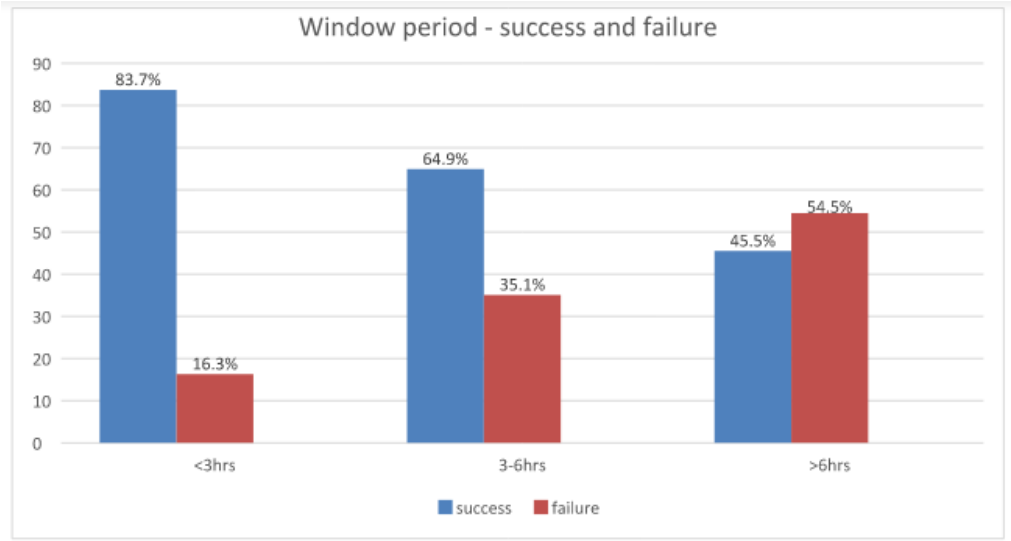


CHART III : WINDOW PERIOD WISE DISTRIBUTION OF SUCCESSFUL AND UNSUCCESSFUL THROMBOLYSIS



IV. Conclusion

Time window period significantly influenced the outcome of thrombolysis, implying that earlier the presentation, better is the success rate. Success rate was higher in those who presented in less than 3 hours.

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