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Thrombolytic Therapy for Acute Myocardial Infarction: Insight Into for Delay in Diagnosis and Treatment

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ABSTRACT

The management and outcome of acute myocardial infarction have not been well studied in developing countries, albeit segment information from the World Health Organization show that creating nations contribute a significant offer to the worldwide weight of cardiovascular ailment. Point: To set up the greatness of pre emergency clinic and medical clinic delays in determination and in starting thrombolytic treatment in qualified patients with intense ST rise myocardial dead tissue. Patients &Methods: An observational-cross sectional investigation led in the coronary consideration unit of Baghdad showing emergency clinic from January 2018 to July 2018. Detailed in-medical clinic history, including age, sex, coronary corridor infection chance factors, the primary spot of referral after the torment started, beginning of the agony and reasons for delay in referral. The finding of intense myocardial localized necrosis (AMI) depended on the meanings of the American College of Cardiology. An ECG was recorded not long before beginning the Tenecteplase and it was rehashed an hour and a half after thrombolytic treatment, later survey the nearness of reperfusion lists (Reduction of half in ST portion rise in the infarct lead and missing of chest torment notwithstanding heart compounds changes). Results: Seventy-nine patients were enrolled for this investigation with mean time of 56.2± 12.5 years; 86% were men, 91% of the patients gave chest torment. The predominance of Diabetes mellitus, smoking, Hypertension, and dyslipidemia were 40%, 55%, 32%, and 7% of the examination populace separately. The middle deferral between side effect beginning and emergency clinic appearance was 22.2 hours, Thrombolytic treatment was utilized for 56•9% of patients. In-clinic mortality was 5.9%. In-emergency clinic results included cardiovascular breakdown 41.2% for the individuals who didn't get thrombolytic treatment VS 2.2% for the individuals who get it, arrhythmia 5.9% for the individuals who didn't get thrombolytic treatment VS 4.4% for the individuals who got it. End: Underutilization of thrombolytic treatment in qualified patients with intense myocardial dead tissue because of deferral in looking for clinical consideration and referral delay. Utilization of thrombolysis in intense myocardial localized necrosis was related with huge abatement in-emergency clinic mortality and dreariness.

Key words: Chest Pain, Myocardial Infarction, Thrombolytic Therapy, Dyslipidemia.

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INTRODUCTION

Coronary illness is the main source of death around the world, after an intense myocardial localized necrosis, early and fruitful myocardial reperfusion with the utilization of thrombolytic treatment or percutaneous coronary mediation is the best technique for lessening the size of a myocardial infarct and improving the clinical result. (1) Myocardial localized necrosis is characterized in pathology as myocardial cell demise because of delayed ischemia..(2) Erosion, fissuring, or crack of defenseless atherosclerotic plaques has been resolved to be the starting instrument of coronary thrombotic occlusion,(3). Hazard factors for coronary vein sickness are assembled into two classes: Non modifiable And Modifiable hazard factors (4) Acute coronary disorder most ordinarily presents as a weight type chest torment that commonly happens very still or with insignificant effort enduring >10 minutes (5). The ECG changes are best found in the leads that „face" the ischaemic or infarcted territory. (6) despite clinical Although endeavors were incompletely successful, the grimness and mortality from AMI remained high.(7) One way to deal with the treatment of occlusive apoplexy comprise of pharmacological disintegration of the blood coagulation by intravenous mixture of plasminogen activators that actuate the fibrinolytic system(8)The advantages of fibrinolytic treatment in patients with ST height or group branch square MI are entrenched, with a period subordinate decrease in both mortality and dreariness rates during the underlying 12 hours after side effect onset.(9) The fibrinolytic operators tissue plasminogen activator (tPA), streptokinase, tenecteplase (TNK), and reteplase (rPA) have been affirmed by the U.S. Food and Drug Administration for intravenous use in patients with STEMI.(10) Successful treatment is related with relief from discomfort, goals of intense ST rise and, once in a while, transient arrhythmias (for example idioventricular rhythm).(11).

AIMS OF THE STUDY

To evaluate Time delays in the diagnosis and treatment of acute myocardial infarction and to assess inpatient Outcomes of those whether receiving or not receiving thrombolytic therapy.

PATIENTS & METHODS

This examination with cross-sectional plan was done on 79 patients who were hospitalized and rewarded due to STEMI in the CCU of Baghdad Teaching Hospital from January 2018 to July 2018, those with back AMI and recently created LBBB have been barred. Nitty gritty in-emergency clinic history, including age, sex, coronary supply route illness hazard factors, the primary spot of referral after the torment started, beginning of the torment and reasons for postponement of referral, patients research facility tests, and in medical clinic clinical results were gathered and gone into

a record. The personal and clinical data were collected with written consent Institutional ethics committee approval was obtained. Diabetes mellitus, hypertension and dyslipidemia were characterized concurring (history of diabetes analyzed or potentially fasting blood glucose 7.0 mmol/l (126 mg/dl) or more noteworthy, history of hypertension analyzed as well as rewarded with medicine, diet, pulse more prominent than 140/90 mmhg, dyslipidemia analyzed as well as rewarded by a doctor or absolute cholesterol more prominent than 5.18 mmol/l (200 mg/dl), low-thickness lipoprotein more prominent than or equivalent to 3.37 mmol/l (130 mg/dl), or high-thickness lipoprotein < 1.04 mmol/l (40 mg/dl),current smoker and positive family ancestry of IHD. The determination of AMI depended on the meanings of the American College of Cardiology key information components and definitions for estimating the clinical administration and results of patients with ACS.(11) Narcotics were given to all patients with chest torment, all patients got heparin and oral ibuprofen. The thrombolytic specialist which has been utilized was tenecteplase as a solitary weight-based intravenous bolus of 0.53 mg/kg more than 10 seconds. An ECG was recorded not long before beginning the tenecteplase and it was rehashed following an hour and a half, these two records were contrasted and utilized with evaluate the nearness of ECG reperfusion files. we considered the Reduction of half in ST fragment height in the infarct lead indicating the most noteworthy ST section rise estimated from the J point as the cut point for progress or disappointment of reperfusion.(12) Statistical examination : All information were prepared utilizing programming bundle SPSS 20, information were viewed as measurably critical when level of noteworthiness is under 0.05 (p esteem) Chi square test was utilized and whenever the situation allows (2 x 2 tables) Fisher precise test adjustment was utilized rather than chi square to break down discrete information. Two example t test was utilized to investigate the distinctions in implies between gatherings. Binary logistic regression was used to analyze the effect of time from presentation of symptoms on success of treatment in patients receiving thrombolytic therapy, odd ratio and its 95% confidence interval was the main parameter to assess the nature of relationship (if more than one then direct relationship, less than one inverse relationship, or equal to one no relationship). Probability plot was drawn to present the probability of the event rate according to time.

RESULTS

Of 79 patients with mean age of 56.2years, about 86.08% of patients were males and 13.92% were female, 55.7% of patients were smoker and 44.3% were not smoker, about 40.51% had diabetes, 32.91% of patients were hypertensive, and 15.19% had positive family history of heart diseases, 22.278 hours was the mean time of presentation as shows in Table (1): Patients characteristics of the entire study (descriptive data).

Table 1

Variables		NO.	%
Gender	**Female**	**11**	**13.92**
	Male	68	86.08
Smoking	Negative	35	44.30
	Smoker	44	55.70
DM	DM	32	40.51
Not Diabetic	47	59.49	
Hypertension	Hypertensive	26	32.91
	Not	53	67.09
Dyslipidemia	Yes	6	7.59
	Not	73	92.41
Family history of heart disease	Positive	12	15.19
	Negative	67	84.81
Age (mean ± SD)	56.22 ± 12.58		
Time from presentation hours (mean)	22.278		

Most of Patients who receive thrombolytic therapy were male (41 patient 60.3%), twenty-eight of those who are receiving thrombolytic therapy, their age less than 70 year without significant association as shows in table 2.

Table 2: Patient characteristics and medical history divided according to provision of treatment

Variable	Not given thrombolysis		Given thrombolysis		P value
Gender	**No**	**%**	**No**	**%**	
Female	7	63.6	4	36	0.192
Male	27	39.7	41	60.3	
Age					
≥60	18	51.4	17	48.6	0.253
<60	16	36.4	28	63.6	

Table 3 shows, Mean presentation time for those who were not given thrombolytic therapy was 45.9 hours compared to 4.4 hours for those who received thrombolytic therapy, Presentation time had significant effect on treatment outcome in which mean presentation time in patient with successful therapy were lower (3.66 hours) than those who did not benefit from thrombolytic therapy (7 hours) and this difference was significant (p value 0.038).

Table 3: Comparison between mean time of different variables

Variable	Number	Percentage	Mean (hours)	SD	P value
Mean time from onset of chest pain according to provision of treatment					
Not given Tx	34	43.04	45.9	44.7	<0.001
Given Tx	45	56.96	4.4	2.97	
Mean time from onset of chest pain according to outcome of treatment					
Successful	35	77.8	3.66	2.00	0.038
Not	10	22.2	7.00	4.2	

successful				9	

As presentation time increase there is decrease in the probability of successful treatment (the odd ratio less than 1; i.e. 0.689) and this relationship was significant as shows in tab.4 and figure 1.

Table 4: Univariate association of time from presentation with success of treatment in patients receiving thrombolysis

Variable	β[1]	OR	95% CI	P value
Time from onset of chest pain	-0.732	0.689	0.525–0.905	0.007 [SD]
(1) Unstandardized correlation coefficient beta				
SD: significant difference, OR: odd ratio, and CI: confidence interval				

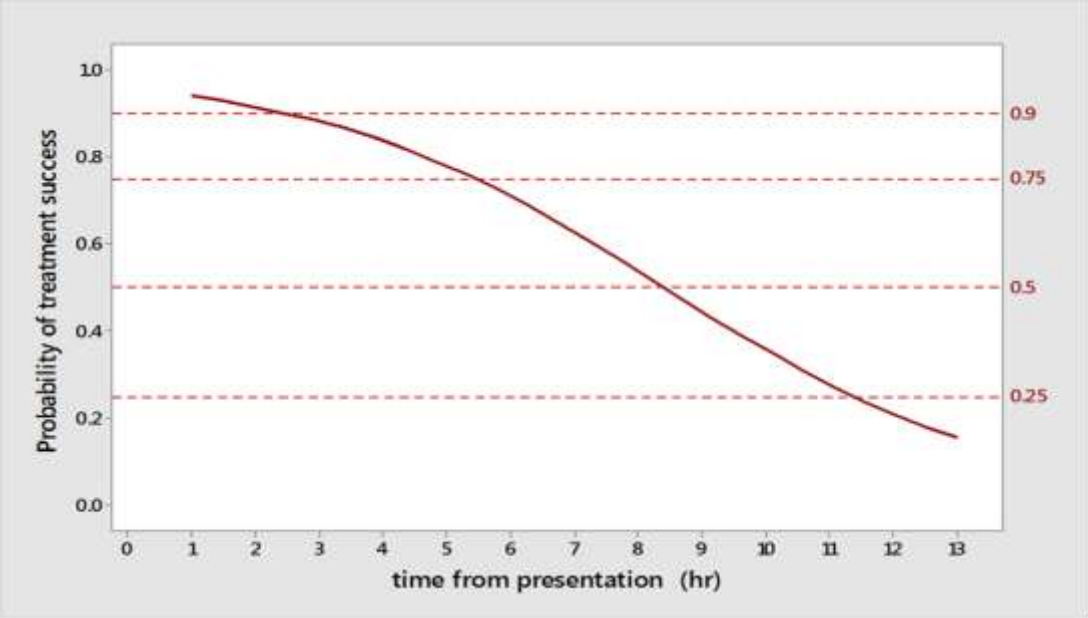

Figure 1: Probability of treatment success against time (there is inverse relationship)

Delay in seeking medical care was the major reason for not given treatment (73.5%), while the rest of the reasons have similar rate.

Table 5: Reasons for not giving thrombolytic

Variable	No	Percent
Medical error	2	5.9
Delay in seeking medical care	25	73.5
Contra indication	3	8.8
Referral delay	4	11.8
Total	34	100.0

Complications were more common in patients who did not receive thrombolytic therapy of which heart failure was more significant in patient who did not receive treatment (41.2%) compared to those who received treatment (2.2%), three cases of minor bleeding occurred in those who received treatment.

Table 6: Cross tabulation of patients complications and death divided by treatment given

Variables	Thrombolytic tx	NO	Yes	P value
Complications	Arrhythmia			
	No.(%)	2 (5.9%)	2 (4.4%)	<0.001
	heart block			
	No (%)	2 (5.9%)	1(2.2%)	=
	HF			
	No (%)	14 (41.2%)	1(2.2%)	=
	Bleeding			
	No (%)	0 (0.0%)	3(6.7%)	=
	apical aneurysm			
	No (%)	1 (2.9%)	0(0.0%)	=
Death	died No (%)	2(5.9%)	0(0.0%)	0.182

DISCUSSION

Our examination was performed on 79 Iraqi patients with a determination of AMI, 86% were men and 14% were ladies. The mean age of the patients was 56.2 ± 12.5 years. The mean age of our patients was lower than the mean period of

patients in created nations, which was 67 years in an European report. (13) It was likewise marginally lower than the mean period of creating nations, which was 60 years in Lebanese AMI patients. (14)

The predominance of smoking among AMI Iraqi patients was 55%. An American examination gave solid proof that dynamic smoking is related with a previous time of beginning of first areas of localized necrosis, with a striking converse portion reaction impact, halting smoking seems to lessen the untimely event of coronary occasions. (15) The general pervasiveness of history of diabetes mellitus in AMI patients was 40%. This commonness was higher than the pervasiveness of diabetes mellitus in created nations, yet it was like the predominance of DM in the AMI patients in creating nations, for example, Kuwait 41%. (16) The commonness of previous history of hypertension among AMI Iraqi patients was 32%, Our predominance pace of hypertension was practically identical to the pervasiveness of hypertension among AMI patients in creating nations, for example, Kuwait 35%.(16) history of dyslipidemia was found in just 7% which was lower than in creating nations 56%.(16)

The median delay between symptom onset and hospital arrival in this study was 22.2 hours, when compared to other studies it was 360 minutes in India (17), 150 minutes in Saudi Arabia (18), and only 2hours and 9 minutes in Italy. (13)

In our study Women had more delay compared to men (63.6% of females were not given thrombolytic therapy compared to 39.7% of males), although it was statistically not significant(P value 0.19), In an investigation in Scotland in 2000, Robert demonstrated that ladies had the most postponement in alluding to emergency clinic. Maybe the purpose behind these outcomes is the high edge of torment resilience in ladies or increasingly basic pace of MI in men, and that ladies don't credit chest agony to heart and its related ailments thus they don't act to decrease it. Then again, the ladies are affected with respiratory failures in more established ages, so their feeling of torment may diminish with age; and this torment may turn out to be more tolerable.(19) IN those with propelling age, the pace of postponement has by and large increased(51.4% of The patients more seasoned than 60 years of age didn't get thrombolytic treatment contrasted with 36.4% for those under 60 years). In an examination by Cramlish in 2000 on patients with intense MI it was demonstrated that as age builds, the pace of postponement additionally increments. (20)

In our study the most common cause for not giving thrombolytic therapy was delay in seeking medical care 73.5%, causes of delay in more than half of the patients included "trusting the indications to ease unexpectedly", "ascribing the manifestations to different issues other than heart issues" and "dismissing the side effects". About 8.8% of the patients were not giving thrombolytic treatment because of the nearness of contraindication, 11.8% due to referral delay and in about 5.9% clinical blunder was the explanation behind not giving thrombolytic treatment.

An aggregate of 47(59.4%) patients who were qualified for thrombolytic treatment were distinguished, 2 (2.5%) of whom didn't get it, henceforth (56.9%) of patients got this treatment, which was effective in about 35(77.8%). contrasted with different examinations 64.4% of patients with STEMI got thrombolytic treatment while 38.6% were not qualified for thrombolytic treatment in Qatar. (21)

In this study, Mean presentation time for those who were not given thrombolytic therapy was 45.9 hours compared to 4.4 hours for those who received thrombolytic therapy, Presentation time had significant effect on treatment outcome in which mean presentation time in patient with successful therapy were lower (3.66 hours) than those who did not benefit from thrombolytic therapy (7 hours) and this difference was significant (p value 0.038). Time to introduction with AMI keeps on being a significant general medical issue. In earlier examinations, 20% to 35% of AMI patients showed up at the medical clinic following 6 hours (22-24), Perhaps significantly all the more upsetting is the huge extent of patients that introduced following 12 hours, when the "window" of likely profit by thrombolytic treatment is totally shut. (25)

Patients rewarded with thrombolytic treatment had lower frequency of in-clinic intricacy in regards to intense cardiovascular breakdown, heart square and arrhythmia. Of these difficulties cardiovascular breakdown was altogether increasingly basic among the patients who didn't get thrombolytic treatment. Thrombolytic treatment decreased death rate in AMI patients (5.9% in patients who didn't got thrombolytic treatment VS 0.0% in the individuals who got it), by and large in our examination The in-medical clinic death rate was lower than in other studies(5.9% in our investigation contrasted with 6.2% in Kuwait,8.6% in India and 13% in Lebanon).(14,16,17).

CONCLUSIONS

Patients with acute myocardial infarction in this study were younger than those represented in clinical trials. With high rates of smoking, diabetes and hypertension. Reperfusion therapy is underutilized in our hospital due to delay in seeking medical care and referral delay, and there was high percentage of delayed presentation hence no thrombolytic therapy was given. In the current investigation, utilization of thrombolysis in intense myocardial dead tissue was related with huge abatement in-emergency clinic mortality and dismalness, which might be improved besides by using cardiovascular catheterization administrations.

CONFLICT OF INTEREST

None

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