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Prescribing patterns of thrombolytics in acute MI and their outcome

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Abstract
To study the prescribing patterns of thrombolytics in Acute Myocardial infraction and their outcome in Tertiary care hospital. A prospective observational study was carried out in the Coronary care unit (CCU) (medicine in-patient department) of Rajah Muthaiah Medical College and hospital. A total of 100 patients were enrolled for the study to investigate the prescribing patterns of thrombolytics using a predesigned format out of which 100 of them completed successfully. Where door to needle time have a significant role in determining the efficacy of thrombolytics. Majority of subjects affected in our study were elderly male age group of 61-70 years followed by age group 51-60 years females suffered from acute myocardial infraction. It was also found that male patients (72%) suffered more than the female patients.

Keywords: acute myocardial infraction, coronary care unit (CCU)

Introduction
According to WHO, Drug utilisation study is defined as the "study of marketing, distribution, prescription and use of drug in the society highlighting on the resulting medical, social and economic consequences". The principle aim of the drug utilisation study research is to facilitate the rational use of drugs. Drug utilisation research affords a baseline reference points about effects of diverse interventions in prescribing the concerned drug.
[1] Thrombolytics are the group of drugs which are used to breakdown the blood clots. Thrombolysis is also known as thrombolytic therapy, is a treatment to dissolve dangerous clots in blood vessels, improve blood flow and prevent damage to tissue and organs. Thrombolysis may involve the injection of clot bustine drugs through intravenous or through catheter that delivers drugs directly to the site of blockage [2]. Thrombolysis is often is used as an emergency treatment to dissolve blood clots that form in arteries, the main cause of cardiac ischemia and ischeamic stroke and in the arteries of lungs. Thrombolysis is also used to treat for blood clots in veins that cause deep vein thrombosis, bypass grafts, dialysis catheter. Types of thrombolysis include streptokinase, rectiplase, anistreplase, tenecteplase [2]. Thrombolysis can safely and effectively blood flow and relieve or eliminate symptoms in many patient without the need for more invasive surgery. Thrombolysis may not be recommended for patients who use blood thinning medications, dietary supplements or people with increased risk of bleeding. A blood clot[thrombus] develops in the circulatory systems which consolidates in mechanism in human body to repair injured blood vessels if thrombus is formed when it is not needed this can produce significance consequences like thrombus, embolism, ischemia which leads to stroke. Embolism accuse when blood clot is formed inside a blood vessel cardiac ischemia occurs. An ischemic stroke can occur as a result of a barrier within a blood vessels supplying blood to the brain thrombolytic therapy is a treatment to get rid of problems raised due to blood clots or thrombus to renovate function to the affected area.
[3] Myocardial infarction is a medical term related to heart attack. Acute myocardial infarction is a major cause of death and disability worldwide. The most common symptoms include sudden acute onset of pain, excessive sweating, palpitation, giddiness, this leads to cardiacfailure. Women more often have atypical symptoms than men. Most myocardial infraction occurs due to coronary artery disease. Risk factors include high blood pressure, smoking, diabetes, obesity, excessive alcohol intake. The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI. An ECG, which is a recording of the heart's electrical activity, may confirm an ST elevation MI (STEMI) if ST elevation is present. Commonly used blood test include troponin and creatine kinase MB.

Methods and Materials
The study was conducted in the Coronary care unit (department of medicine), Rajah Muthaiah Medical college Hospital, Annamalai University, Annamalai nagar, Tamilnadu, which is a 1260 bedded multi-speciality tertiary care teaching hospital located in the rural south India from the period of November 2016 to April 2017. The study was approved from the hospital authorities and human ethics committee.

Subject Recruitment Procedure
The recruitment of subjects was the patients having myocardial infraction. Patients who were prescribed any of the

thrombolytic agent, streptokinase were included in the study. A prescribed preform was prepared by the study team to collect and record the data.

Patients who met the inclusion criteria were assessed for their competence to provide informed consent and if found competent, the study was explained to them in their local language. Informed consent was taken prior to their inclusion into the study. Patient's identity is held in strict confidence and all measures are taken to protect the confidentiality of the patients.

Inclusion criteria

- Patients admitted in RMMCH with acute myocardial infraction.
- Acute myocardial infraction patients above 12 years admitted in CCU.

Exclusion criteria

- Patients who are not willing to participate.
- Outpatients.

Tools of data collection

- Data collection form.
- Door to needle time.

Study method

The consent was obtained after the explanation of complete study procedure to the patient and care takers. Then the patient medication record was collected after consulting with physician and the data collection form was filled in accordance with inclusion and exclusion criteria. The prescribing pattern of thrombolytic including adverse effects was collected. All the data was tabulated and analysed statistically.

Results and Discussion

A total number of 100 patients were enrolled in the study.

Table 1: Gender and age wise distribution of the study population

S. No.	Age (IN YEARS)	Male	Female	Percentage (%)
1.	31-40	8	2	10
2.	41-50	11	5	16
3.	51-60	14	11	25
4.	61-70	21	6	27
5.	71-80	12	2	14
6.	>80	6	2	8
7.	Total	72	28	100

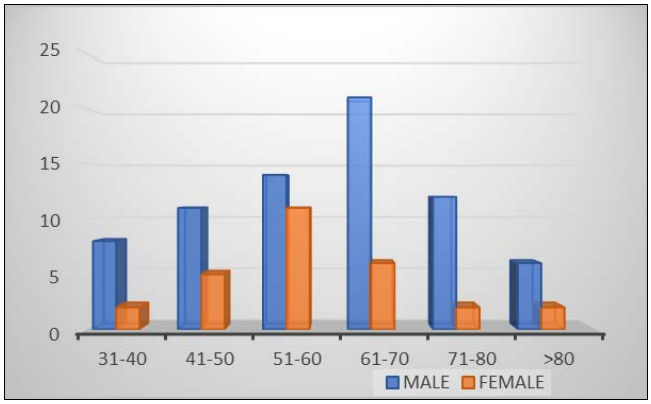


Fig 1

Table 2: Risk Factors

SL. No	Risk Factor	Number of Patients (n)	Percentage (%)
1.	DM	50	37.3%
2.	HTN	35	26.1%
3.	Smoking	10	7.4%
4.	Smoking+ Alcohol	32	23.8%
5.	Others (no risk factors)	7	5.22%

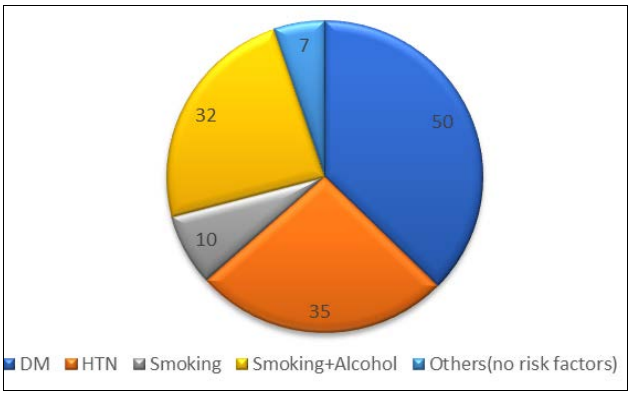


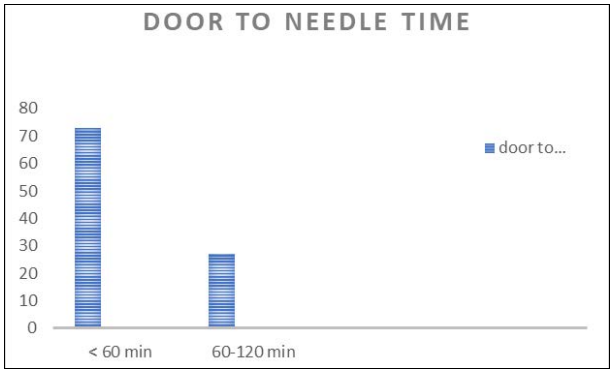
Fig 2

Diabetes Mellitus was predominant risk factor among disease in our study.

Smoking + Alcohol was predominant risk factor among life style habits in our study.

Table 3: Door to Needle Time

S.no	Door To Needle TimE (min)	Number Of Patients
1.	<60 min	73
2.	60-120 min	27



Average door to needle time=50 min.

Fig 3

Table 4: List of Thrombolytic Drugs Used In Myocardial Infraction

Sl. No	Drug Name	No. of Patients(n)
1.	Streptokinase	92
2.	Reteplase	4
3.	Alteplase	2
4.	Tenecteplase	2

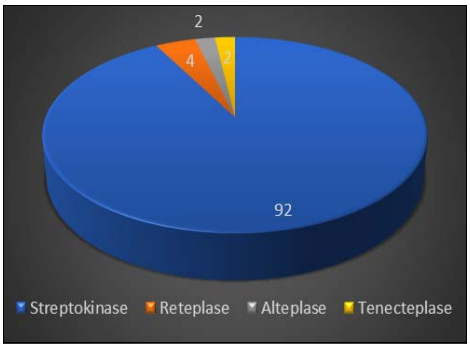


Fig 4

It is observed that majority of patients were treated with streptokinase (92), followed by Reteplase (4), Alteplase (2), Tenecteplase (2).

Table 5: Results of STK cycle

S.no	Result of the cases	No. of patients(n)
1.	No. of cases completed successfully	83
2.	No. of cases not completed	17

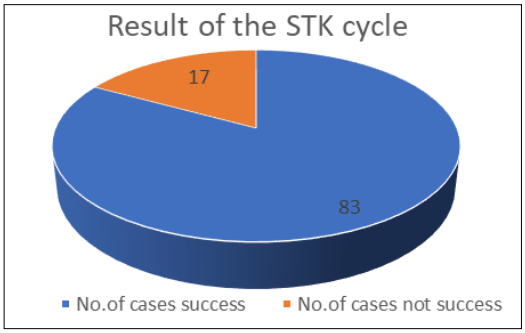


Fig 5

Discussion

This study is to document the drug utilization of thrombolytics in acute MI. The drug utilization of streptokinase, profile, time, dose, duration, side effects and their outcomes of therapy in a group of 100 MI patients in Coronary Care Unit (CCU) of RMMCH. This study aims at observing the prescribing patterns of thrombolytics in acute MI and assessing the prevalence in gender, patients with relevant family history, observing symptomatic improvements, to find out predominant risk factor in MI patients and assessing mean door to needle time.

Patient demographic characteristics

Overall 100 patients were enrolled during the study period. Of these 72 (72%) were male and 28 (28%) were female. It was observed that this disease is more prevalent in 61-70 years in male and 51-60 years in females.

Conclusion

- In Acute STEMI, the benefits of ST segment elevation resolved with thrombolytics and anti-platelets has become increasingly evident.
- Present study has shown that male patient was more commonly affected compared to female patients.
- HTN+ DM was observed as the most predominant risk factor that causes Acute STEMI.
- Mean door to needle time was observed as 50mins.
- 92 patients treated with Inj. Streptokinase 1.5 million
- Units, 4 patients treated with Inj. Reteplase 10units IV, 2 patients were treated with Inj.Alteplase 100mg IV, and 2 patients were treated with Inj. Tenecteplase 40 mg IV.
- Treatment complied with ACC/AHA Guidelines.

References

1. www.google.co.in.aspect of thrombolytic therapy;a review by md, ramjan. mohammed
2. www.thrombolysis, webmed,http;//wikipedia
3. www.google.co.in/url/myocardial infraction journals collection, page 1
4. Joseph Dipiro T. A pathophysiological approach of pharmacotherapy, seventh edition, Mc grawhill publications, 95-100.
5. Shah B, Mathur P. Surveillance of cardiovascular disease risk factors in India: the need and scope, Indian Journal of Medical Research. 2010; 132:634-42.
6. Christian RP, Rana DA, Malhotra SD, Patel VJ. Evaluation of rationality in prescribing, adherence to treatment guidelines and direct cost of treatment in intensive cardiac care unit: a prospective observational study, Indian Journal of Critical Care Medicine. 2014; 18(5):278-8.
7. Hilleman DE, Tsikouris JP, Seals AA, Marmur JD. Fibrinolytic agents for the management of ST-segment elevation myocardial infarction. Pharmacotherapy. 2007; 27:1558-1570.
8. Weaver WD. The role of thrombolytic drugs in the management of myocardial infarction. Comparative clinical trials. Eur Heart J 17 Suppl, 1996.