



Drug Utilisation & Prescription Pattern Analysis Study In Myocardial Infarction Patients At Tertiary Care Hospital In Krishna District, Andhra-Pradesh, India

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ABSTRACT

Myocardial infarction is common presentation of coronary artery disease. A retrospective study was conducted by pharmacy practice department, Nirmala college of pharmacy at Manipal hospital to identify the drug utilisation & prescription pattern among myocardial infarction patients. Majority of drugs were prescribed in brand names. Majority of drugs were prescribed from NLEM2015, main purpose of this study is to fulfil the academic curriculum of Doctor of pharmacy (Pharm D) course to develop the required therapeutic skills, Drug information & counselling of patients at Pharm D level.

Key words: Myocardial Infarction, Drug utilization pattern, anti-anginal drugs, antiplatelets, dyslipidemics, anticoagulants.

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Introduction

Myocardial infarction or acute myocardial infarction (AMI) is common presentation of coronary artery disease. It is commonly called as heart attack. According to WHO (World health organization) 12.2% of worldwide deaths were from ischemic heart disease. The most common symptom is chest pain or discomfort which may travel into the shoulder, arm, back, neck, or jaw. Often it is in the center or left side of the chest & lasts for more than few minutes, without prompt treatment, this can lead to damage to the affected part of the heart. The present study was undertaken to analyze drug utilization and prescription pattern analysis among myocardial infarction patients^[1].

More than 10 million cases per year in India are reported. Onset of symptoms in MI is usually gradual, over several minutes, and rarely instantaneous. Chest pain is the most common symptom of acute MI and is described as sensation of tightness, pressure, or squeezing. Radiating pain in upper abdomen may mimic heartburn. Levine's sign, in which a person localizes the chest pain by clenching their fists over their sternum, has classically been thought to be predictive of cardiac chest pain, although a prospective observational study showed it had poor positive predictive value.

Methodology

A retrospective study was conducted by pharmacy practice department of Nirmala college of pharmacy, Mangalagiri in association with Manipal hospitals to identify the drug utilisation & prescription pattern among myocardial infarction patients. A total of 20 prescriptions are collected and are evaluated for this study, under the supervision of physicians, over a period of 6 months. Main causes of myocardial infarction are age, hereditary, lifestyle, stress, obesity, diabetes, alcohol consumption, etc. Among these patients myocardial infarction was confirmed by performing certain tests like **Total Creatinine kinase**-rises within 3hours of chest pain & peaks within 24 hours after damage & death of cardiac tissue, **CK-MB isoenzyme**-peak elevation within 18-24 hours of chest pain, **Troponin levels**-raises within 3 hours of chest pain & remains elevated upto 3 weeks, **Myoglobin levels**-raises 1hour after cell death & peaks within 6 hours. **LDH LEVELS**[Lactate dehydrogenase level]-raises when myocardial infarction occurs.

ECG[Electrocardiogram]-during myocardial infarction ST-wave inversion, T-wave inversion, pathologic Q-wave occurs, Q-wave remains permanent whereas T & ST-wave returns to normal from hours-weeks. As one of the evidence based on information also suggested these tests as criteria for diagnosis of acute myocardial infarction^{[4][5]}. Along with medication other methods followed for treatment of MI are **percutaneous coronary intervention** and **CABG**(Coronary artery bypass grafting).

Table:1 .AGE WISE DISTRIBUTION OF MYOCARDIAL INFARCTION CASES IN TERTIARY CARE HOSPITAL OF KRISHNA DISTRICT,INDIA

AGE(YEARS)	NO.OF PATIENTS	PERCENTAGE
0-25	0	0
26-50	8	40
51-75	12	60

GRAPH:01 Graphical representation of the MI patients as per age

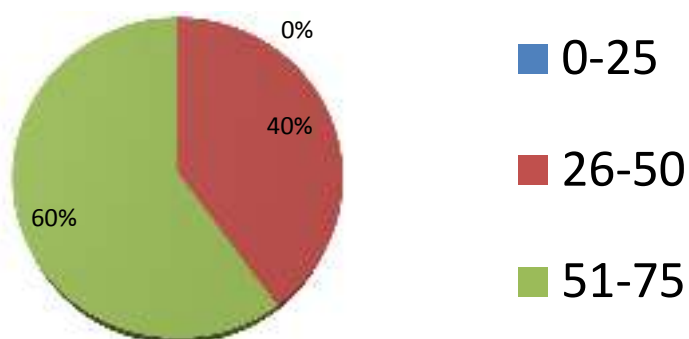
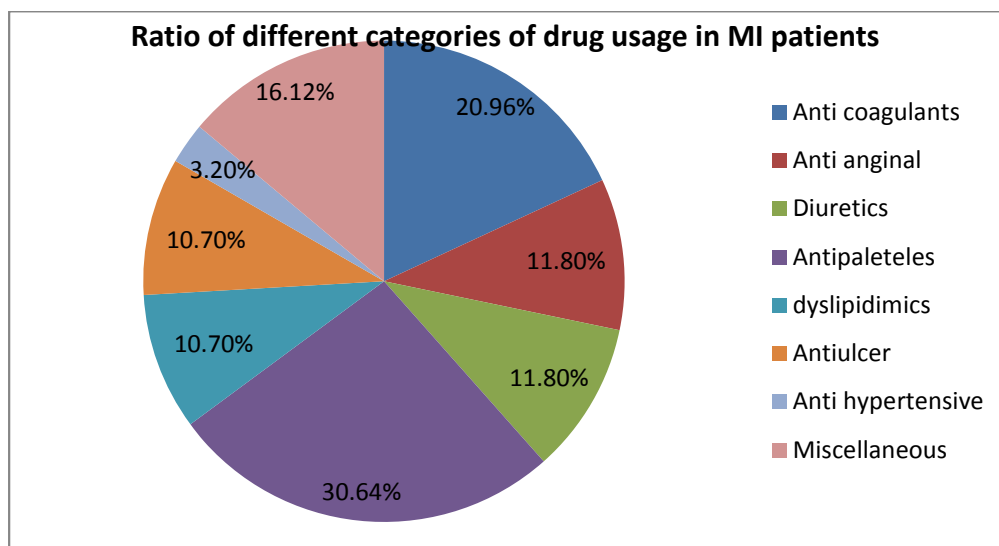


Table:2: DIFFERENT CATEGORIES OF DRUGS PRESCRIBED IN MI PATIENTS.

CATEGORY	TRADE	GENERIC	DOSE
Anti-coagulants	Inj.heparin	Heparin	40mg
	inj.clexane	Enoxaparin	5000U
	T.Acitrom	Nicoumalone	1mg
Dyslipidemics	T.Atorva	Atorvastatin	40mg
	T.Atocor ,storvas	Atorvastatin	20mg
	T.Rosuvas	Rosuvastatin	40mg
Anti-platelet	T.Ecosprin	Aspirin	150mg
	T.Clopilet	Clopidogrel	75mg
	T.Plavix	Clopidogrel	75mg
Anti-anginals	T.Nicorandil	Nicorandil	5mg
	T.Nitrocontin	Glyceryl trinitrate	2.6mg
	T.MetXL	Metoprolol	25mg
	T.Stamlo beta	atenolol	50mg
	T.Sorbitrate	Isosorbide dinitrate	5mg
	T.Cytogardod	Trimetazidine	60mg
	T.Cardivas	Carvidilol	2.5mg
	T.supramet-XL	Metaprolol	25mg
Anti-hypertensives	T.Telma	Telmisartan	20mg
	Inj.Cardace	Ramipril	1.28mg
	Inj.Nilzem	Diltiazem	5mg
Anti-ulcer	T.Rantac	Ranitidine	150mg

	Inj.pantocid,pantop T.Esmo	Pantoprazole Esmoprazole	40mg 10mg
Diuretics	Inj.Lasix Inj.dytor	Furosemide torsemise	40mg 5mg
Miscellaneous	Inj.tramadol Dulcolax suppo T.Ultracet Syp.ascoril Inj.zofer Inj.hydrocort Inj.avil T.Restyl	Tramadol bisacodyl Tramadol+Acetaminophen Bromhexine,Guaifenesin, Menthol, and Terbutaline Ondensetron Hydrocortisone Pheniramine maleate Alprazolam	50mg 1unit 1tab 1tab 15ml 4mg 3U 1amp 60mg

Graph:02: Graphical representation of the different categories of drugs in MI Patients



Result :

Table:1 no cases were enrolled with in the age group of 0-25 years, 26-50 years age 40% cases has been enrolled in the tertiary care hospital, 60% of the MI cases are enrolled at age group of 51-75 and above. **Table 2** illustrates different categories of drugs which have been used for treatment of myocardial infarction. Among which Anti-platelets have been prescribed in most of the patients, followed by Anti-coagulants, Anti-anginals, Diuretics, dyslipidemics, Antiulcer drugs, Anti-hypertensives and miscellaneous drugs.

Discussion:

Myocardial infarction is most common disorder identified in the deaths of Krishna district zone people, people with the age group 0-25 years are found to be in healthy condition, but due to change in the lifestyle with more stress conditions from the age of 26-50, 40% of the cases has been enrolled and from 51 years onwards 60% of the cases were found. Myocardial infarction occurred mostly in patients of age **51-75** yrs in the Krishna district zone of Andhra pradesh, while **males** are more prone to myocardial infarction than females. Most common categories of drugs prescribed in MI patients are **Anti-platelets, Anticoagulants, Antianginal ,Dyslipidimics**. Most common side effects caused upon over usage of Thrombolytics are cerebral, pulmonary oedema, arrhythmias and ischemia. For Anticoagulants : haemorrhage, thrombocytopenia. Most of the drugs were prescribed by their respective brand names. Proper diet & regular exercise should be maintained in order to minimise the dose of drugs and to decrease the side effects caused by the drugs.

Conclusion:

The present study revealed that myocardial infarction was more prevalent in **males** in the age group of **51-75 years**. Upon analysis of prescription pattern among MI patients Anti-platelet category of drugs were found to be more followed by anti-coagulants, Anti-anginals, Diuretics and Dyslipidemic agents .All the drugs prescribed were effective in therapy , but usage of optimal dose will reduce the side effect caused by the treated drugs. Main purpose

of this study is to fulfil the academic curriculum of Doctor of pharmacy [PharmD] course & to develop the required therapeutic skills, drug information & counselling of patients.

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