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Original Research

Evaluate the prescription pattern of drugs used in myocardial infarction

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ABSTRACT:

Aim: The aim of the present study was to determine the prescription pattern of drugs used in myocardial infarction. **Methods:** This was a Retrospective observational and analytical study was done in the Department of Medicine. Total 100 patients were included in this study. The data from the case records of all patients admitted to hospital with a diagnosis of AMI during study period. **Results:** Total 80 patients case paper were analysed during two year study period. Results pointed out that the frequency of myocardial infarction was more in male patients (62.5%) than female patients (37.5%). As far as age factor is concerned 43.75% patients belong to age group 50-60 yrs and 37.5% patients belong to 60-70 yrs. In our study, average hospital stay was found 6.74 days. Average ICU stay was 1.78 days and that of medicine ward was 4.3 days. The percentage of prescription pattern of various classes of drugs was for Antiplatelet Agents (90%), Antianginal drugs (68.75%), Hypolipidemics (62.5%), Beta receptor antagonist (37.5%) , Angiotensin Converting Enzyme Inhibitors (ACEI) 33.75%) , Diuretics (26.5%) , Anticoagulants (16.25%), Calcium Channel Blockers (CCBs) (16.25%), Angiotensin Receptor Blockers (ARBs) (12.5%), NSAID's (6.25%) and Bronchodilators (1.25%) drugs respectively. Most of the patients received Aspirin as well as Clopidogrel. **Conclusion:** Antiplatelet drugs were the most commonly prescribed and alpha blockers were prescribed least as evident from our study.

Keywords: Myocardial Infarction, Prescription Pattern, Retrospective Study, Tertiary Care Hospital

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INTRODUCTION

Acute myocardial infarction (MI) is a major cause of morbidity and mortality among all the socioeconomic strata of Indian population.[1] The guidelines for the treatment of acute myocardial infarction attempts to define practices that meet the needs of most people in most circumstances. The guidelines serve as a bridge to convert the science of evidence based medicine into clinical practice. However, the uptake of these guidelines has not been uniform. Studies from various parts of the world report that there is still a noteworthy underuse of reperfusion in acute myocardial infarction, as well as a deficit in the prescription of statins, antiplatelet drugs, angiotensin converting enzyme (ACE) inhibitors.[2] or beta blockers.[3] Gender based differences have been reported with underutilisation of drugs in females.[4] Also, studies have shown a lack of adherence to therapeutic guidelines in the treatment of elderly patients.[5] The most common symptoms of MI are chest pain or discomfort which may travel into the shoulder, arm back, neck or jaw. Often it is in the centre or left side of the chest and last for more than few minute without prompt treatment this can lead to damage to the affected part of heart.[6] Lipid lowering agent, calcium channel blocker, ACE inhibitor, diuretic, anti angina drug, anti platelets agent, proton pump inhibitor, etc. are the number of drug to obtain the best possible effect in the shortest period and at a reasonable cost.[7] The initial management plan for patient with acute MI has restoration of the balance between oxygen supply and demand to prevent further ischemia. Management of myocardial infarction should be based on sound evidence, derived from well-conducted clinical trials whenever possible, or motivetd expert opinion when needed. It must be recognized that, even when excellent clinical trials have been undertaken, the results are open to interpretation and treatments may need to be adapted take account of clinical circumstances and resources.[8]

After an attack of acute myocardial infarction only 10-20% cases do not develop major complication and recover, remainder 80-90% cases develop one or more major complication some of which are fetal.[5]

MATERIAL AND METHODS

This was a Retrospective observational and analytical study was done in the Department of Medicine, after taking the approval of the protocol review committee and institutional ethics committee. After taking informed consent detailed history was taken from the patient. Total 100 patients were included in this study. The data from the case records of all patients admitted to hospital with a diagnosis of AMI during study period was obtained from the medical records department, anugrah narayan magadh medical college and hospital, gaya, bihar, India. All the data was recorded in a preformatted proforma and analysed. Data were interpreted in terms of percentage.

RESULTS

The present study was conducted to find out prescribing pattern of drugs used in cardiovascular emergencies in tertiary care hospital. Total 80 patients case paper were analysed during two year study period. Results pointed out that the frequency of myocardial infarction was more in male patients (62.5%) than female patients (37.5%). As far as age factor is concerned 43.75% patients belong to age group 50-60 yrs and 37.5% patients belong to 60-70 yrs. In our study, average hospital stay was found 6.74 days. Average ICU stay was 1.78 days and that of medicine ward was 4.3 days. (table.1)

Table 1.Demogrphic Profile of Patients

Gender	No. of patients	Percentage
Male	50	62.5
Female	30	37.5
Age in years		
Below 40	5	6.25
40-50	10	12.5
50-60	35	43.75
60-70	30	37.5

The percentage of prescription pattern of various classes of drugs was for Antiplatelet Agents (90%), Antianginal drugs (68.75%), Hypolipidemics (62.5%), Beta receptor antagonist (37.5%) , Angiotensin Converting Enzyme Inhibitors (ACEI) 33.75%) , Diuretics (26.5%) , Anticoagulants (16.25%), Calcium Channel Blockers (CCBs) (16.25%), Angiotensin Receptor Blockers (ARBs) (12.5%), NSAID's (6.25%) and Bronchodilators (1.25%) drugs respectively. Most of the patients received Aspirin as well as Clopidogrel.

Table 2: Prescription pattern of drugs used in myocardial infarction

Drug Group	Frequency	Percent (%)
Anti-platelets	72	90
Anti-anginals	55	68.75
Hypo-lipidaemics	50	62.5
H2-Blockers	34	42.5
Antianxiety	32	40
Laxatives	30	37.5
Beta blockers	30	37.5
ACE Inhibitors	27	33.75
Antidiabetic drugs	23	28.75
Diuretics	21	26.25
Opioids	19	23.75
Anticoagulants	13	16.25
Antibiotics	13	16.25
Antiemetics	13	16.25
CCB's	13	16.25
ART's	10	12.5
Thrombolytics	8	10
Inotropic drugs	6	7.5
NSAID's	5	6.25
Antipsychotic	2	2.5
PPI's	2	2.5
Anti-epileptics	2	2.5
Bronchodilators	1	1.25

Alpha blockers	1	1.25
Others	1	1.25

DISCUSSION

Acute Myocardial Infarction is a most common cardiovascular emergency seen in medical emergency ward and it has become the leading cause of death due to cardiovascular disease in India. To examine the use of drugs in a trend of drug utilization and prescription pattern studies has been increased worldwide in different health sectors. Such types of studies are helpful to establish the pattern of prescription and to decide the priorities to avoid the irrational drug use. During past few years numerous research studies have been conducted worldwide to determine the safe and effective drug utilization indicating that inappropriate drug use is a universal phenomenon.[9] To examine the use of drugs in a society, trend of drug utilization studies has been raised globally in different health setups. Such types of drug utilization studies are helpful to determine the pattern of prescription and for setting the priorities to avoid the irrational drug use.[10] The present study was conducted to find out prescribing pattern of drugs used in cardiovascular emergencies in tertiary care hospital of bihar,india. Total 80 patients case paper were analysed during one year study period. Results pointed out that the frequency of myocardial infarction was more in male patients (62.5%) than female patients (37.5%), which is in accordance with the study conducted by Weidner G, Jousilahti P and Chrysohoou C.[11-13] In the age group 30-50 years, the number of female patients was found significantly less as compare to the number of female patients in the age group 50-70 yrs. The reason for increased incidence of myocardial infarction in female could be the loss of cardio protective effect of estrogen after menopause. Also there was no significant difference between number of male (22%) and female (17%) patients in the age group 60-70 yrs.[14] As far as age factor is concerned 43.75% patients belong to age group 50-60 yrs and 37.5% patients belong to 60-70 yrs. This shows that CHD manifests 10 years earlier on an average in Indian subcontinent compared with the rest of the world.[15] Study conducted by Karthikeyan G, average stay in cardiovascular disease patient was found to be 7 days. [16] In our study, average hospital stay was found 6.74 days. Average ICU stay was 1.78 days and that of medicine ward was 4.3 days.

In our study the percentage of prescription pattern of various classes of drugs was for Antiplatelet Agents (90%), Antianginal drugs (68.75%), Hypolipidemics (62.5%), Beta receptor antagonist (37.5%) , Angiotensin Converting Enzyme Inhibitors (ACEI) 33.75%) , Diuretics (26.5%) , Anticoagulants (16.25%), Calcium Channel Blockers (CCBs) (16.25%), Angiotensin Receptor Blockers (ARBs) (12.5%), NSAID's (6.25%) and Bronchodilators (1.25%) drugs respectively. Most of the patients received Aspirin as well as Clopidogrel.

The association of physicians of India recommends that all patients with AMI including those with ST-elevation myocardial elevation (STEMI) should receive combination of antiplatelet therapy. The use of fibrinolytics in our study is much lower than compared to those reported found in the registry of Clinical Trial of Reviparin and Metabolic Modulation in Acute Myocardial Infarction Treatment Evaluation (CREATE), where the use of fibrinolytics in tertiary care hospital was found to be 60%. In the study conducted by Cohen M et al., the use of reperfusion therapy among 2741 patients (STEMI) from various geographic regions ranged from 34.5% to 53.8%.[17] Similarly in the study conducted by Schiele et al., the use of Fibrinolytics, Aspirin / Clopidogrel combination, Beta receptor blockers, ACE inhibitors and statins was 33, 33, 91, 39,45 and 62% respectively. The year wise prescription rate of various classes of drugs on admission shows a steady increase in the prescription rate of antiplatelet agents, ACEI / ARBs and hypolipidemics. A decrease in the prescription of fibrinolytic is seen which can be partly explained by the presence of contraindications to the same. The prescription pattern of beta receptor blockers was lower and this might be due to a higher incidence of left ventricular dysfunction / cardiogenic shock

In our study the percentage of prescription pattern of various classes of drugs was for Antiplatelet Agents (90**%)**, Antianginal drugs (68.75%). This finding correlates with the standard guidelines mentioned for use of drug in cardiovascular emergencies. These results were found to be similar to various studies conducted by Ian A. Scott et al, Venu menon et al, F venturini et al.[18-20] Further in our study, utilization rate of ACE inhibitors and ARBs was found to be much more than that of calcium channel blockers. This finding coincides with the study conducted by M. Martinez et al, Kizer JR et al and Escosteguy CC et al.[21-23] According to Friedman B.M. Recent data from the mega trial support the early use of ACE inhibitors after acute MI. In this mega trial the use of ACE inhibitors was associated with substantial reduction in mortality in MI patients.[24]

CONCLUSION

Antiplatelet drugs was the most commonly prescribed and alpha blockers were prescribed least as evident from our study

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