

## A retrospective study on prescription pattern of drugs used in myocardial infarction in a South Indian Tertiary Care Hospital

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### Abstract

**Introduction:** Angina pectoris, the primary symptom of ischemic heart disease, is caused by transient episodes of myocardial ischemia that are due to imbalance in the myocardial oxygen supply-demand relationship. Various drugs are prescribed which keeps changing during every decade. This study tries to know the current trends in prescription in myocardial infarction.

**Material and Methods:** About 108 patients' data were collected during the period year 2004-2008 admitted with acute myocardial infarction and data were entered in preformed proforma and were analysed by calculating percentage.

**Statistical Analysis:** Data were interpreted in terms of percentage.

**Results:** The percentage of prescription pattern of various classes of drugs was 91, 66.7, 63.9, 35.2, 31.5, 25, 15.7, 13.9, 12.9, 9.3 and 7.4 for Antiplatelet Agents, Antianginal drugs, Hypolipidemics, Beta receptor antagonist, Angiotensin Converting Enzyme Inhibitors (ACEI), Diuretics, Anticoagulants, Calcium Channel Blockers (CCBs), Angiotensin Receptor Blockers (ARBs), Fibrinolytics and Inotropic drugs respectively. Most of the patients received Aspirin as well as Clopidogrel.

**Conclusion:** Antiplatelet drugs was 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.

### Introduction

Myocardial infarction (MI) is defined from a number of different perspectives related to clinical, electrocardiographic, biochemical and pathological characteristics related to death of myocardium due to lack of blood supply. The term MI also has social and psychological implications, both as an indicator of a major health problem and as a measure of disease prevalence in population statistics and outcome of clinical trials. It is accepted that the term MI reflects a death of cardiac myocytes (necrosis) caused by prolonged ischemia.<sup>1</sup>

Acute myocardial infarction (AMI) is a major health problem of the public in the industrialised world, despite the impressive strides in the diagnosis and management over the past three decades. Though the death rate due to acute MI has declined by 30% during the last decade, but it is still a fatal event in approximately one third of the patients.<sup>2</sup> Although the rate from acute myocardial infarction has declined by approximately 30% over the last decade, it's development is still a fatal event in approximately one-third of the patients.<sup>2</sup>

Different strategies were recommended for patients with AMI based on certain guidelines to reduce mortality and applied in practice routinely. But strict application of the same would bring better outcome in clinical practice. But it was observed adhering to these guidelines are in suboptimal in clinical setting due to variation in temporal and geographical variations. Many of the drugs (E.g. statins, antiplatelet drugs, ACE inhibitors etc.) that could save the life are still being

deficit in the prescriptions.<sup>3</sup> Underutilization of drugs is seen more seen females showing gender difference for drug usage and exact cause for this difference is not still known.<sup>4-6</sup>

Among many factors that have been shown to be important are hyper lipidaemia, hypertension, cigarette smoking, male sex and diabetes mellitus. These have in general been associated with an increase incidence of fibrous plaques and their sequelae. The associations are relatively strong when they are made on a group comparison basis, although all of the studies have demonstrated a high degree of variability among individuals within even the most homogenous of groups.<sup>7,8</sup>

Hence this study was carried out to determine the prescribing rate of drugs in patients with acute myocardial infarction and its relation to age and gender.

### Material and Methods

**Permission:** Institutional Ethics Committee approval was obtained from Fr. Muller Medical College Ethics Committee.

**Study design:** Retrospective observational and analytical study.

**Study duration:** Five years – Retrospective.

**Source of data:** Medical records department, Father Muller Hospital, Mangalore.

**Sample size:** 108 patients.

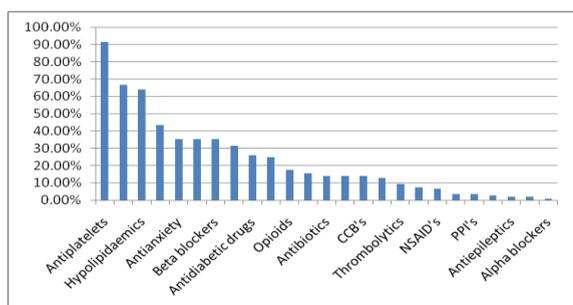
**Method of collection of data:** The data from the case records of all patients admitted to hospital with a diagnosis of AMI during the year 2004-2008 (5years)

was obtained from the medical records department, Father Muller Hospital, Mangalore, Karnataka, India. All the data was recorded in a preformatted proforma and analysed. Data were interpreted in terms of percentage.

## Results

**Table 1: Prescription pattern of drugs used in myocardial infarction**

Drug Group	Frequency	Percent (%)
Anti-platelets	99	91.7
Anti-anginals	73	66.7
Hypo-lipidaemics	69	63.9
H2-Blockers	47	43.5
Antianxiety	38	35.2
Laxatives	38	35.2
Beta blockers	38	35.2
ACE Inhibitors	34	31.5
Antidiabetic drugs	29	25.9
Diuretics	27	25.0
Opioids	19	17.6
Anticoagulants	17	15.7
Antibiotics	15	13.9
Antiemetics	15	13.9
CCB's	15	13.9
ART's	14	12.9
Thrombolytics	10	9.3
Inotropic drugs	11	7.4
NSAID's	7	6.5
Antipsychotic	4	3.7
PPI's	4	3.7
Anti-epileptics	2	1.8
Bronchodilators	2	1.8
Alpha blockers	1	0.9
Others	1	0.9



**Fig. 1: Prescription pattern of drugs used in Acute Myocardial Infarction (AMI)**

## Discussion

The percentage of prescription pattern of various classes of drugs was 91.7, 66.7, 63.9, 35.2, 31.5, 25, 15.7, 13.9, 12.9, 9.3 and 7.4 for Antiplatelet Agents, Antianginal drugs, Hypolipidaemics, Beta receptor blockers, Angiotensin Converting Enzyme Inhibitors (ACEI), Diuretics, Anticoagulants, Calcium Channel Blockers (CCBs), Angiotensin Receptor Blockers

(ARBs), Thrombolytic and Inotropic 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 59.1%. 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%.<sup>9</sup> 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.

## Conclusion

The trends in prescribing medication in case of myocardial infarction and the strategies towards its approach has been changes over past few years and it will show further changes in next decade as indicated by the results of this study.

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**Conflict of interest:** None declared.

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