Original Article

Evaluation of Drug Utilization Pattern in Patient of Myocardial Infarction & Prevalence of the MI by Comparison of Age, Sex, Diet, Smokers & Non-smokers, Alcoholic & Non-alcoholic

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A B S T R A C T

Objective: To assess drug utilization pattern in patient on Myocardial infarction therapy and prevalence of the MI according to the comparison of age, gender, diet, smokers & non-smokers, alcoholic & non-alcoholic people to aware the people to prevent the complications of MI. This study was carried in Ganesh Shankar Vidyarthi medical collage Kanpur.

Method: This study was a simple randomised prospective survey study. This prospective study was carried out for a period of one month in Ganesh Shankar Vidyarthi medical collage Kanpur. It was prospective drug utilization study and prevalent of the MI according to the comparison of age, gender, diet, smokers & non-smokers, alcoholic & non-alcoholic.

Result: In this study, it was found that the age above 50 years, male gender, non-vegetarians, alcoholic & smokers have more prevalence towards the MI. Most of the patient required more than one antihypertensive drug & combination therapy preferred mode of therapy. Antiplatelets were frequently prescribed drugs fallowed by Antianginal etc. In this study it was also observed that diabetes and hypertension are most common concomitant diseases during the therapy of MI.

Conclusion: In conclusion, the result of this study demonstrate the need for health education and to aware the people about the complications of myocardial infarction. This can promote rational use of medications.

Keywords: Drug utilization pattern, Myocardial infarction, Prevalence of myocardial infarction.

INTRODUCTION

Since the early 1900s, cardiovascular disease (CVD) has been the leading cause of death in the United States and in India also[1]. A changing lifestyle in developing countries in India has enormously increased the statistical figures of diseases like hypertension (HTN), MI, and angina[2]. Acute coronary syndromes (ACSs), including unstable angina and myocardial infarction (MI), are forms of coronary heart disease (CHD) that constitute the most common cause of CVD death[1]. The term myocardial infarction indicates the development of area of myocardial necrosis caused by local ischemia. Acute MI, also known as "heart attack," is the single most common cause of death in industrialized nations. In the United States, an estimated 1.5 million people per year suffering an MI, with roughly 500,000 fatalities. Immediately after an acute coronary occlusion, blood flow ceases in the coronary vessels beyond the occlusion except for small amounts of collateral flow from surrounding vessels. The area of the muscle that has either zero flow or so little flow that it cannot sustain cardiac muscle function is said to be infracted. The overall process is called a *Myocardial infarction*[3]. Following an attack of acute MI, only 10-20% cases do not develop major complications and recover. The reminder 80-90% cases develop one or more major complications, some of which are fetal. The immediate mortality from acute MI (sudden cardiac death) is about 25%. The important complications which may develop acute MI are Arrhythmias, congestive heart failure (CHF), cardiogenic shock, mural thrombosis & thromboembolism, rupture, cardiac aneurysm, pericarditis & postmyocardial infarction syndrome[4].

STUDY DESIGN METHODOLOGY

Study design
- It was a prospective drug utilization study.
- All the observation was recorded in Drug utilization form.

Study site
The study was carried out in GSV medical college Kanpur.

Study population
About 45 patients using drugs in MI were included.

Inclusion criteria
- All patients using drug in MI visiting IPD.
- Patients of either sex will be included.
- Patients treated with drug in MI.
- All the patients already receiving drugs of MI before the study.

Duration of study
The study was carried out for the period of one month.

Source of data
- Physicians prescribing records.
- Patient's medication profile.

Study material used
- Drug utilization monitoring form.
- Questionnaire.
- Informed consent.

Data collection
- Patient's demographics (age, sex, dietary habits etc)
- Patients were interviewed after obtaining informed consent. Interviews were conducted by using structured questionnaire (open question method).

Limitations

The limitations of the present study are the small sample size and short duration of time.

OBSERVATION & RESULTS

Distribution characteristics among study population

Total 45 patients including male and female were surveyed in one month of duration.

Gender wise distribution of total patient

During the study period, a total of 45 myocardial infarction patients visited. Among the 45 patients 30 (66.66%) were males and 15 (33.34%) were females indicating that heart attack is slightly more prevalent in the male gender. It has been established that the incidence of cardiovascular disease (CVD) and the attendant morbidity and mortality are much lower in premenopausal women compared with men of the same age[7] as shown in **Table 1 & Figure 1.**

Age distribution of total patient

Among the 45 patients 6 (13.33%) were under the age group of 41-50 and 15 (20%) were under the age group of 51-60 and 30 (66.67%) were under the age group of 61-80 indicating that heart attack is more prevalent in the age of 61-70 **(Table 2 & Figure 2.)**

Diet characteristics of total MI patients

Among the 45 patients it was found that 12 (26.67%) of the patient were vegetarians and 33 (73.33%) of the patients were non-vegetarians indicating that heart attack is more prevalent in the non-vegetarians people **(Table 3 & Figure 3.)**

Alcoholic and non-alcoholic patients

Among the 45 patients it was found that 28 (62.22%) patients were alcoholic and 17 (37.78%). Patients were non-alcoholic indicating that heart attack is more prevalent in the alcoholic people **(Table 4 & Figure 4.)**

Smoker and non-smoker patients

Among the 45 patients it was found that 27 (60%) patients were smokers and 18 (40%). Patients were non-smokers indicating majority of patients were smokers **(Table 5 & Figure 5.)**

Type of drugs prescribed in MI

During the study of 45 patients it was observed that Antiplatelets 43 (95.5%), Antianginal 40 (88.8%), ACE inhibitors followed by 28 (62.2%), Beta blockers 25 (55.5%), Proton pump Inhibitors **(Table 6 & Figure 6.)**

Drug prescribed as mono-therapy & combination therapy

Among the 45 patients prescription mono-therapy was prescribed 18 (40%) & combination therapy was prescribed 27 (60%) indicating majority of combination therapy **(Table 7 & Figure 7.)**

RESULT

In this study, it was found that the age above 50 years, male gender, non-vegetarians, alcoholic & smokers have more prevalence towards the MI. The risk of disease becomes the same in both sexes after 80 years of age. It has been established that the incidence of cardiovascular disease (CVD) and the attendant morbidity and mortality are much lower in premenopausal women compared with men of the same age. Most of the patient required more than one antihypertensive drug & combination therapy preferred mode of therapy. Antiplatelets were frequently prescribed drugs fallowed by Antianginal etc. In this study it was also observed that diabetes and hypertension are most common

concomitant diseases during the therapy of MI.

DISCUSSION

A total 45 patients were surveyed in one month to assess drug utilization pattern in patient on Myocardial infarction therapy and prevalence of the MI according to the comparison of age, gender, diet, smokers & non-smokers, alcoholic & non-alcoholic people to aware the people to prevent the complications of MI.

During the study period, among the 45 patients 30 (66.66%) were males and 15 (33.34%) were females indicating that heart attack is slightly more prevalent in the male gender **(Table 1)**. Among the 45 patients 6 (13.33%) were under the age group of 41-50 and 15 (20%) were under the age group of 51-60 and 30 (66.67%) were under the age group of 61-70 indicating that heart attack is more prevalent in the age of 61-70 **(Table 2)**. Among the 45 patients it was found that 12 (26.67%) of the patient were vegetarians and 33 (73.33%) of the patients were non-vegetarians indicating that heart attack is more prevalent in the non-vegetarians people **(Table 3)**. In this study it was found that 28 (62.22%) patients were alcoholic and 17 (37.78%) patients were non-alcoholic indicating that heart attack is more prevalent in the alcoholic people **(Table 4)**. Among the 45 patients it was found that 27 (60%) patients were smokers and 18(40%) patients

were non-smokers indicating majority of patients were smokers **(Table 5).** During the study, it was observed that Antiplatelets 43 (95.5%), Antianginal 40 (88.8%), ACE inhibitors followed by 28 (62.2%), Beta blockers 25 (55.5%), Proton pump Inhibitors **(Table 6).** In the prescription mono- therapy was prescribed 18 (40%) & combination therapy was prescribed 27 (60%) indicating majority of combination therapy **(Table 7)**.

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Table 1. Gender wise distribution of total patients of MI

Gender	No. of patients	Percentage of patients
Male	30	66.66%
Female	15	33.34%
Total	45	100%

Table 2. Age distribution of the total patients (n=45)

Age	No. of patients	Percentage of patients
41-50	30	13.34%
51-60	15	20%
61-70	45	66.66%

Table 3. Diet characteristics of total MI patients

Diet	No. of patients	Percentage of patients
Vegetarians	12	26.67
Non-vegetarians	33	73.33
Total	45	100

Table 4. Alcoholic and non-alcoholic patients

Type	No. of patients	Percentage of patients
Alcoholic	28	62.22
Non-alcoholic	17	37.78
Total	45	100

Table 5. Smokers and non-smokers patients

Type	No. of patients	Percentage of patients
Smokers	27	60%
Non- smokers	18	40%
Total	45	100%

Table 6. Type of drugs prescribed in MI

Class	Drug	Frequency of prescribing	% Prescribing
Anti -platelets	Aspirin, Clopidogorel	43	95.5
Anti-anginal	Nitro-glycerine, Isosorbitate	40	88.
ACE-inhibitors	Captopril / Enalapril	28	62.2
Beta-blockers	Atenolol / Metoprolol	25	55.5
Proton pump inhibitors	Omeprazol, Rabiprazole	27	60

Table 7. Drug prescribed as mono-therapy & combination therapy

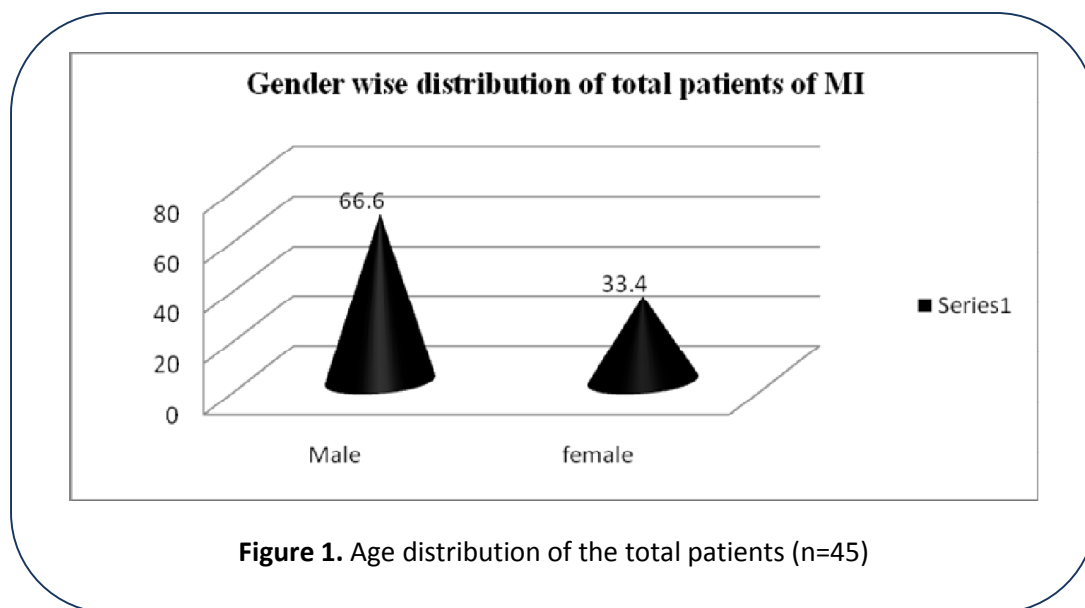| Drug prescribed	No. of prescription	% of prescription
Mono therapy	18	40%
Combination therapy	27	60%
total	45	100%

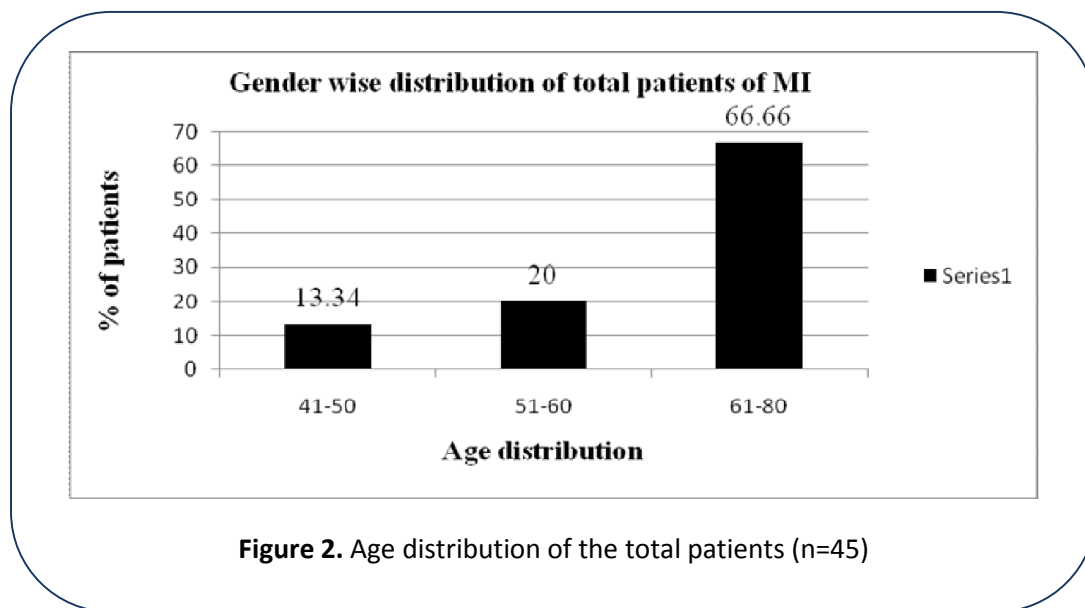**Figure 1.** Age distribution of the total patients (n=45)

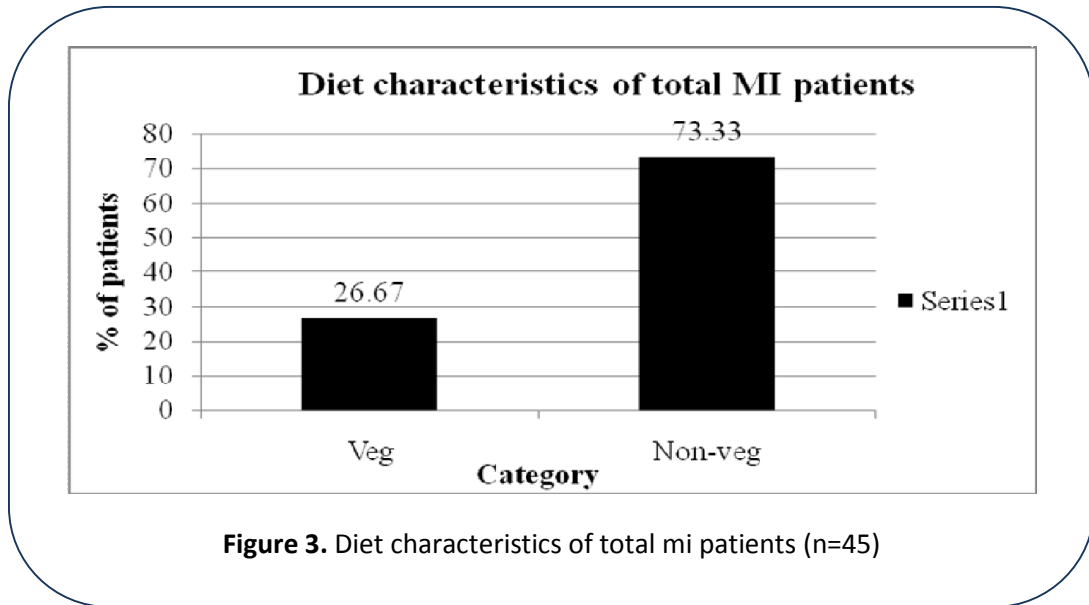**Figure 2.** Age distribution of the total patients (n=45)
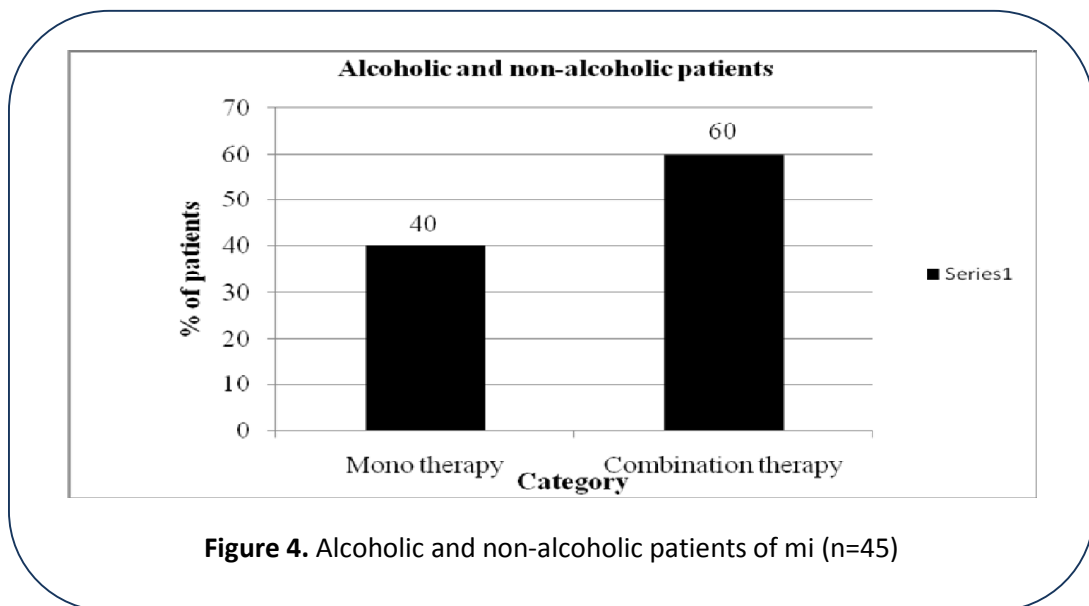
Figure 3. Diet characteristics of total mi patients (n=45)

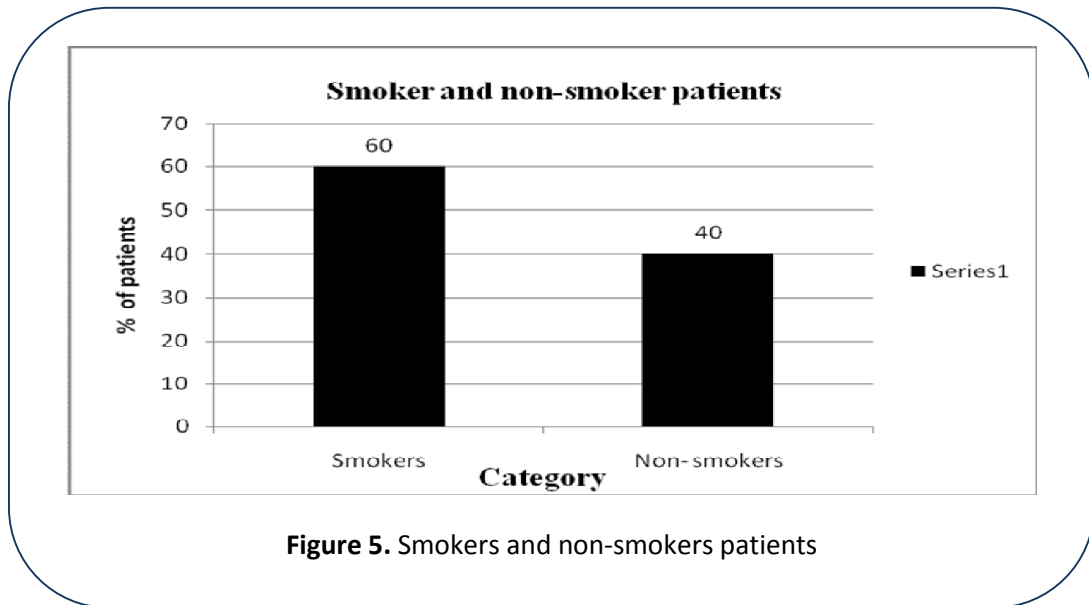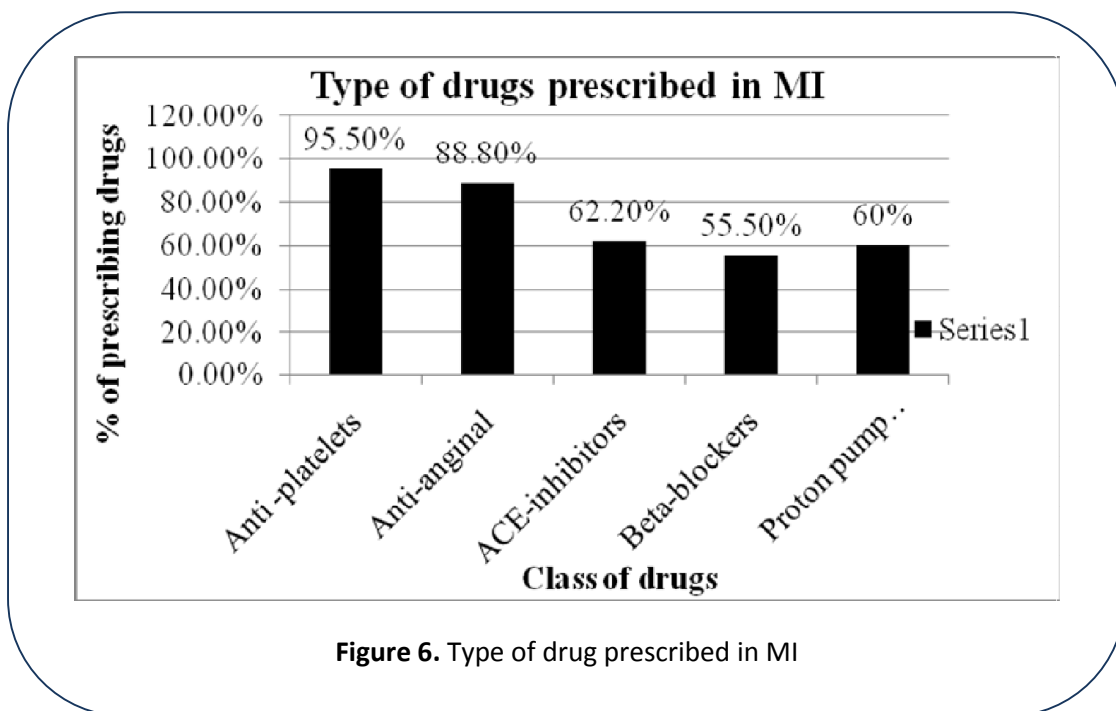**Figure 4.** Alcoholic and non-alcoholic patients of mi (n=45)

Figure 5. Smokers and non-smokers patients

Figure 6. Type of drug prescribed in MI

Drug prescribed as mono-therapy &combination therapy

Mono therapy
40%

Combination
therapy
60%

Figure 7. Drug prescribed as mono & combination therapy