

DRUG UTILIZATION STUDY IN ISCHEMIC HEART DISEASES ASSOCIATED WITH DIABETES AND HYPERTENSION**TASNEEM SANDOZI * AND ¹ FOUZIA NAUSHEEN ²**¹ Department of Pharmacology, Deccan College of Medical Sciences, Hyderabad² Department of Pharmacology, Deccan College of Medical Sciences, Hyderabad**Corresponding Author* tasneemsandozi@yahoo.com**ABSTRACT**

Aim: To evaluate drug utilization in acute coronary syndromes associated with diabetes and hypertension in Princess Esra, a tertiary hospital in Hyderabad, India. It was a retrospective study done for a period of three months during which treatment of 140 patients was studied. It was seen in this study that the incidence of polypharmacy was high. Trade names were used more frequently compared to generic names. If only generic names are used we can decrease the financial burden of the patient. The value of longterm use of clopidogrel along with aspirin was substantial, making this drug a valuable addition to the effective medication for secondary prevention of high risk patients.

KEYWORDS

Antianginal drugs, Antiplatelet drugs, Ischaemic heart disease, Hypertensive diabetics

INTRODUCTION

Diabetes mellitus (DM) is closely associated with ischaemic heart disease (IHD). Furthermore, patients with DM and no previous history of IHD have the same risk for cardiac events as patients with a previous myocardial infarction (MI).¹ A changing lifestyle in developing countries in India has enormously increased the statistical figures of diseases like hypertension (HTN), MI, and angina.¹ It is important that members of the medical profession play a significant role in the critical evaluation of use of drug therapies in management and prevention of diseased states. Vigorous and expert analysis of available data that document relative benefits and risks of those

therapies can produce helpful guidelines and improve the effectiveness of care, optimize patients' outcome[s] and favorably effect overall cost of care through a focus of resources on most effective strategies.

MATERIALS AND METHODS

This study was done in a tertiary hospital at Hyderabad, India.

In this study the patient's case sheets were referred for a period of three months and the following data was collected in a case report form as follows:

The Demographic data

Diagnosis (Unstable angina or MI) associated with DM & HTN

Treatment given

Duration of stay in the hospital:-

Number of drugs prescribed using generic names:-

Analyzing the above data the following indicators were noted

Prescribing Indicators

- a) Average number of drugs per patient was calculated

(Calculated by dividing the total number of different drugs given by the total number of patients)

- b) Percentage of drugs prescribed by generic names.

(Calculated by dividing the number of drugs used by generic name by the total number of drugs, multiplied by 100)

Patient Indicators

- a) Average age of men
(Determined by adding the ages of all men by the total number of men)
- b) Average age of women

(Determined by adding the ages of all women by the total number of women)

- c) Men to women ratio

(Determined by dividing the number of men by the number of women.)

RESULTS

Treatment given to 140 patients with acute coronary syndromes with DM & HTN was studied.

96 of these patients were men

44 of them were women.

Average age of men was 62 years (Range 36-83 years)

Average age of women was 61 years (Range 30-80 year)

Average number of drugs prescribed per patient was 9.93

Generic names/Brand names ratio was 42:653

The ratio of trade names to generic names used was 15.54:1

Percentage of drugs prescribed by generic names was 6.00%

Average duration of stay in the hospital was 7 days (Range 2-23 days)

The most commonly used drugs in the different groups were as follows:

Beta blockers	Metoprolol
Calcium channel blockers	Amlodipine
ACE Inhibitors	Captopril
Lipid lowering drugs	Atorvastatin
Anticoagulants	Unfractionated heparin
Antiplatelet drugs	Aspirin & Clopidogrel combination

DRUG UTILIZATION STUDY

Name of the Drug	% of Patients
1. IV Nitroglycerine	60.00%
2. Oral Nitrates	71.42%
3. Nicorandil	27.14%
4. Anticoagulant therapy	84.28%
Heparin	55.71%
Low Mol. Wt Heparin (LMWH)	20.00%
5. Lipid lowering drugs	68.57%
6. Antiplatelet drugs	94.20%
Aspirin & Clopidogrel	60%
Aspirin	20%
Clopidogrel	8.5%
7. Parenteral Insulin	84.29%
8. Oral Hypoglycemic drugs	50.00%
9. Beta blockers	60%
Metoprolol	42.85%
Atenolol	17%
Carvedilol	7.14%
Bisoprolol	2.85%
10. Calcium channel blockers & Misc. antianginal drugs	52.86%
Amlodipine	25.71%
Diltiazem	14.29%
Trimetazidine	12.86%
11. ACE Inhibitors	45.71%
Captopril	17.14 %
Enalapril	15%.
Ramipril	12.68%
12. AT II antagonists	24.29%

COMPARISON BETWEEN PREVIOUS STUDY & PRESENT STUDY

DRUG	Previous study	Present study
Aspirin	99.16%	25.71%
Aspirin & Clopidogrel	00.00%	60.00%
Unfractionated Heparin	46%	55.71%
LMWH	54.00%	20.00%
ACE Inhibitors	48.90%	45.71%
Beta blockers	77.50%	60.00%
Calcium channel blockers	35.00%	52.86%
Lipid lowering drugs	45.60%	68.57%
Intravenous Nitrates	52.90%	60.00%

DISCUSSION

The average number of drugs used per patient was 9.93 which is high. Rationale of combined therapy of aspirin & clopidogrel in acute coronary syndromes. Aspirin inhibits platelet activation through TXA₂ pathway but does not affect activation through ADP pathway. Clopidogrel inhibits platelet activation through ADP pathway. As it blocks platelet activation by a mechanism different from aspirin, the combination therapy with aspirin may offer benefits over either drug used alone. According to the CURE trials,² clopidogrel and aspirin decrease the rate of combined end point of cardiovascular deaths, non fatal MI or stroke by 20% in patients with acute coronary syndromes when compared to aspirin.³ High risk patients presenting with acute coronary syndromes should receive clopidogrel on admission at conservative centers and if appropriate after coronary angiography in aggressive centers. In the hospital where our study was done this combination has been in use for more than 5 years and it was found to reduce the mortality rate of patients within a year of acute coronary syndromes significantly. The only major side effect seen was GI bleeding and bleeding at arterial puncture sites.

CONCLUSION

In this study the incidence of polypharmacy was high. Trade names were used more often when compared to generic names. If only generic names are used the financial burden on the patient can decrease. The value of indiscriminate use of clopidogrel along with aspirin is substantial making this drug a valuable addition to the effective medications for secondary prevention of high risk patients. Further studies from time to time are required in drug utilization pattern and standard treatment guidelines to be circulated among practicing physicians.

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