Study of Drug Utilization of Cardiovascular Drugs in Coronary Artery Disease

S. Rajesh Raja, J. Beulah, Dr. A. Hemanth M. Pharm, Phd
St.Johns college of pharmaceutical sciences, Kurnool, Andhra Pradesh

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ABSTRACT: A drug utilisation review looks at how drugs are prescribed, dispensed, delivered, and consumed. This authorised, methodical, and ongoing review is focusing on pharmacy benefit managers. The terms "drug utilisation reviews" and "drug use/utilization evaluations" are interchangeable. Drug use evaluations will assist in ensuring that medications are utilised correctly (for individual patients).
Methods: In this prospective observational study a total of 105 patients were involved. The study was conducted in Medicover hospital, Kurnool for a period of six months.
Results: The commonly utilized cardiovascular drugs are Clopidogrel, Ecosporin, Atorvastatin, Heparin, Isosorbide dinitrate, Torsemide, Spiranolactone, Metoprolol, Ramipril, Furosemide,Propranolol, Ivabradine, Telmisartan, Losartan, and Amlodipine. Thecommonly utilized miscellaneous drugs are Ranitidine, Ceftriazone, Pantoprazole, Ofloxacin, Paracetamol, Amoxyclav, Tramadol, Metformin, Duolin+Budecort.
Conclusion: In our present study, the most common cardiovascular disease is myocardial infarction. The age group 50-59 years constituted the highest number 36%and age group 60-69 years constituted 30%. In our study males 68% were most commonly affected than females 32% due to smoking and alcohol consumption. The most commonly utilized cardiovascular drugs were Clopidogrel, Aspirin, Atorvastatin, and Heparin. Percentage of drugs prescribed by generic name should be improved.
KEYWORDS: Drug utilization, cardiovascular diseases, cardiovascular drugs

I. INTRODUCTION

Cardiovascular sicknesses were gaining significance in India recently because of multiplied incidence of the disorder. it's miles the first among top five causes of deaths in Indian populace rural vs. city, economically backward vs. developed states, men vs. women and at all stages vs. center age In 2000, there have been an expected 29.8 million people with CHD in India out of a complete expected population of 1.03 billion, or a nearly 3% ordinary prevalence in line with international financial institution estimates, CVD had a 31% percentage within the general burden of disorder in 20015 in 2003, the superiority become envisioned to be 3-four% in rural regions and 8-10% in urban areas in keeping with population based cross sectional surveys.

The time period myocardial infarction shows the development of place of myocardial necrosis as a result of neighborhood ischemia. Acute MI, also known as "coronary heart assault," is the unmarried most not unusual reason of loss of life in industrialized international locations. ACSs are classified in keeping with electrocardiographic changes into STE ACS, additionally known as STEMI, NSTEACS, which incorporates NSTE MI.

Angina is a scientific circumstance that occurs whilst the heart gets a reduced quantity of oxygenated blood. regularly, this takes place because of deposits of cholesterol, clogging the blood vessels that bring blood to the coronary heart. patients who have angina pectoris are at a danger for having a coronary heart attack; chest pain in the back of the breastbone is the maximum commonplace signal of angina pectoris. Angina is assessed as one of the following two sorts stable angina, volatile angina

A drug utilisation evaluate looks at how tablets are prescribed, disbursed, brought, and ate up. This permitted, methodical, and ongoing assessment is focusing on pharmacy gain managers. Drug use evaluations will assist in making sure that medicines are utilised correctly (for character sufferers). The prescription and fitness history of a affected person, along with all phases of dispensing, is meticulously referred to inside the drug usage evaluation. similarly, the purpose of this exam is to reap right remedy choice-making and a useful final results for the affected person. If a treatment is deemed

ineffective, it could be required to engage with providers or patients to improve remedy adherence.

II. OBJECTIVES
The key objectives of the study include
✓ To determine the patterns of drug use
✓ To determine the compliance, effectiveness, and rational use of drugs.

III. METHODOLOGY
Study site: Medicover multispecialty hospital, Kurnool.
Study duration: The study was conducted over a period of six months.
Sample size: 105 subjects
Study design: It is a prospective observational study
Study criteria

Inclusive Criteria
✓ Diagnosed case of coronary artery disease
✓ All the patients of either sex aged above 18 years would be included.
✓ All the coronary artery disease patients with co morbidities who are prescribed with cardiovascular drugs.
✓ Conscious and co-operative patients are only included.

Exclusive Criteria
✓ Pregnant women

✓ Psychiatric patients with coronary artery disease.
✓ Patients who are not willing to participate in the study.

Ethical approval
The study is planned to initiate after the clearance of institutional ethics committee

IV. PLAN OF THE STUDY
Study procedure
✓ Data will be collected from the case sheets of patients who are admitted in cardiology ward in Medicover multispecialty hospital.
✓ Collection of patient information through a patient documentation form and interview with the patient and/or representative and health care providers
✓ Interpretation of all available information to identify the patients with various types of cardiovascular diseases.
✓ Interpretation of various cardiovascular drugs prescribed to the patient.

V. RESULTS
A prospective observational study was conducted for six months in a tertiary care teaching hospital in inpatient department at MEDICOVER HOSPITAL, KURNOOL. A total 105 patients were studied who comes under inclusion criteria.

5.1 Gender wise distribution of patients in CAD
A total number of 105 subjects were collected, among them 32% were females and 68% were males.

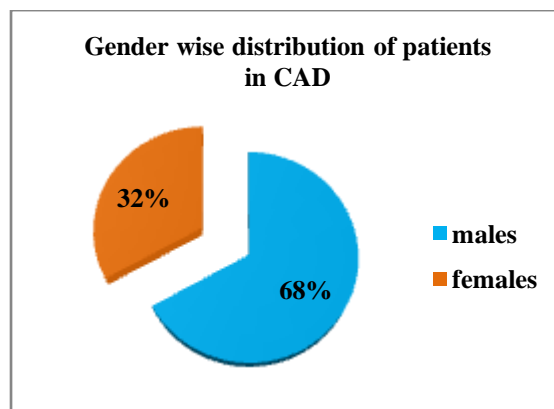| Sl.no	Gender	No of patients	Percentage
1	Males	71	68%
2	Females	34	32%

Fig.1.a: Gender wise distribution of patients in CAD

5.2 Age wise distribution of patients
The age wise distribution of patient's as follows

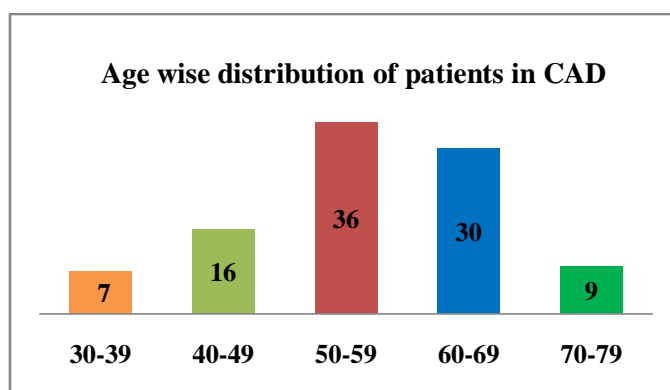| Sl.no	Age	No of patients	Percentage
1	30-39	8	7%
2	40-49	17	16%
3	50-59	38	36%
4	60-69	32	30%
5	70-79	10	9%

Fig.5.2.b: Age wise distribution of patients in CAD

5.3 Diagnosed cases of different types in CAD
The commonly diagnosed cardiovascular diseases are IWMI, AWMI, STEMI, NSTEMI, Stable Angina, and unstable Angina which accounts as follows

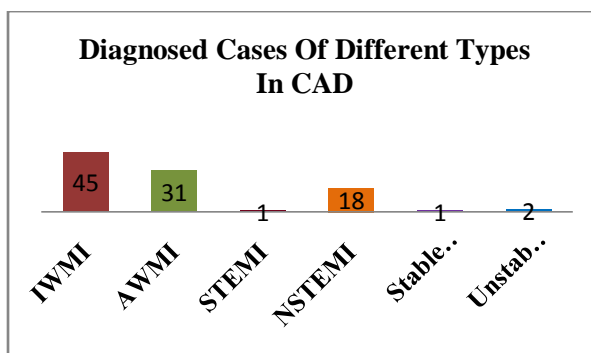| Sl.no	Diagnosed cases	No of patients	Percentage
1	IWMI	48	45%
2	AWMI	33	31%
3	STEMI	1	1%
4	NSTEMI	19	18%
5	Stable Angina	1	1%
6	Unstable Angina	3	2%

Fig.5.3.c: Diagnosed cases of different types in CAD

5.4 Commonly utilized cardiovascular drugs
   The commonly utilized cardiovascular drugs are Clopidogrel, Ecosporin, Atorvastatin, Heparin, Isosorbide dinitrate, Torsemide, Spiranolactone, Metoprolol, Ramipril, Furosemide, Propranolol, Ivabradine, Telmisartan, Losartan, and Amlodipine.

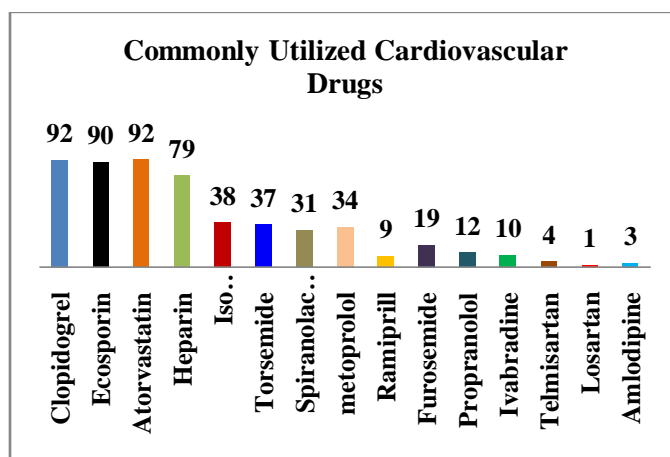| Sl.no	Commonly Utilized cardiovascular drugs	Number	Percentage
1	Heparin	83	79%
2	Clopidogrel	97	92%
3	Ecosporin	95	90%
4	Atorvastatin	97	92%
5	Isosorbide di nitrate	40	38%
6	Metoprolol	36	34%
7	Torsemide	39	37%
8	Spiranolactone	33	31%
9	Ramipril	10	9%
10	Furosemide	20	19%
11	Propranolol	13	12%
12	Ivabradine	11	10%
13	Telmisartan	5	4%
14	Losartan	2	1%
15	Amlodipine	4	3%

Fig.5.4.d: Commonly Utilized cardiovascular drugs in CAD

5.5 Miscellaneous drugs

Thecommonly utilized miscellaneous drugs are Ranitidine, Ceftriazone, Pantoprazole, Ofloxacin, Paracetamol, Amoxyclav, Tramadol, Metformin, Duolin+Budecort Constituted As Follows.
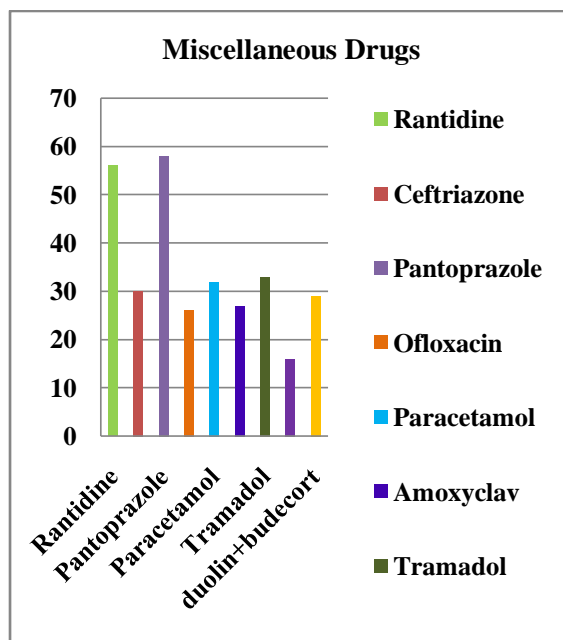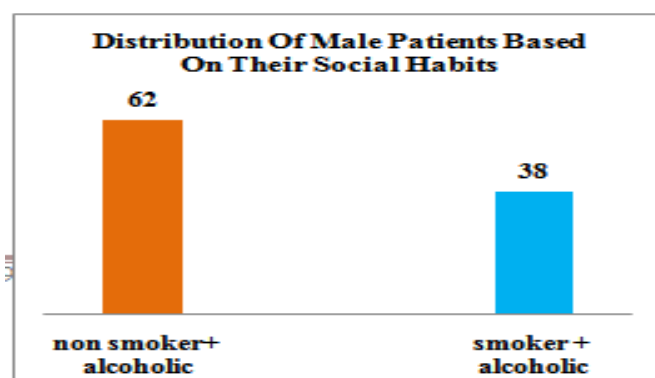

Fig.5.5.e: Miscellaneous drugs in CAD

5.6 Distribution of male patient based on their social habits

A total number of 105 subjects were collected, among them 62% were non smoker+ alcoholic and 38% were smoker +alcoholic.

Sl.no	Male	No of patients	Percentage
1	Non smoker+alcoholic	44	62%
2	Smoker+alcoholic	27	38%

5.6.f: Distribution of male patient based on their social habits

VI. DISCUSSION

The study was carried out to assess the drug utilization of cardiovascular drugs in coronary artery disease patients in My Cure Hospital Kurnool district.

6.1 Age wise distribution

The age distribution of patients showed that patients of age group 50-59 years constituted the highest number 36% and 30% for 60-69 years.

6.2 Gender wise distribution

In our study Males 68%were most commonly affected than Females 32%.

6.3 Commonly diagnosed diseases

The commonly diagnosed cardiovascular diseases are IWMI, AWMI, STEMI, NSTEMI, Stable Angina, and Unstable Angina which accounts for 45%, 31%, 1%, 18%, 1%, and 2%.

6.4 Commonly utilized cardiovascular drugs

Clopidogrel 92%, Aspirin 90%, Atorvastatin92%, Heparin 79%, isthe most commonly utilized drugs. The commonly utilized Beta Blocker was Metoprolol 34%, followed by Propranolol 12%.The commonly utilized Diuretics are Torsemide 37%, followed by Furosemide 19%. The most commonly utilized Angiotensin Receptor Blocker was Telmisartan 4%, and followed by Losartan 1%. The commonly utilized Angiotensin Converting Enzyme Inhibitor was Ramipril 9%. Amlodipine 3% was the commonly used Calcium Channel Blocker.The commonly utilized Organic Nitrate was Isosorbidedinitrate 38%.

6.5 Miscellaneous drugs

Thecommonly utilized miscellaneous drugs areas follows Ranitidine 53%, Ceftriazone 28% Pantoprazole 55%, Ofloxacin 24%, Paracetamol 30%, Amoxyclav 25%, and Tramadol 31%, Metformin 15% and Duolin+budecort 27%.

VII. CONCLUSION

A coronary artery disease is the leading cause of death in economically developed countries and is rapidly assuming serious dimensions in developing countries.The term myocardial infarction indicates the development of area of myocardial necrosis caused by local ischemia.Angina is a medical condition that occurs when the heart receives a decreased amount of oxygenated blood. Often, this occurs due to deposits of cholesterol, clogging the blood vessels that carry blood to the heart.

In our present study, the most common cardiovascular disease is myocardial infarction. The age group 50-59 years constituted the highest number 36%and age group 60-69 years constituted 30%.

In our study males 68% were most commonly affected than females 32% due to smoking and alcohol consumption.

The most commonly utilized cardiovascular drugswere Clopidogrel, Aspirin, Atorvastatin, and Heparin.

Percentage of drugs prescribed by generic name should be improved.

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