



International Journal of Pharmacology and Clinical Research (IJPCR)

IJPCR | Volume 5 | Issue 1 | Jan - Mar- 2021
www.ijpcr.net

Research article

Clinical research

ISSN: 2521-2206

A study of drug use of anti-hypertensive agents with comorbid conditions in multispecialty hospital.

Mr. Shivkumar Shete*, Swetha, Sharanya, Vandana, Iffath shah.

Assistant Professor, Students of Pharm.D Sree Dattha Institution of Pharmacy, Ibharahimpatnam, Hyderabad, T S

*Address for correspondence: Mr. Shivkumar Shete

ABSTRACT

The main aim of the study is to focus on the prescribing patterns of hypertensive drugs with comorbid in the tertiary care hospital. The objective of the antihypertensive treatment is to prevent the occurrence of cardiovascular conditions and other comorbidities caused by sustained high blood pressure. The drug utilization research is to assess the rationality of drug use. Recently it has been found that hypertension is the most frequent cause of comorbidities and mortality throughout the world. Cardiac patients visiting the cardiologist are evaluated, diagnosed and prescribed with suitable therapy. Using a suitable designed data collection form, the details were collected from patient demographics, prescription chart, lab data, progress chart, medical records, doctor's notes, nursing notes. In the result among the lipid lowering agents, rosuvastatin was given to the most of the patients (53.84%) and atorvastatin (46.15%). Anti-hypertensive agents are predominantly used among the patients. The most preferred options were beta blockers, ace inhibitors and diuretics. Adrenergic receptor blockers are given to the patients with hypertension. Most of the physicians prescribed metoprolol (57.7%) and bisoprolol (8.8%). On the other hand, some physicians prescribed carvedilol (31.1%). Ace inhibitors had a great chance in the prescriptions enalapril was given to the most of the patients (66.6%). Diuretics were the third preferred option by the physicians, eplerenone (38.2%) and furosemide (32.3%). The study concluded that most of the patients included in the study were suffering from hypertension with underlying comorbidities. These may be due to their lifestyle, smoking, less exercise and poor health hygiene. The maximum number of patients was male and elderly people; it may be due to smoking and alcoholic habits. Analysis proclaims that statins and anti-atherogenic agents are dominant cardiovascular drugs when compared to others. Beta blockers, ace inhibitors, diuretics are predominant in anti-hypertensive group.

Keywords: hypertension, co morbidities, drug use evaluation

INTRODUCTION

Hypertension has been the most important contributing factors to cardiovascular disease, the leading causes of morbidity and untimely death. Sustained hypertension damages heart,

kidney, blood vessel, and brain which lead to ischemic heart disease, chronic heart failure, renal failure, and stroke. Hypertension therefore is one of the most serious concerns of modern medical practice.

Aim

Accurate diagnosis, proper prescribing, correct dispensing, suitable packing and patient adherence are the five important criteria for rational prescribing of drugs

Prescribing patterns and drug utilization studies help the prescribers to create awareness about the problems and to provide feedback about rational use of drugs.

The aim of this study is to assess prescription pattern of antihypertensive drugs and other comorbidities caused by therapy.

Objectives

The objective of the antihypertensive treatment is to prevent the occurrence of cardiovascular conditions and other co morbidities

caused by sustained high blood pressure.

The time of initiating antihypertensive drugs therapy should be determined according to the level of blood pressure and the presence

or absence of risk factors for comorbidities.

The study on prescribing pattern definitely improve the quality of prescription writing, so study of drug prescribing pattern is relevant in the present scenario.

MATERIALS AND METHODS

Study Design

This is a retrospective, prospective and observational study conducted a period of 6 months in the in-patient department of general medicine multi specialty hospital.

All relevant patient data will be collected in a suitable designed patient data collection form.

Inclusion Criteria

All the in-patients diagnosed with hypertension and other comorbid conditions by a consultant physician in the unit were included in the study.

Exclusion Criteria

Patients who were under day care management.

Patients who were not willing to participate in the study.

Patients who were in critical condition.

Patients who were under monotherapy.

All out patients in OPD's.

Mentally ill patients.

Pediatrics.

Method And Collection Of Data

It is a retrospective, observational study

Duration of Study

The study will be conducted for a period of 6 months (i.e. October 2019 to March 2020)

RESULTS

Out of 150 patients 15 patients present between age group 31-40, 26 patient present between age group 41-50, 62 patient present between age group 51-60. 23 patient presents between age group 61-70. 14 patient presents between age group 71-80. 10 patient present between age group 81-90. The cross-sectional study was conducted on a tertiary care hospital in a time period of 6 months (October 2019-March 2020). The study is mainly observing the prevalence, prescribing patterns and the method of treatment used for the treatment of several hypertension diseases. The patient from other hospital department is below 18 years, pregnant and lactating women are excluded from this study. The patient who diagnosed with hypertension disease other than above category were selected for the study. The study mainly observed the patient data like age, sex, previous and current medical profile and the various classes of treatments. About half of the population was suffering from diabetes, which increases the risk of hypertension disease. One study revealed that hypertension is the second leading cardiovascular disease. Other cardiovascular risk factor in diabetic individuals includes abnormalities of lipid metabolism platelet function and clotting factors. Hypertension is the major cause of other disease such as heart failure, stroke, myocardial infarction and angina pectoris. Other population-based studies suggest that elevated insulin levels, which often occurs in type 2 diabetes mellitus, is an independent risk factor and co-exist with cardiovascular disease. The data were obtained from patient profile medical records

Table 1 . Co-Morbidities

S. NO	Medical Condition	No Of Patient (N=150)	Percentage%
1.	Diabetes Mellitus	38	25%
2.	Anemia	12	8%
3.	Renal Disease	15	10%
4.	Obesity	3	2%
5.	Hypothyroidism	7	5%
6.	COPD	12	8%
7.	Asthma	8	5%

8.	CKD	11	7%
9.	GI Disorders	13	8%
10.	None	32	21%

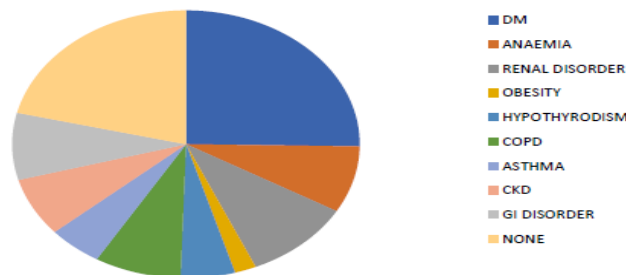


Figure 1. Co-Morbidities

RISK-FACTORS INVOLVED

Total number of patients visited hospital were 1756 out of them 150 are hypertension patient

Table 2 . Risk factor

S. NO	Risk factor	Male	Female
1.	Smoking	20	8
2.	Tobacco	32	4
3.	Obesity	15	23
4.	High sodium intake	36	38
5.	Alcohol	28	17

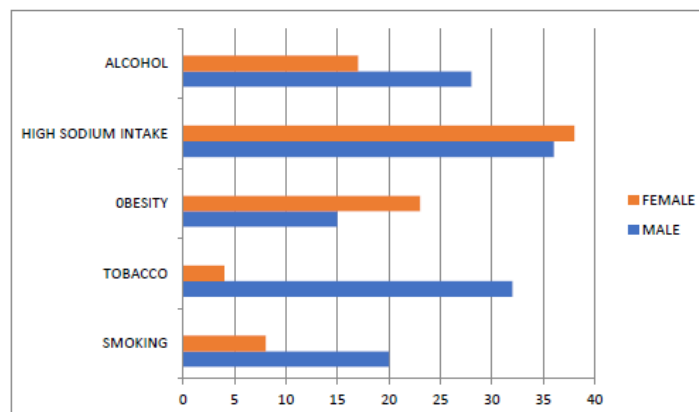


Figure 2. Risk factor

Drug Related Problem: In a sample size of 150 patients the total drug related problems were identified in 56 samples.

Table 3 Drug Related Problem

S. NO	DRP	MALE	FEMALE
1.	Improper drug selection	9	12
2.	Adverse drug reaction	15	10
3.	Drug use without indication	14	16
4.	Overdose	5	3
5.	Alternative dosage form	6	8

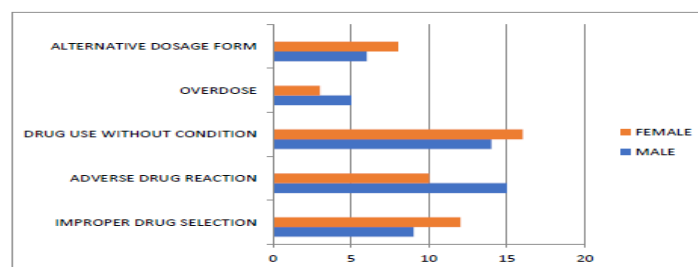


Figure 3 Drug Related Problem

Table 4 Drug Interactions Based On Severity

S. NO	Severity	Male	Female
1.	Mild	52	4
2.	Moderate	48	34
3.	Severe	28	15

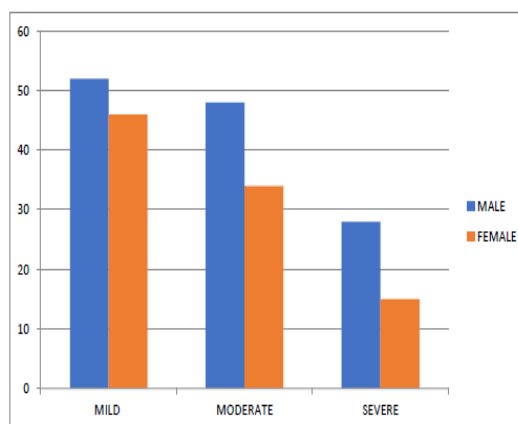


Figure 4 Drug Interactions Based On Severity

Drug Disease Interactions

Table 5 Drug Disease Interactions

S. NO	Drug Disease Interaction	Effect	No. Of Samples
1.	Beta blocker +heart failure	Worsen asthma condition	2
2.	Calcium channel blocker + Heart failure	Negative inotropic effect	5

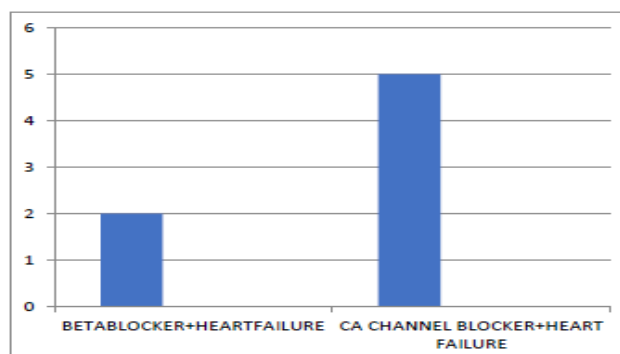


Figure 5 Drug Disease Interactions

DISCUSSION

Observational prospective study is a type of longitudinal cohort study, where participant is enrolled into the study before they develop the disease or outcome in question. Also, an epidemiologic study in which the groups of individuals (cohorts) are selected on the basis of factor that is to be examined for possible effects of some outcome. A total number of 150 samples were enrolled in the study. Out of them males were 102 and females were 48. In the DRP'S 21 improper drug selection, 25 adverse drug reaction, 30 drug use without indication, 8 overdose, 14 alternative dosage forms. Most commonly found drug interactions are among the classes' anti-platelets and cardiac glycoside. We have identified drug disease interaction in few samples that are of beta blockers + heart failure worsens asthma condition in 2 patients and calcium channel blockers + heart failure causes negative inotropic effect in 5 patients.

REFERENCES

1. Einarson T. In: Parthasarathi G, Nahata MC, Hansen KN, editors. A Text book of Clinical Pharmacy Practice essential concepts and skills. 1st ed., Hyderabad: Universities Press (India) Limited. 2008; P.405-423
2. Cohen MR, Furberg CD, Moore TJ. Serious adverse drug events reported to the Food and Drug Administration, 1998-2005. Arch Intern Med. 2007; 167:1752-1759.
3. Ginevra Biino, Gianfranco Parati, Maria Pina concas, Mauro Adamo, Andrea Angius, Simone Vaccargiu, Maria Pirastu. Plos one 8(3), e59612, 2013.
4. Burt ul, Whelton P, Roccella EF, et al. 1995 prevalence of hypotension in the US adult population; results of the NHANES III, 1998-1991, Hypertension.
5. Stamler J, Stamler R, Riedlinger WF, Algera G, Robert GH. 1976, hypertension screening of 1 million Americans, community hypertension evaluation clinic program, 1973-1975.
6. Strom BL. Pharmacoepidemiology. 4th edition. Chichester, England: John Wiley & Sons, Ltd 2005.
7. Rosner B, Kass EH, Shapiro M, Townsend Tr. Use of antimicrobial drugs in general hospital. II. Analysis of patterns of use. J Infect Dis. 1979; 139:698- 706.
8. Bjerrum L, Andersen M, Bergman U, Montanaro N, Vaccheri A, Wettermark B. Deviations from evidence-based prescribing of nonsteroidal antiinflammatory drugs in three European regions. Eur J Clin Pharmacol. 2000; 56:269-272
9. Wiman F, Boethius G. Recording of drug prescriptions in the country of Sweden. Methodological aspects. Eur J Clin Pharmacol. 1977; 12:31-35
10. Furu K, Engeland A, Sakshaug S, Eggen A, Hartz I, Njolstad I. Aspects of statin prescribing in Norwegian countries with high, average and low statin consumption – an individual – level prescription databases study, BMC Clin Pharmacol. 2007; 7:14.
11. Cabrita J, Duarte RF, Using a pharmaco-epidemiological approach to estimate diabetes type II prevalence in Portugal. Pharmacoepidemiol Drugsaf. 2006; 15:269-274

CONCLUSION

The study concluded that most of the patients included in the study were suffering from hypertension disease. These may be due to their food habits, smoking, less exercise and poor health hygiene. The prescribing pattern was rational and it follows the standard treatment guideline so, the treatment was effective because of recovery of normal life of patient. The prescribing pattern was rational and it follows the standard treatment guidelines so, the treatment was effective because of recovery of normal life of patient may not according to their data to other generalized hospitals. Besides sample size does not reflect the actual population and prescription pattern in the whole state or country. Under use of calcium channel blockers and angiotensin receptor blockers should be changed by undertaking educative intervention to change the prescribing practice. The study has some restraints which leads to say it cannot be a standard one because it is carried out in one tertiary level hospital.