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Assessment of anti hypertensive prescribing pattern and patient counseling in an urban population

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Abstract

A cross sectional descriptive study was carried out in order to assess the prescription pattern of Anti –Hypertensive prescribing pattern and patient counseling in urban population .The study were 500 Hypertensive patients from the community pharmacy who visited to refill the prescriptions. Patients were categorized as per JNC-7 guidelines. Blood pressure control and current utilization of Hypertensive drugs were studied using Instate Excel Sheet. The main outcome measures were improvement in Anti-Hypertensive prescription pattern and satisfaction in counseling. Mean age of the group under study was 48 years (range =18 to 76 years) .there were 404 (49%) male patients. In this study fixed dose combination Therapy was mostly used.427 (85 %) patients were satisfied with pharmacist counseling.Dyslipidemia was the major co-morbidities in urban population. Due to sedentary life –style .The study resulted diuretics as the main drug of choice during initial therapy either alone or in combination with other drugs. community pharmacist play major role in educating the Hypertensive patients to have a better blood pressure control and Life style modification that can prevent Cardio Vascular complications.

INTRODUCTION

Hyper tension is one of the major chronic diseases resulting in high Mortality and Morbidity in today's world [1]. Poor control of this highly prevalent disease can lead to the development of ischemic heart disease, Stroke and Chronic Renal Failure.Socio-Econic,Life Style, Nutritional and lack of Patient motivation, Lack of patient education Programs and adverse reactions to antihypertensive drugs all could contribute significantly to this problem of non –compliance [7]

The present prescribing and patient counseling for Hyper tension was under taken in community Pharmacy (Thulasi Pharmacy Private limited, Coimbatore, India) prospective cross sectional

descriptive study was conducted in order to establish the current trend of drug prescribing and patient counseling of Anti –Hypertensive drugs. This kind of Prescription assessment improve use of Anti-hypertensive drugs, more Professional involvement of well motivated and trained pharmacist should benefit hypertensive patients [7] and improving the Patient Health care Further

MATERIALS AND METHOD

The prospective cross-sectional descriptive survey was started in community pharmacy, Coimbatore, after getting the official permission of the Director of Pharmacy to collect the information from the Patient visited the pharmacy for refilling prescriptions. The Protocol (Proforma) was prepared as per JNC-7 guidelines (and the Institutional Human Ethical) Committee of J.S.S. College of Pharmacy, Ooty, of prescribing pattern of Anti-Hypertensive Drugs

Study Design

A prospective cross-sectional descriptive study to assess prescribing pattern of Anti-Hypertensive drugs in management of Hypertension and patient counseling.

Study Site

The study was carried out in Thulasi Pharmacy, Coimbatore for collection of data

Study Setting

The study was carried out in Thulasi pharmacy, who was currently following the treatment of hyper tension in urban Area Hospitals.

Source of Data

All necessary and relevant information were collected from Prescriptions, treatment chart and verbal communications with patient.

Collection of Data

The format for the collection of data is prepared as per JNC-7 Report and Institutional Human Ethical committee of J.S.S. College of Pharmacy, Ooty. Which involved Patients as well as medication information Such as Name, Age, Sex, Social History, Family history, Current Treatment Regimen, Change of Prescription, Current status of Blood pressure and Patient Satisfaction on counseling points given by Prescriber and Pharmacist

Duration of Study

Study was performed 6 months Duration.

Inclusion Criteria

Patient who purchased Anti –Hypertensive medicines with prescriptions of any age groups ranging from 18-75 years or Hypertension with Co-morbidities.

Statistical Data Analysis

Statistical analysis of the data was performed by using INSTAT Excel Sheet Data was presented as Mean \pm Standard Deviation for prescribing pattern and patient satisfaction on counseling. Single factor Analysis of Variance (ANOVA) was performed to assess the blood pressure variables among different age groups. The mean Systolic and Diastolic blood pressure of patients prescribed with fixed dose Anti-Hypertensive and without such drug was compared by Student T –test, P- Value < 0.05 was considered to be statistically significant.

RESULTS

During 6 months study 9600 patients visited at Thulasi Pharmacy among 500 patients were with Hypertension.

A total 500 study patients comprised of 80.8% (n=404) males and 19.2 (n=96) Females and age distribution gives Table no I

Table – I : Age distribution of patients

AGE DISTRIBUTION (in years)	No. of Patients	Percentage
18 – 20	12	2.4
21 – 25	188	37.6
26 – 30	249	49.8
31 – 35	40	8.0
>36	11	2.2

Over all 249 (49.8%) patients were affected with Hyper tension

The details of mean Systolic Pressure and Diastolic pressure values. The mean Systolic Pressure 139 ± 11.26 and the mean Diastolic pressure 86.04 ± 7.3 . The patients were categorized as per JNC-7 classification criteria for Hypertension and presented in table II

Table II : classification of patients based on Jnc-7 hypertension guidelines

CATAGERY	PRE-HYPERTENSION		STAGE I		STAGE II	
	n	%	n	%	n	%
Systolic	159	31.8	284	56.8	57	11.4
Diastolic	212	42.4	263	52.6	25	5.0

Table no.III show the details of patients who treated with mono therapy among them 182(36. blocketrs(CCBs), 76(15.2%) patients with angiotension converting enzyme inhibitors (ACEIs),

46(9.2%) patients treated with Angiotension II receptors blockers(ARB) and least 1 (0.2%) treated with betablockers with instrinsic sympathomimetic activity. 4%) patients treated with Beta blockers(BBs), 119(23.8%) patients treated with Calcium channel

Table – III : Current antihypertensive treatment of the patients

Sl. NO	DRUG CLASS	NUMBER OF PRESCRIPTION	%PRESCRIPTION
1.	Thiazide diuretics	10	2.0
2.	Loop diuretics	05	1.0
3.	Potassium sparing diuretics	01	0.2
4.	Aldosterone receptor blockers	02	0.4
5.	Beta blockers	182	36.4
6.	Beta blockers with intrinsic sympathomimetic activity	01	0.2
7.	Combined alpha and beta blockers	--	--
8.	Angiotensin Converting Enzyme inhibitors	76	15.2
9.	Calcium channel blockers (Non – dihydropyridines)	119	23.8
10.	Calcium channel blockers	04	0.8
11.	Angiotensin II receptor antagonist	46	9.2
12.	Alpha blocker	10	2.0
13.	Central alpha – 2 agonist and other centrally acting drugs	--	--
14.	Direct vasodilators	04	0.8
15.	Statins	40	8.1

Table no:IV show details of patients who treated with fixed dose combinations. For 491(98%) of the total study patients , fixed dose combinations were prescribed. Among them the six major fixed dose combinations were ,angiotension converting enzyme inhibitor combination which was prescribed for about 196(39%) patients with Calcium channel blocker and diuretics with frequencies of 156(31%), 335(65.2%) respectively. The other major combination prescribed was beta blockers with diuretics with prescribing frequency of 170(34%).

Table – IV fixed dose combination of antihypertensive drugs prescribed to patients

Sl. NO	TYPE OF FIXED DOSE COMBINATIONS	NUMBER OF PRESCRIPTION	%
1.	Angiotensin Converting Enzyme inhibitors and Calcium channel blockers	144	28.8

2.	Angiotensin Converting Enzyme inhibitors and Diuretics	52	10.4
3.	Angiotensin II receptor antagonist and Diuretics	48	9.6
4.	Beta blockers and Diuretics	170	34
5.	Centrally acting drug and Diuretics	2	0.4
6.	Diuretics and diuretics	21	2.4
7	Beta blockers and calcium channel blockers	12	2.4
8	Statins and diuretics	42	8.4
9	others	9	1.8

We observed that 5.2% male patients 1.2% female patients were workers 4.6% male patients and 0.6% female patients were Illiterates and 27.4% male patients having habit of smoking and 85.4% patients were satisfied with Pharmacist counseling and 14.2% were satisfied with prescribers counseling points and 0.4% were satisfied with both counseling points.

Type-II diabetes mellitus (35%) was the most frequent co-morbidity among hypertensive patients observed that 5.2% male patient and 1.2% female patients were workers or Formers, 4.6% male patients and 0.6% female patients were illiterates and 27.4% male patients having habit and Asthma(5%) and Ischemic heart disease(1.6%) Joint disease (0.2%) are also other co-morbidities.

Table – V : Other co-morbidities in patients

S. NO	CATEGORY		(n)	%
1.	DIABETES COMPLICATIONS	Diabetes	175	35
2.		Diabetic neuropathy	04	0.8
3.		Glucose intolerance	---	---
4.	RESPIRATORY COMPLIATIONS	Asthma	25	05
5.		COPD	---	---
6.		ACE inhibitors induced cough	02	0.4
7.	OTHERS	Hyperkalemia	01	0.2
8.		Bilateral renal artery stenosis	01	0.2
9.		Gout	---	---
10.		Pregnancy	08	1.6
11.		Prostatic hypertrophy	01	0.2

DISCUSSION

A prescription based survey is considered to be one of the most effective methods to assess and evaluate drug utilization of medication. It is also important to consider the recommendations of JNC-7 report on hypertension that helps to improve prescribing patterns of the prescriber and ultimately, the clinical standards. A continuous supervision is therefore required through such kind of systematic audit that provides feedback from the physician and helps to promote rational use of drugs.

The present study observed that hypertension was more prevalent in male than in females. Due to lack of regular exercise and sedentary life-styles. The mean age of male and female who visited the pharmacy for hypertensive treatment were observed to be 47.98 years. In urban population majority of patients are involved in carrying out business. Majority of patients were vegetarians(60.6%) and Non-alcoholic(73.4%). Whereas all female patients were Non-alcoholic and Non-smokers.

The patients were categorized as per the JNC-7 classification criteria for Hypertension and was observed that majority of hypertension and was observed that majority of hypertensive patients fall under stage-I others were classified under prehypertension and least number of patients in stage-II category of JNC-7.

The Anti hypertensive drugs prescribed to the study patients were categorized. The three main antihypertensive drugs which were prescribed alone or in combination with other class of drugs were B-blockers, Calcium channel blockers and angiotension converting enzyme inhibitors. Which constituted 36.4%,24.6% and 15.2% respectively. Among the eight major fixed dose combinations, b-blockers with diuretics were the highest combination found to be given in the urban population prescriptions.

Other co-existing disease with hypertension were assessed and were observed that patient had diabetic complications, respiratory diseases and cardiovascular disease and some other conditions like joint disease, renal diseases etc, The highest prevalence was dislipidemia, diabetes and asthma were the other two major co-morbidities.

Pharmacist play an important role in educating the patient about the drugs and dosage schedule. It was noticed that Pharmacist who distribute the medicines did not give adequate written or oral instructions. However, most of the hypertensive patients were aware of their dosing schedule but not about the nature of the drugs that they were taking.

CONCLUSION

Assessing prescription pattern of drugs for the relevance and adherence as per standard treatment guidelines is important for rational drug utilization. Uncontrolled hypertension is a major health problem and is directly responsible for majority of cardio vascular events. Despite of few positive adherence of JNC-7 guidelines, the goal blood pressure was not attained in the study patients. Prescribers must be encouraged to adhere to the standard guidelines like JNC-7 for

adopting better diagnostic and management strategies and patients counseling in management of hypertension.

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