



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

ASSESSMENT OF PRESCRIPTION PATTERN OF ANTI - HYPERTENSIVE DRUGS IN TERTIARY CARE TEACHING HOSPITAL IN MEDCHAL, TELANGANA

M. KOMALI^{*1}, T. AISHWARYA¹, N. SANDHYA¹, A. RAVITEJA¹, A. AJAY¹, N. SIVASUBRAMANIAN²

¹Gland Institute of Pharmaceutical Sciences Shangri-la, kothapet (V), Medak(D), Telangana, India- 502313

²Professor & Principal, Gland Institute of Pharmaceutical Sciences Shangri-la, kothapet (v), Medak(D), Telangana, India—502313

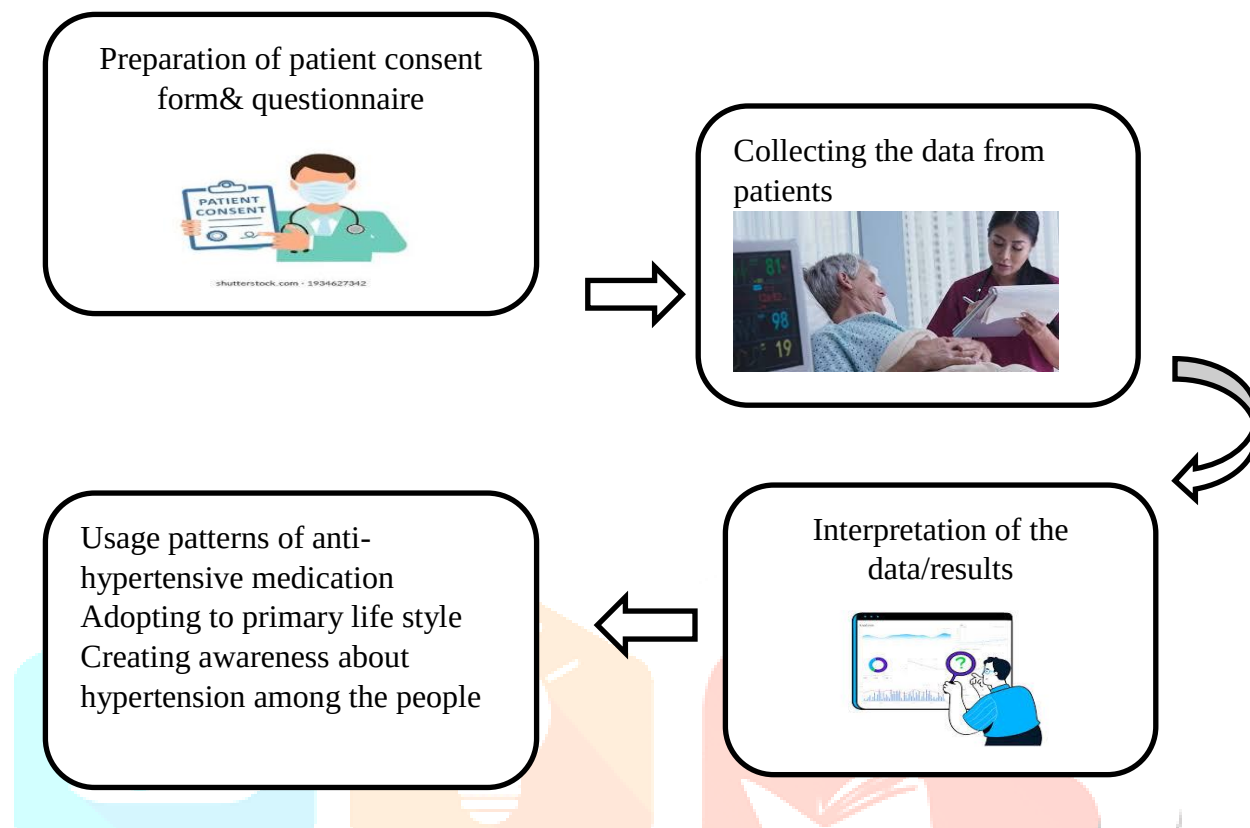
Abstract

To determine prescribing pattern of anti-hypertensive drugs in the medchal district, Telangana. The study of 2 months duration was conducted at Malla Reddy -Narayana Multispecialty Hospital, Medchal, Telangana. The prescriptions containing anti-hypertensive drugs were collected from the patient attending outpatient's department, older, adults all are included, except children & pregnant women.

A total of 125 prescriptions were examined after obtaining consent form, out of which are 82(65.6%) were males, 43(34.4%) were females, the age group of patient varies from 30-90 among them 51-60 are more prevalence to hypertension. 79(63.2%) patients from rural, 46(36.8%) from urban area. 90 patients (72%) are illiterate, 35(27.4%) are literate. 80 patients are smoker with (64%) & 45 are non-smokers with (36%). 88 patients are alcoholic with (70.4%) & 37 are non-alcoholic with (29.6%). The most frequently used monotherapy drug for hypertension is telmisartan(32%) belongs to class of drugs ARB & followed by metoprolol (8%) belongs to Beta blockers. Whereas the mostly used dual therapy drug for hypertension is combination of telmisartan along with amlodipine (7.2%). we have found triple drug therapy (0.8%). patient's having hypertension along with other disorders like diabetes mellitus i.e. 31 patients with (24.8%).

The study findings contribute valuable insights into the socio-demographics profiles and anti-hypertensive drug utilization patterns among hypertensive patients. It is essential to create awareness among the general population on this. Our perspective was changing the lifestyle, diet management and stress management can maintain the blood pressure in optimum condition without usage of medications.

Key words: Prescription pattern, anti-hypertensive drugs, Monotherapy, Angiotensin receptor blocker, Beta blockers.



INTRODUCTION

Hypertension is defined as a blood pressure reading of 140/90 millimetres of mercury (mmHg) or higher. Hypertension is a disease that affects over a billion people worldwide. An estimated 1.28 billion adults aged 30-79 years worldwide have hypertension ^[1]. The world health organization reports that high BP is responsible for approximately 50% of cardiovascular disease cases & fatalities worldwide, either as a primary or secondary cause ^[2]. Hypertension disease is the fourth leading cause of death in developed countries. The pathophysiology of hypertensive illness involves several key factors, including genetics, excessive sodium intake, abnormal renal sodium retention, invariant activation of the renin-angiotensin-aldosterone system (RAAS) & increased peripheral arterial resistance & sympathetic nervous system (SNS) activity ^[3]

The development of hypertension is influenced by a combination of genetic environmental factors, including physical inactivity, smoking, excessive drinking, & obesity, highlighting the potential for prevention & reduction of associated morbidity & mortality ^[4]. Besides unhealthy lifestyles & lack of awareness, hypertension management is also hindered by inadequate, public health systems & healthcare providers who often fall short in diagnosing & treating hypertension according to standard guidelines ^[5]. Despite the challenges, a range of anti-hypertensive drugs can be prescribed to manage the condition, with the specific medication chosen based on the patient's unique circumstances ^[6]. Given the numerous treatment options available, it is the physician's responsibilities to select & prescribe the most effective & safest medication for each patient ^[7]. The JNC 7 guidelines provide evidence-based on recommendation for anti-hypertensive treatment, advocating for the use of ACE inhibitors, ARB or calcium channel blockers as initial therapy, which may be used individually or in combination ^[8]. The high cost of medications has long been a barrier to effective treatment & the growing prevalence of hypertension, combined with escalating treatment expenses,

impacts both physician prescribing patterns & patient adherence to treatment ^[9]. The purpose of this study was to assess BP management & prescribing practices for anti-hypertensive medication in patient with hypertension & diabetes in a real-world clinical setting & to determine the extent of guidelines adherence.

MATERIALS & METHODS:

It is a prospective observational study done in the out-patient's department of tertiary care teaching hospital at Medchal district. Sample Size collected was of 125 cases. Study included Hypertension patients aged more than 30 years, either gender and had taken treatment with oral anti-hypertensive agents whereas injections, children and pregnant women were excluded ^[10].

After obtaining informed consent, patients were interviewed and details regarding the socio-demographic data, antihypertensive drug therapy and associated diseases were investigated through a designed questionnaire form and prescriptions were collected from the patients and were analysed for prescribing pattern of antihypertensive drugs. The parameters were analysed with percentage of different class of antihypertensive drugs prescribed and different type of antihypertensive drugs prescribed in combination.

RESULT & DISCUSSION:

Analysis was done among the 125 patients. Out of which 82(65.6%) were male and 43(34.4%) were female patients, and 42(33.6%) were aged between 51-60 years. Out of 125 patients 79(63.2%) patients were from rural area and 46(36.8%) people from urban area and it was mostly found in illiterates with 72% and followed by secondary school, intermediate with 24%, we have found that unemployed are mostly with 64 (51.2%) and employed are 30 (24%) and self-employed are 31 (24.8%). Smokers are high with 80(64%) & alcoholic patients are high with 88 (70.4%).

Regarding co-morbidities in agreement with several studies, diabetes mellitus 31 patients with 24.8%, cardiovascular system with 14.4%. Disorders were observed as most common hypertension associated co morbidities. In this study diabetes mellitus was the most common related disorder in patients with hypertension seen in this study. Several research have documented that age, educational, life style and physical exercise, co-occurring, self-awareness about disease progress and target control with effect BP control. Self-management is a key element for the proper management of BP by changing lifestyle.

TABLE: 1Socio demographic details of participants

Variables	Characteristics	No. of patients	Percentage
Sex	Male	82	65.6%
	Female	43	34.4%
Age	Less than 40 years	07	5.6%
	40-50 years	31	24.8%
	51-60 years	42	33.6%
	61-70 years	31	24.8%
	Above 70 years	14	11.2%
Living status	Rural	79	63.2%
	Urban	46	36.8%
Educational status	Educated	35	28%
	Uneducated	90	72%
Occupational status	employed	30	24%
	unemployed	64	51.2%
	Self employed	31	24.8%
Social habits (Smoking)	Smokers	80	64%
	Non-smokers	45	36%
Alcoholic consumption	Alcoholic	88	70.4%
	Non-alcoholic	37	29.6%

TABLE 2: Prevalence of hypertension based on monotherapy

Drug regimen	Drugs prescribed to no. of patients	Percentage%
TELMISARTAN (ARB)	40	32%
NIFEDIPINE(CCB)	4	3.2%
AMLODIPINE(CCB)	8	6.4%
METOPROLOL (β B)	10	8%
ATENOLOL (β B)	2	1.6%
PROLOMET(β B)	6	4.8%

ENALAPRIL(ACE)	2	1.6%
PERINDOPRIL (ACE)	2	1.6%
NICORANDIL (VASODILATORS)	9	7.2%

TABLE 3: Prevalence of hypertension based on dual therapy

Drug regimen	Drugs prescribed to no. of patients	Percentage%
TELMISARTAN+AMLODIPINE	9	7.2%
TELMISARTAN+DYTORPLUS	4	3.2%
CHLORTHALIDONE&TELMISARTAN +METOPROLOL	1	0.8%
DYTORPLUS+SILDENAFIL	1	0.8%
PRazosinHCL+CILNIDIPINE& NEBIPOLOL	1	0.8%
TELMISARTAN+PROLOMET	2	1.6%
NIFEDIPINE+PROLOMET	1	0.8%
METOPROLOL+DYTORPLUS	6	4.8%
AMLODIPINE+ATENOLOL	4	3.2%
DYTORPLUS+NICORANDIL	2	1.6%
METOPROLOL+NICORANDIL	1	0.8%
METOPROLOL+TELMISARTAN	2	1.6%
OLMESARTAN+ AMLODIPINE	1	0.8%

TABLE 4: Prevalence of hypertension based on triple therapy

Drugs& Regimen	Drugs Prescribed to no. of patients	Percentage%
AMLODIPINE+METOPROLOL+MOXONIDINE	1	0.8%
TELMISARTAN+ DYTORPLUS+ CINOD	1	0.8%
SILDENAFIL+DYTORPLUS+ CARVEDILOL	1	0.8%
NICORANDIL+ RAMIPRIL+DYTORPLUS	1	0.8%
METOPROLOL+ LISINOPRIL+ HYDROCHLOTHIAZIDE	1	0.8%
TELMISARTAN+ DYTORPLUS+ NICORANDIL	1	0.8%
METOPROLOL+ AMLODIPINE+ PROZOSIN HCL	1	0.8%

DISCUSSION:

The study population of 125 subjects comprised of 82 males & 43 females. The age group between 51-60 i.e. 42 patients were observed with hypertension. So above 40 age group are highly prevalent to hypertension.

The prevalence of hypertension is more in male patients are 82 with 65.6% when compared to female patients are 43 with 34.4%. Males are highly prevalent to hypertension due to lack of primary life style.

Hypertension in rural area accounted 79 patients with 63.2% whereas from urban area were about 46 patients with 36.8%. Rural area people were highly exposed to hypertension due to lack of awareness about stress management.

Most of the patients found to be illiterate i.e. 90 with 72% & literate patients were found to be 35 with 28%. Illiterate is highly pronoun to hypertension due to lack of awareness about hypertension.

In this study we have found that mostly 64 patients are unemployed with 51.2%, and 30 patients are employed with 24% & 31 patients are self-employed with 24.8% due to improper life style management.

we have found that non-smokers are 45 with 36% & smokers are 80 with 64%. From the obtained data smoking is more influence factor for the hypertension.

Alcoholic patients are maximum with 88 patients (70.4%) whereas non-alcoholic patients are 37 with 29.6%. So, alcohol consumption influences the hypertension.

The most frequently used monotherapy drug for hypertension is telmisartan (ARB) 32% & followed by metoprolol with 8%. Whereas the mostly used dual therapy drug for hypertension is telmisartan along with amlodipine 7.2% and triple drugs combination with 0.8%.

Comorbidities of hypertension found to be diabetes mellitus with 24.8%, CVS with 14.4%, angina pectoris with 4.8% & COPD with 3.2%.

CONCLUSION:

This study concludes that hypertension is more prevalent in males than in females, with its prevalence increase with age. Angiotensin receptor blockers are the most frequently prescribed classes of drugs alone or in combination, supporting the medication adherence to JNC [Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure] guidelines. Since the prevalence of hypertension depends up on genetic, environmental and physiological factors. So, by reducing consumption of alcohol and cigarette and physical activity maintaining & diet management. we can maintain the optimum blood pressure without medication.

ACKNOWLEDGEMENT:

We thank our guide Dr. N. Siva Subramanian, management and faculty of Gland Institute of Pharmaceutical Sciences, we are thankful to the physicians of Malla Reddy Narayana Multi-Speciality Hospital for allowing us to collect the data from the patients.

CONFLICTING INTREST: No potential conflicts of interest were identified for this article.

REFERENCE:

1. Bipin B panda, Manasa R Pati, Pratap K Sahu. Survey of prescription pattern of anti-hypertensive drugs in hypertensive & diabetic hypertensive patients. Asian Journal of Pharmaceutical and Clinical Research, Vol 8, issue 1, 2015. https://www.researchgate.net/publication/274732946_Survey_of_prescription_pattern_of_antihypertensive_drugs_in_hypertensive_and_diabetic_hypertensive_patients
2. Krishna murti, M. Arif khan, Akalanka Dey, Manoj Kumar Sethi, Pradeep Das and Krishna Pandey. prescription pattern of anti-hypertensive drugs in adherence to JNC-7 Guidelines 2015. American Journal of Pharmacology and Toxicology DOI: <https://doi.org/10.3844/ajtpsp.2015.27.31>
3. Sharad kumar , Ashish bedi, Arunkumar, Sheetal singhtomer. Prescription pattern of anti-hypertensive drugs. International Journal of Pharma Professional's Research. (2024) Vol 15, issue 1 January, (88). <https://www.researchgate.net/publication/320691508>
4. Sneha Rawat, Praveen kumar Ashok, Reetu Papola. A review article on hypertension. 2023 IJNRD Volume 8, issue 9 september 2023, ISSN: 2456-4184, International Journal of Novel Research and Development ORG.: <https://ijnrd.org/papers/IJNRD2309090.pdf>
5. Yousufuddinali khan, Mohammed Abdul Rahman, Sibgatullah Md. Prescription pattern of anti-hypertensive drugs in an urban locality of Hyderabad, Telangana, International Journal of Recent Trends in Science and Technology. 13 November 2014, 13(1): 114-116. WWW.statperson.com
6. Gita Paudel, Sirisa Karki, Karma Murti Bhurtyal, Lokeshwar Chaurasia. Prescription pattern of anti-hypertensive drugs in Chitwan medical college hospital, Janaki Medical College Journal of Medical Sciences (2021): Vol,9 (1): 41-46. DOI: <https://doi.org/10.3126/jmcjms.v9i1.38325>
7. Supriya Selvakumar Suseela, Suhaina Abdul Samath, Reneega Gangadhar, G. agnes Golda Priyadarshini. Prescription pattern of anti-hypertensive drugs and its adherence to JNC-8 Gudilines. Journal of Academic

Medicine and Pharmacy 2022. WWW.academicmed.org ISSN (O): 2687-5365: ISSN (P): 2753-6556. (615-618).

8. Prasanth CH, Satish Kumar V, AkhilaM, Swathi V. Prescribing pattern and pharmacoeconomic evaluation of anti-hypertensive drugs at a tertiary care hospital. 2018 Journal of Basic and Clinical Pharmacy: Vol 9, Issue 2, Mar-May, 2018: www.jbclinpharm.org
9. Rachana PR, Anuradha HV, MC Shiva Murthy. Anti-hypertensive prescribing patterns and cost analysis for primary hypertension: A Retrospective study, Journal of Clinical & Diagnostic Research, 2014 sep, Vol-8(9): HC 19-HC22.
DOI: 10. 7860/JCDR/2014/9567,4890
10. Ethiraj Dhanaraj, Amit Raval, RajbhARAN Yadav, Anil Bhansali, and Pramil Tiwari. Prescription pattern of anti-hypertensive agents in T2DM Patients visitng tertiary care centre. Volume :2012, article ID 520915, (9) International Journal of Hypertension.
DOI:10.1155/2012/520915

