Original Article

Utility of Antihypertensive Drugs in HTN with IHD in a Tertiary Care Hospital

Ajmery S [1], Kabir A [2]

1. **Dr. Suny Ajmery, Associate Professor, Department of Pharmacology, Jahurul Islam Medical College. .*
2. *Dr. Anamul Kabir, Associate Professor, Department of Anatomy, Jahurul Islam Medical College.*

**** For Correspondence***

Abstract

Objective: *The present study was conducted to see the use of antihypertensive drugs in* HTN with IHD *in a tertiary care hospital.*

Methods: *It was an observational type of descriptive cross-sectional study. The study was performed among 204 hypertensive patients (both indoor and outdoor) of Cardiology department in MMCH who received antihypertensive drug.*

Results: *Among 204 HTN with IHD patients 84 (41.18%) received monotherapy and 120 (58.82%) received combination therapy. Among the monotherapy most patients 29 (14.22%) received ACEI, 25 (12.25%) Diuretics, 17 (8.33%) BB, 10 (4.90%) ARB and 03 patients (1.47%) received CCB. Among the combination therapy ACEI+Diuretics used in highest no. and percentage that is 42 (20.59%) followed by ACEI+BB, ACEI+BB+Diuretics, ARB+Diuretics, BB+Diuretics which are used in 22 (10.78%), 16 (7.84%), 16 (7.84%), 10 (4.90%) respectively.*

Keywords: HTN with IHD*, Antihypertensive drugs*

Introduction

Hypertension is an important risk factors for cardiovascular accidents, coronary heart disease and cardiac hypertrophy with heart failure, aortic dissection and renal failure [1]. The worldwide burden of hypertension in 2000 was estimated to be 972 million or 26.4% of the adult world population, 333 million in economically developed and 639 million in economically developing countries. Hypertension is the commonest preventable cause of cardiovascular disease in the world [2]. It tends to be familial and the prevalence of essential hypertension increases with age and individuals with relatively high blood pressure at young ages are at increased risk for the subsequent development of hypertension [3]. Hypertension is an important risk factors for cardiovascular accidents, coronary heart disease and

cardiac hypertrophy with heart failure, aortic dissection and renal failure [1].

Hypertension places trace on several target organs including the kidneys, heart, eyes causing them to deteriorate over time. High blood pressure contributes to 75% of all strokes and heart attacks. Other risk factors combined with significantly high blood pressure can increase the likelihood of complications. These risk factors included increasing age, smoking, abnormal cholesterol levels, family history of premature heart disease, obesity, diabetes, coronary artery disease or other evidence of vascular disease [4]. Heart diseases are major causes of death worldwide. The World Health Organization reported that the global numbers of death caused by cardiovascular diseases are increasing every year. This is especially critical in developing counties which have increased from 14 to 25 million for 1990 to 2020, respectively. Ischemic heart disease (IHD) is considered to be a foremost disorder of the heart. It is a disease affected by long-term deficiency of oxygen and nutrient of the cardiac muscle due to inadequate supply of blood circulation. This may lead to cardiac tissue damage and cause sudden cardiac death as a consequence of heart attack [5]. Management of hypertension is an important step to decrease the mortality and morbidity of cardiovascular disease and to prevent uncontrolled complications [6]. In hypertensive patients with ischemic heart disease (IHD), the JNC 7th report recommended the use of beta blockers (BB) unless contraindicated. If BB therapy was inadequate or contraindicated, either long acting dihydropyridine or nondihydropyridine type calcium channel blockers (CCB) may be used [7]. Changes over time in terms of recommended guidelines and innovation in drug formulations have resulted in modification to the prescription patterns of antihypertensive drugs. Medical audit improves the standards of medical treatment at all levels of health care delivery system [1].

Methods

This study was a record based observational type of descriptive cross-sectional study was conducted for a period of 2 months from March 2016 to April 2016 in Cardiology department of Mymensingh Medical College Hospital, Mymensingh. 204 patients were collected from both indoor and outdoor. This study includes hospital In-patients and Out-patients with hypertension with IHD treated for hypertension at Cardiology department. The inclusion criteria were: Patient with the age group ≥18 years, hypertension with ischemic heart disease. Exclusion criteria were: patients with disease like hepatic disease and pregnancy. Non-Random sampling was employed for collecting data. The entire relevant data were analyzed with the aid of Statistical Package for Social Sciences (SPSS) version 21 software to generate descriptive statistics. The data collected was analyzed with frequency, simple percentage, mean and standard deviation. The results presented in texts, tables and figures.

Observations and Results

Out of 204 HTN with IHD patients 84 (41.18%) received monotherapy and 120 (58.82%) received combination therapy. Among the monotherapy most patients 29 (14.22%) received ACEI, 25 (12.25%) Diuretics, 17 (8.33%) BB, 10 (4.90%) ARB and 03 patients (1.47%) received CCB. Among the combination therapy ACEI+Diuretics used in highest no. and percentage that is 42 (20.59%) followed by ACEI+BB, ACEI+BB+Diuretics, ARB+Diuretics, BB+Diuretics which are used in 22 (10.78%), 16 (7.84%), 16 (7.84%), 10 (4.90%) respectively.

Table I: Drug used in HTN with IHD:

Drugs used in HTN+IHD		Frequency	Percentage
Monotherapy	ACEI	29	14.22
	Diuretics	25	12.25
	BB	17	8.33
	ARB	10	4.90
	CCB	03	1.47
	Total	**84**	**41.18**
Combination Therapy	ACEI+Diuretics	42	20.59
	ACEI+BB	22	10.78
	ACEI+BB+Diuretics	16	7.84
	ARB+Diuretics	16	7.84
	BB+Diuretics	10	4.90
	ARB+BB	04	1.96
	CCB+ARB+Diuretics	03	1.47
	CCB+ARB+BB	02	0.98
	CCB+BB+Diuretics	02	0.98
	CCB+ARB	01	0.49
	CCB+BB	01	0.49
	CCB+Diuretics	01	0.49
	Total	**120**	**58.82**
Total		**204**	**100**

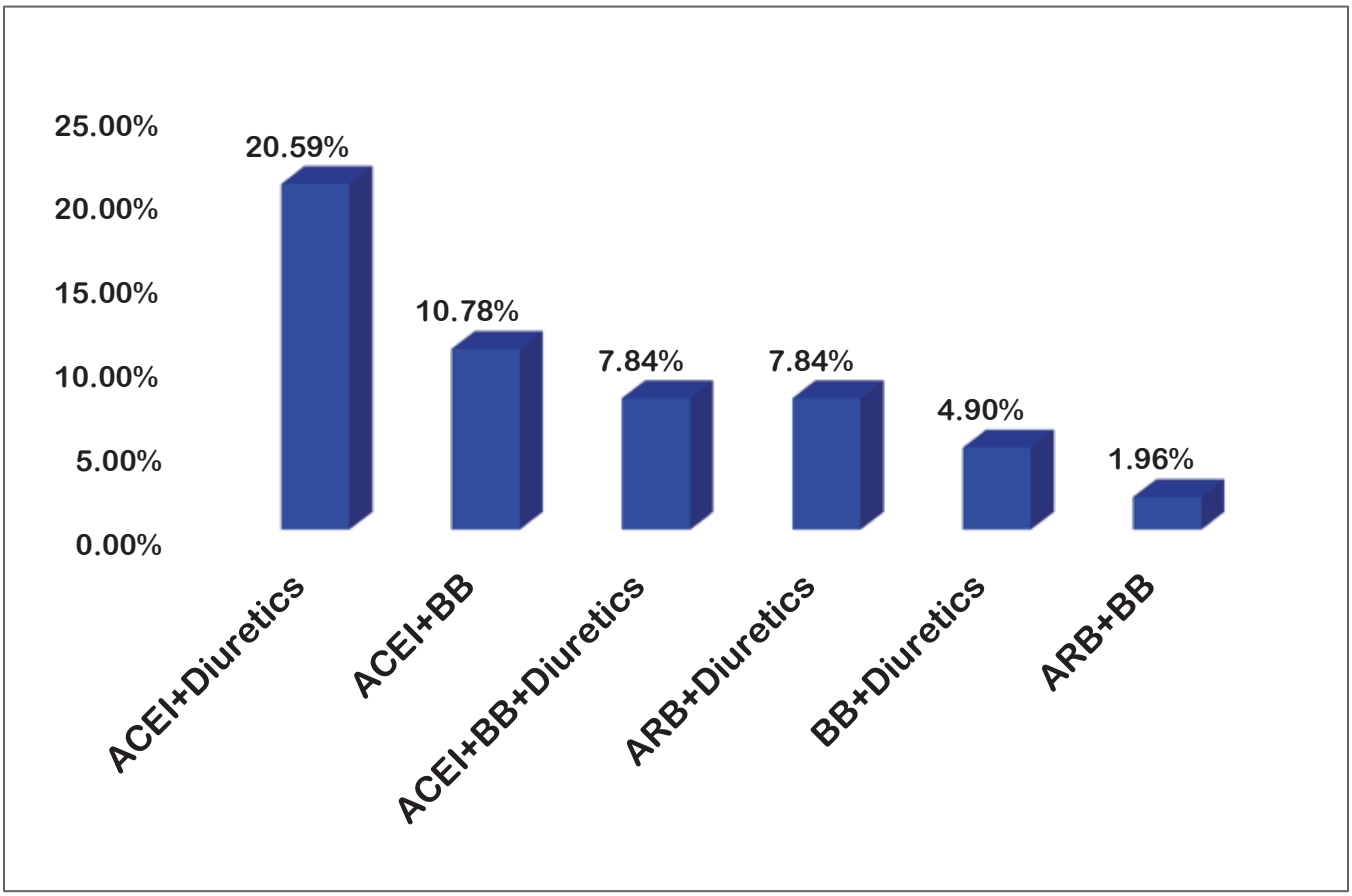

Figure 1: Bar diagram showing drugs used in HTN with IHD as combination therapy.

Discussion

The study was conducted during the period of March 2016 to April 2016 in the department of Cardiology, Mymensingh Medical College Hospital, Mymensingh to evaluate the use of antihypertensive in hypertension with ischemic heart disease and at Cardiology Department. It was an observational type of descriptive cross sectional study.

In this study the prevalence of hypertension was seen more in male (67%) than their female counterparts (33%) which corresponds to the findings of other studies [1].

In this study among 204 HTN with IHD patients 41.18% received monotherapy of which ACEI (14.22%) and Diuretics (12.25%) were prescribed most frequently which supported a study where monotherapy was acconunted for 41.3% and ACEI was the most commonly (22.9%) prescribed drug class as monotherapy [7].

In this study combination therapy was used for 58.82%. Among them ACEI+Diuretics used in highest no. and percentage that is 42 (20.59%) followed by ACEI+BB (10.78%), ACEI+BB+Diuretics (7.84%) which was similar to a study done by Waleed et al. 2008 who found maximum (48.6%) patients were on combination therapy and ACE-I was the most commonly (62.5%) prescribed drug in combination therapy in this group [7].

Conclusion

Hypertension plays a major etiologic role in the development of cerebrovascular disease, ischemic heart disease, cardiac and renal failure. Treating hypertension has been associated with about a 40% reduction in the risk of stroke and about a 15% reduction in the risk of myocardial infarction. In our study in HTN with IHD patients' combination therapy was prescribed more than monotherapy. ACEI was the commonly prescribed monotherapy and ACEI+Diuretics was the frequently prescribed combination therapy.

References

1. Joseph S, Varghese N & Thomas L. A study on prescribing pattern of antihypertensive medications in a tertiary care hospital in Malabar region. Der Pharmacia Lettre. 2014;6(4): 132-7.

2. Adebayo AM, Rotkangmwa OC & Shalkur D. Hypertension related practices and compliance to anti-hypertensive therapy among hypertensive patients in tertiary health care facilities in Jos, North-Central Nigeria. World Journal of Pharmaceutical Sciences. 2015;3(6):1151-8.

3. Konwar M, Paul PK & Das S. Prescribing pattern of antihypertensive drugs in essential hypertension in medicine out patients department in a tertiary care hospital. Asian journal of Pharmaceutical and Clinical Research. 2014;7(2):142-4.

4. Kasi, J, M & Uday, K, R. Assessment of prescription pattern associated with antihypertensive treatment at tertiary care teaching hospital in central Karnataka. *International Journal of Science and Research*. 2014;3(9):1481-3.

5. Kangwanariyakul, Y, Nantasenamat, C, Tantimongcolwat, T, Naenna, T. Data Mining Of Magnetocardiograms For Prediction Of Ischemic Heart Disease. *EXCLI Journal.* 2010;9:82-95.

6. Pushpalatha C, Laxman RN & Mohsin M. Prescription pattern of antihypertensives in cardiology unit at tertiary care hospital. Journal of Chalmeda Anand Rao Institute of Medical Sciences. 2014;8(2):92-5.

7. Waleed, M, S, Ansam, F, Samah, W, Eman, J, T & SHRAIM, N, Y. Evaluation of antihypertensive therapy in diabetic hypertensive patients: impact of ischemic heart disease. available from: *www.pharmacypractice.org*. 2009;7(1):40-6.