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ASSESSMENT OF PRESCRIBING PATTERN FOR HYPERTENSION IN COMPARISON WITH JNC 8 GUIDELINES

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ABSTRACT

Objectives: To carry out the study on prescribing pattern of antihypertensive drugs in comparison with JNC 8 guidelines. To analyse utilization of different types of antihypertensive drugs used in co-morbid conditions with JNC 8 guidelines. **Materials and Methods:** A prospective, observational study was carried out in 130 inpatients of general medicine department over a period of six months at a tertiary care teaching hospital. A data entry form was specially designed for the collection of data. Recently published JNC guidelines (JNC 8) recommendations were followed for assessing the prescribing pattern and appropriateness of the antihypertensive drugs prescribed. **Results:** Out of 130 inpatients, 47% were Males and 53% were Females. In this study the age groups are taken as 64 years and below and 65years and above. The classes of drug which are used for managing hypertensive cases and along with it associated co-morbidity are as follows, arranging in descending order; CCB(39.7%) followed by ARBs(35%), beta-blockers(14.3%), diuretics(10.6%) and ACEI(0.4%). **Conclusion:** The most common drug classes included in the study was calcium channel blockers followed by ARBs. Both mono therapy and combination therapy were followed. Prescribing patterns among antihypertensive drugs shows some irrationalities to the existing evidence based JNC 8 guidelines.

KEYWORDS: Hypertension, co-morbidities, combination therapy, JNC 8 guidelines.

INTRODUCTION

Hypertension, also known as high blood pressure, is a chronic medical condition in which the blood pressure in the arteries is persistently elevated. It usually asymptomatic, making it difficult to ascertained. However, it is a major risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss and chronic kidney disease. It is classified as either primary hypertension or secondary hypertension. About 90–95% of cases are primary, defined as high blood pressure due to nonspecific lifestyle and genetic factors The remaining 5–10% of cases are categorized as secondary high blood pressure, defined as high blood pressure due to an identifiable cause such as chronic kidney disease, narrowing of the kidney arteries, an endocrine disorders, or uses of birth control pills.[1,2]

Lifestyle changes and medications can lower blood pressure and decrease the risk of health complications. Lifestyle changes include weight loss, decreased salt intake, physical exercise, and a healthy diet. The DASH diet eating plan has been proved to lower blood pressure in studies sponsored by the National Institute of Health. The DASH plan incorporated more fruits and vegetables, low fat or non- fat diary, beans and nuts than the others studied.[3]

The JNC 8 guidelines published in 2014 are the most recent guidelines for the management of hypertension in different clinical settings. The available guidelines recommend different goal BP levels and drug treatment options according to patient's individual clinical need**.** Unlike the JNC 7 guidelines, JNC 8 guidelines do not focus on the definition of hypertension and pre hypertension. Instead it aims to define thresholds for pharmacological treatment.[4]

The panel members appointed to the Eighth Joint National Committee (JNC 8) used rigorous evidence-based methods, developing Evidence Statements and recommendations for blood pressure (BP) treatment based on a systematic review of the literature to meet user needs, especially the needs of the primary care clinician.[5]

MATERIALS AND METHODS

A prospective observational study was carried out in 130 in-patients for a period of 6 months from April 2016 to September 2016 in Navodaya Medical College Hospital and Research Center, Raichur.

Newly diagnosed and known cases of hypertension with co-morbidities who were receiving anti-hypertensive were included in the study. Pregnant women, children

and out-patients were excluded from the study. The study was approved by Institutional Ethics Committee (IEC) of the hospital.

Total prescriptions written by qualified medical graduate and post graduate doctors were collected randomly from the general medicine department and examined to record information about prescribing indicators using a predesigned form. CIMS drug manual was used to decode the brand name of drugs to generic names for the purpose of analysis. Study ward was visited daily as per schedule. Direct interactions with patients were also done to comply the data needed.

The data collected from the prescriptions were properly noted in a separate data collection form. The data collected are corps in the following pattern, such as segregation of prescriptions in terms of ages and genders, total number of drugs prescribed, generic drug usage, dates of administration, common complaints about the drugs and systemic diagnosis of their first line therapy. Descriptive statistics were used to summarize the results. Frequency and percentages were used to describe variables.

RESULTS AND DISCUSSION

The study conducted in 130 patients shows that the distribution of hypertension based on genders is more predominant in female patients than male patients with a percentage of 53% and 47% respectively, as shown in fig.1.

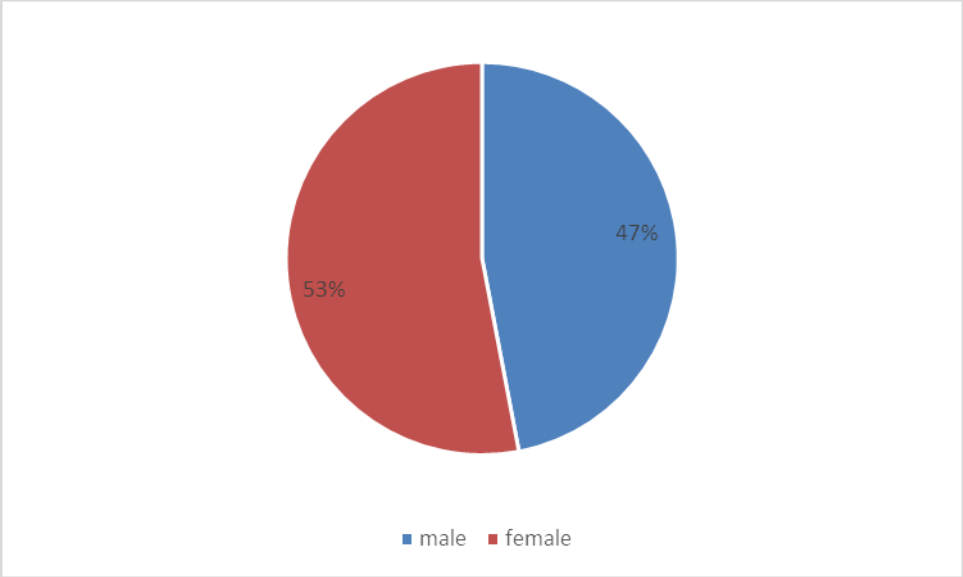

Fig. 1: Distribution according to gender (n=130).

Out of 130 hypertensive patients, 55 patients are singly hypertensive, 26 are associated with DM, 12 are associated with CKD and 37 are accompanied with others co-morbidities which is illustrated in fig.2.

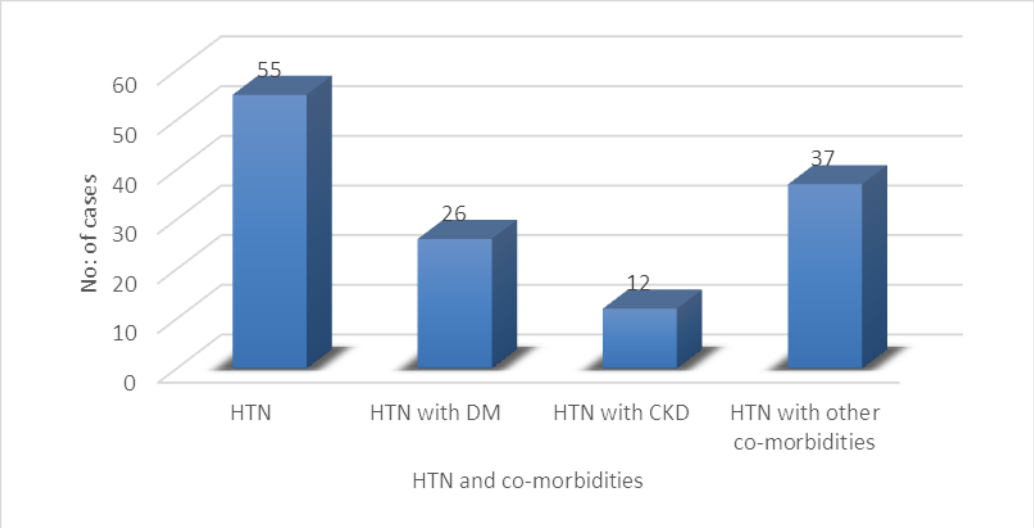

Fig. 2: Hypertension and its co-morbidities (n=130).

As shown in fig.3, among 130 study population, mono therapy were the most commonly used mode of therapy accounting with 77(59%) followed by two drugs therapy with 47(37%) and three drugs therapy with 6(4%). Similar results were obtained by the study conducted by Sikidar P et al.[6]

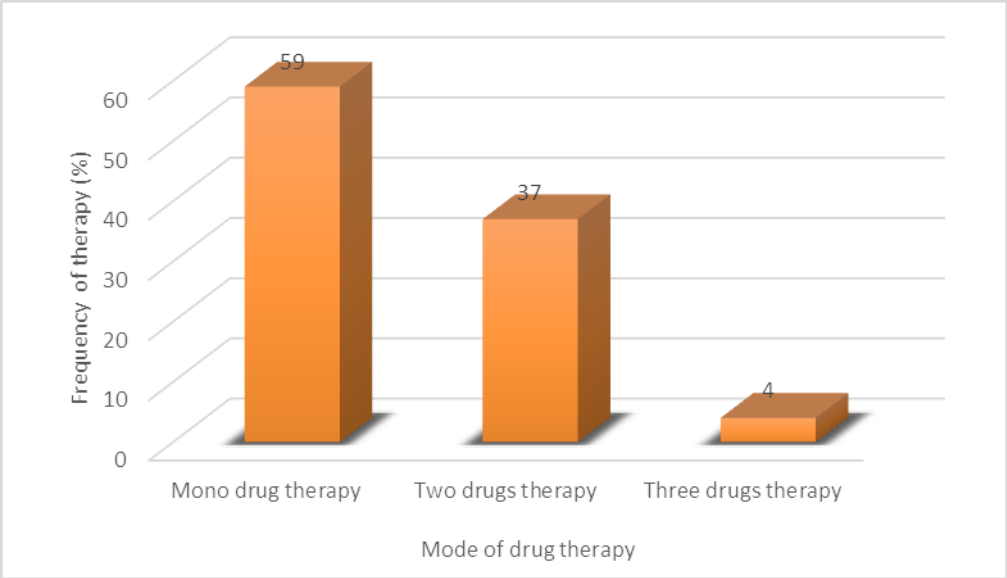

Fig. 3: Mode of drug therapy (n=130).

As shown in fig 4, out of 130 patients, 26 patients are diagnosed with hypertension with DM, a total number of 48 drugs were prescribed. Among these, it was observed that CCB 20(41.7%) were the most prescribed drug followed by ARB 12(25%), diuretics 8(16.6%), beta blockers 7(14.6%) and ACE inhibitors 1(2.1%) which is similar to the study conducted by Dahal P et al and Konwar M.[7,8]

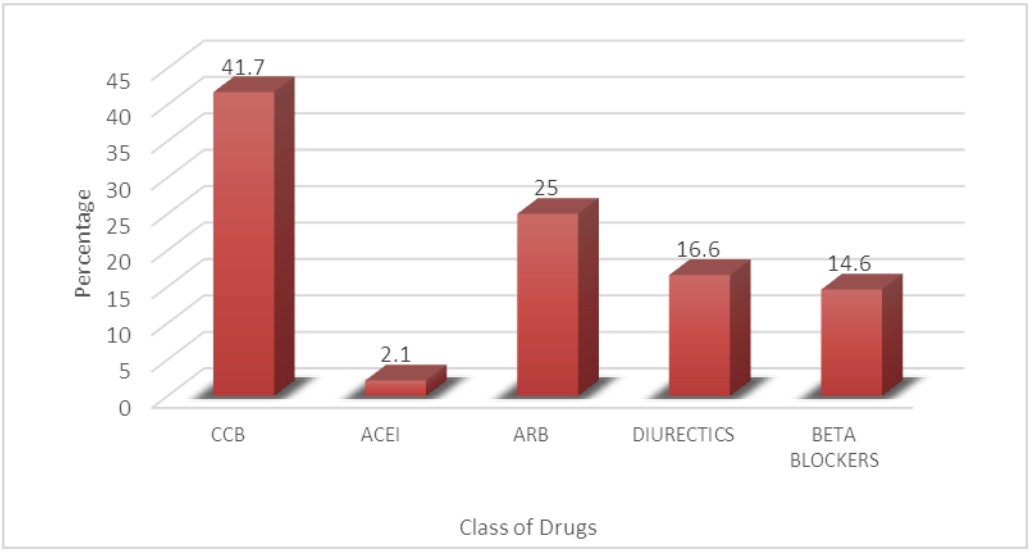

Fig. 4: Hypertension with DM management.

Out of 130 patients, 12 patients were diagnosed with hypertension with CKD, a total number of 21 drugs were prescribed. Among these, it is observed that CCBs 10 (47.7%) were the most prescribed drug followed by diuretics 8 (38.1%), beta blockers 2 (9.5%) and ARBs 1 (4.7%) as shown in fig.5.

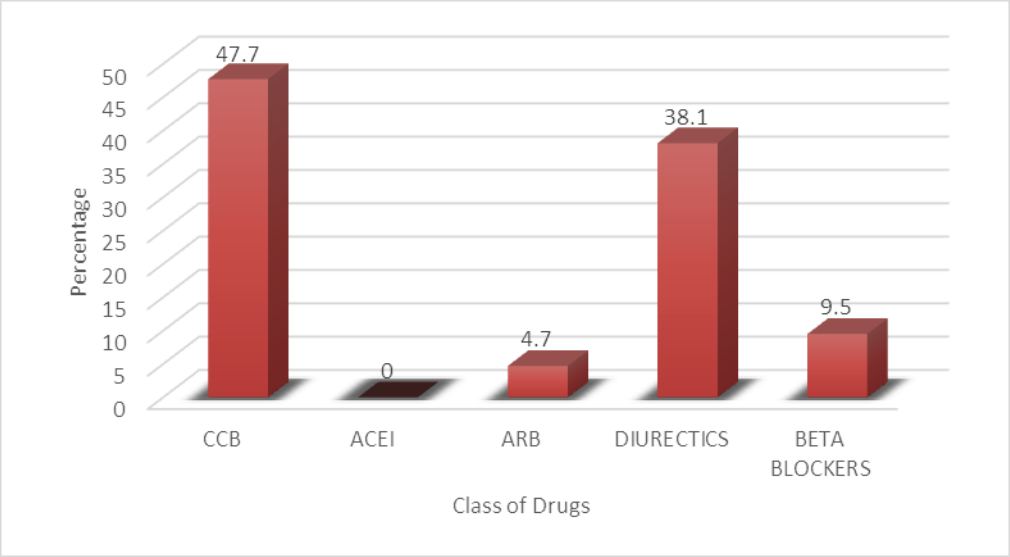

Fig. 5: Hypertension with CKD management.

Summing the percentage of all drugs prescribed in this study of 130 cases, it was ascertained that CCB 86(39.7%) were mostly prescribed, followed by ARBs 76(35%), beta blockers 31(14.3%), diuretics 23 (10.6%) and ACEIs 01 (0.4%) as shown in fig.6, which is similar to the study conducted by Konwar M et al.[8]

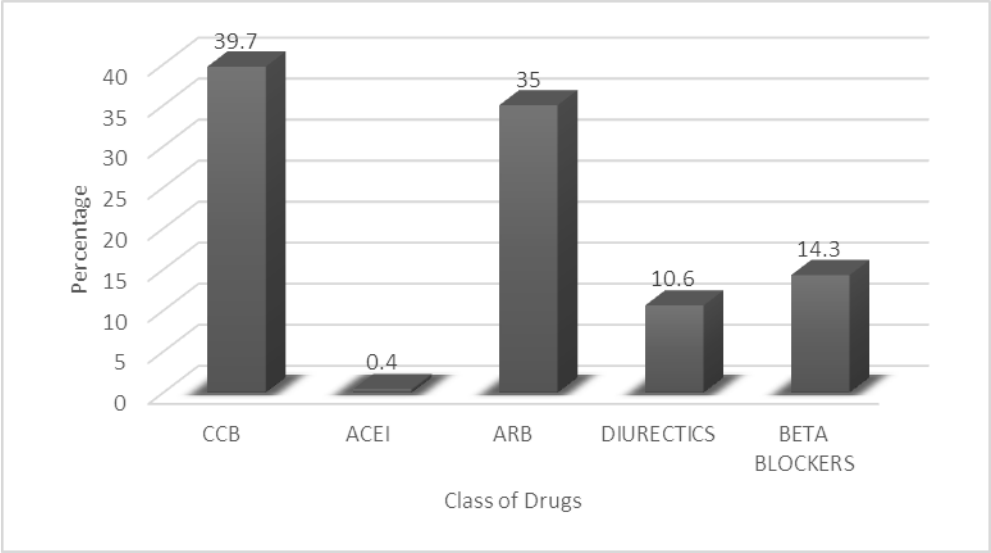

Fig. 6: Drug class given.

CONCLUSION

The most common drug classes included in the study was calcium channel blockers followed by ARBs. The mode of therapy mostly preferred in the study was mono therapy followed by two drugs therapy and three drugs therapy. Prescribing patterns among antihypertensive drugs shows some irrationalities to the existing evidence based JNC 8 guidelines, as ACEIs/ARBs were not included in the initial therapy, for the management of hypertension with CKD.

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