

Study of Therapeutic Patterns of Anti- Hypertensive Drugs for Elderly in Al- Ramadi City

Hameed I. Ali Al-Zagroot¹

Abstract

Objectives: Is to study the prescribing patterns of antihypertensive drugs in elderly patients.

Patients and Methods: 420 elderly hypertensive patients were studied in the out patient clinic of Al- Ramadi general hospital from November 2003- June2004. Age, Sex, and types of antihypertensive drugs they use were recorded, classified and the percentage of each drug was calculated.

Results: Total number of patients was 420, with a mean age of 71 ± 5.2 Ys. 200 patients were on monotherapy, 220 patients were on more than one drug. The commonest antihypertensive drug group prescribed was angiotensine converting enzyme (ACE) inhibitors (31%), than diuretics (24%) then β -blockers (21%) while calcium channels blockers (CCBs) (17%) and (7%) for other groups. The commonest combination therapy was ACE inhibitors and diuretics (31% of the combined prescriptions).

Conclusion: Our prescribing patterns do not confirm to the regimens published in the most recent medical articles and recommendations. We have to emphasize the use of diuretics as first line treatment for elderly hypertensive patients while other groups as second line treatment.

Key words: Therapeutic Patterns, Elderly, Hypertension

<http://doi.org/10.33091/AMJ.1000812010>

¹ (F.I.C.M.S), College of Medicine\ University of Al-Anbar

Introduction

Hypertension is common in elderly patients. It is one of the reversible risk factor for cardiovascular complications such as myocardial infarction and stroke⁽¹⁾. It is a common reasons to visit a physician and to receive medication.

Elderly patients are particularly vulnerable and are at high risk of suffering adverse drug reactions. This increased vulnerability is caused by lower reserve capacity and slower haemostatic responses, in addition to the age related changes in drug distribution and clearance in the body⁽²⁾.

On these bases, it demands a good insight into physicians drug prescribing patterns which is a fundamental first step in trying is to improve the quality of prescriptions and to control the disease and to prevent its complications⁽²⁾.

About half of patients with hypertension will respond to monotherapy with a low to moderate dose of the many available anti-hypertensive agents^(3,4). In spite of the many anti-hypertensive agents available, diuretics and β -blockers are the only drugs that had been shown in a randomized controlled trials to prevent the long term consequences of essential hypertension⁽⁵⁾.

Such a data about CCBs and ACE inhibitors has not been studied adequately⁽⁵⁾.

Aim of the study

Is to study the physicians prescribing patterns for elderly hypertensive with a comparison with other studies.

Patients and Methods

Patients with hypertension whose age is ≥ 65 Ys who visited the out-patient clinic in Al-Ramadi General Hospital for follow up or other complaints where included in this study during the period from Nov. 2003- June 2004. A questionnaire form was filled which contains sex, age and types of anti-hypertensive drugs they use. The prescribed anti- hypertensive drugs were classified into the following groups:

1. Thiazides and other diuretics.
2. B-adrenergic blockers.
3. Calcium channels blockers CCBs.
4. Angiotensiine converting enzyme ACE inhibitors.
5. Others.

Then the results obtained were studied, the percentage of prescribed drug groups and combination groups were calculated.

Results

The total number of patients was 420. 311 (74%) of them were males and 109 (26%) were females. The mean age was 71 ± 5.2 Y.s as in table (I).

The study showed that 200 patients were on monotherapy and 220 were on more than one drug. The study also showed that ACE inhibitors were the commonest prescribed agents (31% of the total prescriptions). Diuretics account for 24%, β -blockers 21%, CCBs 17% and 7% of the total prescriptions was for other antihypertensive drug groups as in table (II).

The study also revealed that highest percentage of combination therapy prescribed was ACE inhibitors + diuretics (31%) as listed in table (III).

Table (I): Total number and percentage of hypertensive patients according to sex

Type of patients	Number of Patients	Percentage %
Males	311	74%
Females	109	26%
Total Number	420	100%

Table (II): The percentage of patients using antihypertensive drugs groups and their number of prescriptions

Antihypertensive Drug Groups	Percentage of Patients	Number of Prescriptions
ACE inhibitors	31%	213
Diuretics	24%	166
B-blockers	17%	145
CCBs	17%	117
Other drug groups	7%	49

Table (III): The common combinations of anti- hypertensive drugs used and their percentage

Anti-hypertensive drugs combinations	Number of patients	Percentage of prescriptions
ACE inhibitors + Diuretics	68	31%
ACE inhibitors + β -blockers	57	26%
Diuretics + β -blockers	36	16%
CCBs + other anti- hypertensive drugs	33	15%
Other various combinations	26	12%
Total	220	100%

Discussion

The choice of anti-hypertensive agent is determined by its efficacy, side effects and cost. This is a topic of controversy due to a variety of reasons including the development of new drugs with a real or perceived advantages over existing agents and the lack of morbidity and mortality for the newer agents⁽⁴⁾.

In this study the most commonly prescribed agents were the ACE inhibitors (31%) followed by diuretics (24%), β -blockers (20%) CCBs (17%) and (7%) of prescriptions for other drugs. These results showed some differences with Monane et. al study⁽⁵⁾ which showed at year 1988 that diuretics were the most commonly prescribed agents (33%), then CCBs (28%), ACE inhibitors (16%). This difference may be due to our patients characteristics which are important determinants of physicians choice of the antihypertensive therapy and probably our old patients do not prefer the use of diuretics.

In our study the most widely prescribed drug groups were the ACE inhibitors which is different from what is recommended for elderly hypertensive patients in the most recent literatures and recommendations. L. Mori et. al (2005)⁽⁶⁾ recommended that a low dose of thiazide diuretic remains the first line therapy of elderly patients while β -blockers, ACE inhibitors, ARBs and CCBs are second line medications and their selection is based on comorbidities and risk factors⁽⁶⁾. This may be explained by the tendency of our doctors towards the prescription of the recently introduced and more expensive drugs like ACE inhibitors.

The percentage of prescription of CCBs in our study is accepted since a study on CCBs had recommended their use in salt sensitive patients blacks⁽⁷⁾.

The percentage of combination of diuretics and β -blockers was 16%. This is considered low since clinical trials had shown that β -blockers reduce cardiovascular morbidity and mortality when used in combination with diuretics and they are considered an effective first line treatment for elderly hypertensive patients when used in combination with diuretics⁽⁸⁾. In our country the cost of drugs does not constitute a problem in determination the patterns of prescription and there is no awareness about this problem because in our country the antihypertensive drugs are dispensed from health centers and general hospitals but in other countries, this is an important factor in drug prescription and several major investigations on treatment of hypertension had shown that propranolol and hydrochlor- thiazide are the most cost effective regimen comparing to other drugs⁽⁹⁾.

Generally the prescribing patterns we had documented in this study do not confirm in many situations to the above mentioned clinical trials and recent recommendations. This may be explained on the bases of non availability of drugs and part of the prescription is by general practitioners, in addition to the low standards of medical education of some of our doctors for updated and recent advances in antihypertensive drugs.

Recommendations

1. To encourage the use of diuretics (thiazides) and to align our prescription patterns with the more recent indications for specific antihypertensive drugs mentioned and recommended by the 7th report of the Joint National Committee (JNC) on prevention, detection, evaluation of high blood pressure (2003) which had recommended diuretics for most elderly hypertensive patients and to consider β -blockers, ACE inhibitors, CCBs and ARBs as second line medication and

- their selection is based on comorbidities and risk factors⁽¹⁰⁾.
2. To encourage the non pharmacological measures to control hypertension like weight reduction, sodium intake restriction and modification of life style, which is a first step in controlling BP^(11, 12).
 3. Another recommendation to our doctors is not to forget that hypokalemia may occur with the use of diuretics and to avoid this patients are either supplied with potassium or addition of potassium sparing diuretics sine S.K. <3.5 meq./ L will lose the cardiovascular protective benefit thiazides⁽¹³⁾.
 4. More wide study including most recent antihypertensive drugs and to compare it with this study.

References

- 1) Aplan N M., The appropriate goals of anti- hypertensive therapy. *Ann intern. Med.*; 116: 686-690. 1992.
- 2) Osterline P. Bucht G.: Drug consumption during the last decade among persons born in 1902 in Umea Sweden,;- 1:477-486 (Medline). 1991.
- 3) Moser M. Controversies in the management of hypertension. *Am. Fam. Physician.*; 41: 1449- 1460 (Medline). 1990.
- 4) Neaton J D. Grim R H. Prineas R. J. et.al. Treatment of mild hypertensions. Study of final results. *JAMA*; 270: 713-724 (Medline). 1993.
- 5) Mark Monane, Robert J., Jerry H., Trends in medicine choices for hypertension. *Hypertension*; 25; 1045- 1051. 1995.
- 6) Lori M. Dickerson and Maria V. Gibson. Management of hypertension in older persons. Downloaded from:- *Am. Fam. Physician*; 71; 469-476. Copy print © 2005 American Academy of family physicians. 2005.
- 7) ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research group. Major outcomes in High risk hypertensive patients randomized to angiotensine converting enzyme inhibitors for Calcium channels blockers vs Diuretic: The Anti- hypertensive and Lipid Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2002; 288: 2981- 97.
- 8) K. Wink, Are β -blockers Efficacious as First Line Therapy for Hypertension in the Elderly. *J. Clin. Basic Cardiol.* 2001; 4: 235-238.
- 9) Applegate W B, Phipps, Schnaper et.al. H. A randomized controlled trail of the effects of three anti-hypertensive agents on the blood pressure control and quality of life in older women. *Arch Intern. Med.* 1991; 151: 1817-1823 (Medline).
- 10) Chobanian A V, Bakris Gi, Black Hr, et.al. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of high Blood Pressure. *Hypertension* 2003; 42: 1206-52.
- 11) Welton P K. Appel L J, Espeland M A. et.al. Sodium reduction and weight loss in treatment of hypertension in older persons: A randomized controlled trial of non pharmacological interventions in the elderly. *JAMA* 1998; 279: 839-46.
- 12) Sacks F M, Svetkey L P, Vollmer W M, et.al. Effects on blood pressure of reduced dietary Sodium and Dietary Approaches to Stop Hypertension (DASH) diet. *New Eng. J. Med.* 2001; 344:3-10.
- 13) Franse L V, Pahor M, Di Bari et.al. Hypokalemia associated diuretic use in cardiovascular events in the Systolic Hypertension in the Elderly programme. *Hypertension* 200; 35: 1025- 30.