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Adverse Drugs Reactions of Antihypertensive Medicines

Prof (Dr) Bishnupriya Mohanty[1], Rishali R Naik[2]

[1]MD (Samhita), PhD (Basic Principle), Professor and Head, Department of Sanskrit Samhita and Siddhanta, Gomantak Ayurveda Mahavidyalaya and Research Centre;Shiroda, Goa. 403103
drbishnupriyadas@gmail.com
[2]Student 4th year BAMS, Gomantak Ayurveda Mahavidyalaya & Research Centre, Shiroda-Goa
tushargovekar008@gmail.com

ABSTRACT

Hypertension is a common condition in which the long-term force of the blood against the artery wall is high enough that it may eventually causes health problems, such as heart disease. There is no complete cure of this condition has been found yet, the only treatment which is presently been used is the lifetime management of the condition by maintaining the normal blood pressure with antihypertensive medicines. This study was done to rule out the adverse drug reaction of the antihypertensive medicines, it was carried out by collecting data of 30 hypertensive patients of age above 40 years. Adverse reaction was sought using the medicine induced symptoms experienced by the patients.

KEY WORDS: Hypertension, Antihypertensive Medicines, Adverse Drug Reaction, Calcium Channel Blockers, Diuretic.

INTRODUCTION

Hypertension is a global disease considered as the leading risk factor for cardiovascular diseases. It is associated with a high morbidity and mortality from increased risks of stroke, ischemic heart disease, renal failure, congestive heart failure, etc.
The use of medicines and other forms of non-pharmacological therapy in treating hypertension has been shown to reduce this morbidity and mortality. There has been a considerable increase in the arsenal of antihypertensive medicines in the past few decades, and their use may be associated with the development of adverse reaction which is likely to result in nonadherence to therapy, increased morbidity and mortality as well as economic consequences. It has also lead to the withdrawal of some of these medicines from use.
Adverse reactions increased frequency is been shown by the factors like number of medicines taken by the patients, patients' genetic disposition, age, exogenous factors such as food and interactions with other medicines.
Some of the most common groups of antihypertensive medicines are diuretics, ACE inhibitors (angiotensin converting enzyme), angiotensin II receptor blockers, calcium channel blocker, alpha and beta blockers. With the commonest adverse reactions shown are excess micturition, headache, dizziness, dry cough, frequent micturition, etc.

AIM OF THE STUDY

This study was aimed to characterize the adverse reaction of the antihypertensive medicines on the certain number of hypertensive patients.

METHODS

The study was carried out by distributing a questionnaire based on assessments and also by self-assessment. This mixed study was carried out on 30 patients in total above 40 years of age, it was carried out at Gomantak Ayurveda Mahavidyalaya and Research Centre; Shiroda, Goa. The patients were classified as being hypertensive.
The main focus of the assessment was on the number of antihypertensive medicines taken, type of medicine used, along with the duration of the disease and any adverse reaction if seen then noted. Other medical history was also noted, the outcome of reactions was noted as well as the action patient took following the adverse reaction. The study was carried out from may2021 to august 2021.

RESULTS

The total of 30 hypertensive patients' data was collected and it showed following results.

Table 1 Number of patients seen in specific age groups.

Age Group (in years)	Number of Patients	Percentage
40-50	7	23.33
51-60	6	20
61-70	6	20
71-80	8	26.67
81 and above	3	0.9

Table 2 Adverse reaction seen in number of patients and other associating medical conditions.

Criteria's	Number of patients(%)
No Adverse Effects Seen	19 (63.33)
Adverse Effects Seen	11 (36.66)
Associating Conditions	
Diabetes	14 (46.66)
Acidity	2
Asthma	2
Joints problems	5

Table 3
Use of number of antihypertensive medicines along with the ADR experience and duration of disease.

No. of antihypertensive medicine	No. of patients (%)	ADR experienced (%)
1	13(43.33)	4(30.67)
2	15(50)	6(40)
3	2(6.66)	1(50)
Only antihypertensive medicine	12(40)	4(33.33)
With other medications	18(60)	8(44.4)

Table 4 Type of antihypertensive group medicines taken by patients.

Type of Medicine Group	Number of patients (%)
Diuretics	6(20)
Calcium channel blockers	26(86.6)
Angiotensin II receptor inhibitors	17((56.6)

Table 5
Adverse effects experienced by the patients. Along with when the symptoms were experienced during the course of medication.

Adverse Effects	No. of patients (%)	In beginning	Presently	Sometimes
Headache	8(26.66)	4	2	2
Frequent micturition	6(20)	-	6	-
Excess micturition	5(16.66)	3	2	-
Dizziness	4(13.33)	1	-	3
Dry cough	2(6.66)	-	2	-
Disturbed stomach	3(10)	-	-	3
Poor erection	2(6.66)	-	2	-

DISCUSSION

A total of 30 patients were included in this mixed study. The male: female ratio was 2:1 and the age ranged from 42years to 83years.
The current study shows: -
Table1: Out of the total number of patients seen the highest number of patients were from age group 71-80years of age i.e., around 26.67%. In the collected data the youngest patient was of 42 years and the oldest was 83years.

Table2: It shows the among the total number of patients studied 36.66% of them experienced the adverse reaction. This table also showed the number of patients with associating medical conditions. Among the total patients 76.66% of them were having other associating medical conditions, 46.66% of the patients were diabetics. On 63.33% of the patient no adverse effects were seen.

Table3: Shows the number of patients experiencing the adverse reaction by taking number of medicines. It showed that with increasing duration of the disease the number of medicines were also increased. And with the increasing number of medications the number of patients experiencing the adverse effects also increased however there were comparatively less adverse effects seen in the elderly patients.
A total of12(40%) patients were on only antihypertensive medicine, among them 4(33.33%) of them shown adverse reactions. Rest 60% had other medicines besides antihypertensive medicines. 56.66% of the patients were on combine therapy of two or more antihypertensive drugs, among them more then 40% of them showed the adverse reactions. 43.33% of the total were on single hypertensive medicines irrespective of other associating medications of them 30.37% showed the adverse reactions.

Table4: It showed the type of antihypertensive medicine the patients been advised, among them calcium channel blockers were the most prescribed class of antihypertensive medicines26/30 i.e. 86.66% and lest was diuretics (20%) due to its adverse reactions. It was noted that 4 among the total were previously on the diuretics and were later changed to CCBs. Angiotensin II receptor inhibitor was the next most used group with 56.66%. The most common combination were calcium channel blockers and angiotensin II receptor inhibitors. In patients using only one antihypertensive medicine most of them were on calcium channel blockers n some on diuretics.

Table5: Shows the adverse effects experienced by the patients along with when the effects were experienced during the course of medication. Adverse effects were more seen in the male patients as compared to females. Among the whole, headache was the most common side effects experienced by the patients that comes to 26.66% of them. Next commonest was the frequent micturition experienced the patients taking calcium channel blockers that was 20%, next was excess micturition by the patients taking diuretics that was 16.66% among them few of them were showing this side effect in the beginning course of the medication which were later changed to either CCBs or angiotensin II receptor inhibitors. The frequency of patients experiencing dizziness, dry cough, disturbed stomach and poor erection were 13.33%, 6.66%, 10% and 6.66%.

CONCLUSION

From the above study it was seen that most of the population gets affected or get diagnosed with hypertension, in above study it was ruled out to be the population above the age of 40yearts.
It also showed that not all but majority of the them using any antihypertensive medications showed the adverse drug reactions. Among them most of them had associating medical conditions as well.

It also showed that as the duration of disease increases the number of antihypertensive medicines also increased and with the increasing number of medicines the incidence of more ADR been seen. From this it was concluded that as the years passes the disease does not get cured where as either the body become use to it or starts showing some adverse reactions which leads to either increase in number of medicines or discontinuation of that medicines.

The study also showed that most of the patients were on CCBs group of antihypertensive medicines and a few of them were previously on diuretics which were discontinued due to the side effect like excess micturition.

In all the antihypertensive groups, there is relatively high prevalence of adverse reaction experienced by the patients on antihypertensive therapy resulting in high rate of discontinuations. Common reaction experienced by the patients were excessive micturition by diuretics, frequent micturition by CCBs, dry cough by angiotensin II receptor inhibitors.

It was also been noted from the data which has been collected during the study that few of the patients who started with antihypertensive medication ended up getting diabetes with in the next 2-3 years, this was not thoroughly studied so further detail studies are required to justify the relation between this two.

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