

Restarting of Anti-Hypertensive Treatment in Hypertensive Patients

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Abstract: In Our study, we studied 1100 patients who were not taking anti-hypertensive by physician were not advice regarding lifestyle, exercise regarding its complication when restarted with the treatment. Study includes age group 20 to 80, both genders. An Economic status negligence regarding advised polypharmacy was main because unawareness polypharmacy was main cause of discontinuation of Anti-Hypertensive.

Keywords: Hypertension Educational Status & Complications of Hypertension.

INTRODUCTION

Hypertension is a condition that affects one billion people worldwide and is a leading cause of morbidity and mortality.

We also feel gaps in "Patients knowledge of hypertension" as also gaps in "Physicians updated knowledge of hypertension" have a negative impact on control of hypertension was also noted in this Institution who attended from primary health care centre or from non-medical registered practitioner in tertiary health care centre they all were put on anti-hypertensive therapy at nearby primary health care centre or from non-medical registered practitioner - Index Medical College, Hospital and Research Centre (IMCHRC).

Hypertension is described as per European Society of Hypertension & JNC as shown in table no. 01. As we know even 5-6 mmHg reduction in diastolic blood pressure reduces the risk of - Cardiac, CVA, Renal & Ophthalmic complications by 40% & hence it is necessary to keep blood pressure under control.

After short time some of them stop by them self as symptoms free/cost of the medication not able to buy have not time/to continue the medication they unawareness or they were not advice regarding duration of medication taken to find out the facts if know patient lifelong. We look this study to make their aware regarding the complication hypertension. This was noted in questions patient who were attended for either symptoms of hypertensive with pas history or were there blood pressure was recorded for some other medical condition or volunteered for recording our BP (Blood Pressure). Hence this study was taken.

MATERIALS & METHODS

With consent of patients to undergo this study & ethical committee this research was conducted in dept. of Cardiology of internal medicine

Index Medical College, Indore for 06 months 01st June 2017 to 31st Dec 2017.

Consecutive 1100 hypertensive patients were enrolled attending OPD at Index Medical Collage, Hospital and Research Centre (IMCHRC) after taking their informed consent to participate in the study.

This is an observational, single center, non-interventional study in a cohort of 1100 hypertensive subjects. Data was collected at one single, routine patient's visit in IMCHRC clinic.

Inclusion criteria

- Patients of essential hypertension who would give consent to participate in the study but stopped medication for 01 month to 03 months.

Duration of Hypertension in as shown in table no. 03

- Duration of Hypertension more than 01 year. Who were put on medication but discontinued by themselves or when told that there B.P. is within normal range that stopped medication & detected at time of Hospitalization.
- Hospitalized patients
- Both Genders & Age 25 to 80 years

Exclusion criteria

- Patients of secondary hypertension
- Patient detected for first time to be suffering from hypertension.
- Duration less than 01 year.
- Eclampsia & Pre-Eclampsia Pregnant ladies.
- Suffering from malignancies anywhere in the body.
- Critically ill patients.

- Patient under age 18 years.
- Patient on Immunosuppressant Therapy.
- Patient on Steroids
- HIV Patients

OBSERVATION & RESULTS

In Out study total patients we registered total 1100 patients. There were (8.7%) in the age group 21-40 years, (68.7%) in the age group 41-60 years, (19.1%) in the age group 61-80 years and (3.5%) were in the age group >80 years. There were (45.7%) females and (54.3%) males in the study showing a male preponderance in relation to females. Majority of the patients were in the age group 41-60 years in both the genders.

CLASIFICATION OF HYPERTENSION JNC 7: [1]

Table-1: Showing classification of blood pressure according to JNC7 guidelines

Classification	Systolic (mmHg)	Diastolic (mmHg)
Normal	Up to 120 mmHg	Up to 80 mmHg
Prehypertension	120 – 139	80 -89
Stage 1	140 – 159	90 -99
Stage 2	160	90

Table-2: Showing the comparison of blood pressure recommendations of Indian hypertension Guidelines [2] and European Society of Hypertension [3]

European Society of Hypertension[3]	Indian Hypertension Guidelines[2]	Systolic (mmHg)	Diastolic (mmHg)
Grade 1	Stage 1	140 – 159	90 – 99
Grade 2	Stage 2	160 – 179	100 – 109
Grade 3	Stage 3	> 180	> 110
Isolated Systolic Hypertension Systolic > 140 mmHg Diastolic < 90 mmHg	Isolated Systolic Hypertension Grade 1 Grade 2	140 – 159 > 160	< 90 < 90

DISCUSSION

Secondary hypertension

The prevalence of secondary hypertension is approximately 4-5% of total hypertensives. Because of its low prevalence, routine screening for secondary hypertension is not done. The percentage prevalence of various causes is shown in table 3 given on the next page.

Gupta *et al.* [4] in a study showed the trends in hypertension epidemiology in India showed hypertension causes cardiovascular diseases which were responsible for 2.3 million deaths in India in the year 1990; this is projected to double by the year 2020. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. Pooling of epidemiological studies shows that hypertension is present in 25% urban and 10% rural subjects in India. At an

underestimate, there are 31.5 million hypertensive in rural and 34 million in urban populations.

Indian hypertensive guidelines II [2] showed there are multiple single centre studies on prevalence of hypertension available from across the country. Over the years with changing definition, a lower level of pressure (140/90) is being used as a cut-off point to define hypertension as compared to previous studies, which used higher levels of pressure (160/95). Nevertheless, there appears to be a steady increase in hypertension prevalence over the last 50 years, more in urban than in rural areas.

HYPERTENSION AS A RISK FACTOR FOR VASCULAR CATASTROPHIES

Uncontrolled hypertension is associated with significant morbidity and mortality in the five strategic vascular trees: cerebral, coronary, renal, retinal and

peripheral vascular trees. Leading to Ischemia Necrosis & Death of normal healthy body tissue due to deficiency of different form

The SHEP (Systolic Hypertension Elderly Program) cooperative research group [5] study showed substantial benefit following control of systolic blood pressure in the elderly also in CVA & CAD.

ASSOCIATION OF HYPERTENSION WITH OTHER COMORBIDITIES

Hypertension with diabetes mellitus

According to Indian Hypertensive Guidelines [2]. The prevalence of hypertension is 1.5 to 2. Co-existence of hypertension and diabetes is being increasingly recognized. 30-35% of diabetics are detected to be hypertensive & also have high risk of micro & macro angiopathies.

Tight metabolic control of diabetes, effective blood pressure control and low protein diet improves overall outcome [2]. Hypertension was noted in patients suffering from cause of chronic kidney disease, stroke such as Hammeragic & Thrombotic & TIA.

Patient Misconceptions regarding the disease & discontinuation of drug

- Once treated permanent cure has achieved & hence discontinued the drugs.
- Fear of addiction to the medicines.
- In case of secondary hypertension such as DM or any other disorder if treated will cure hypertension,

if the primary disease is controlled then no need of anti-hypertensives.

- Polypharmacy for other disorders & hence stopped antihypertension
- Haemodialysis if done regularly will cure hypertension.
- Hypertension is disease of old age or over weight when generic medicine used by patients.
- Hypertension has got emotional relationship.
- Started Medication without proper checkup.
- Reduction is close by self.
- Change in strip Color taking as it may not be failure.
- Hypertension cannot cause stroke heart attack & renal failure & has no effect vision.

PHYSICIAN FACTORS FOR UNCONTROLLED HYPERTENSION

In a hard hitting article by Bero *et al.* [6] in New England Journal of Medicine mentioned following factors regarding irrational treatment existing in the Indian subcontinent. Some of these factors mentioned below are also relevant for treatment of patients for hypertension by their physicians at Primary Health care centre.

- Lack of knowledge. (Non-registered Medical Practitioners)
- Inaccurate diagnosis by physician & inaccurate instrument cuff used over.
- Over prescribing & under prescribing by the medication doctors.

Table-03: Year wise Diagnosis (N=1100)

Years of Diagnosis	Percentage (%)
1-2 years	29.1
2-4 years	41.7
4-6 years	16.5
>6 years	12.6
Total	100.0

In 67 (29.1%) patients' blood pressure was diagnosed in last 1-2 years, in 96 (41.7%) patients it was diagnosed in last 2-4 years, in 38 (16.5%) patients it was diagnosed in last 4-6 years and in 29 (12.6%) patients it was diagnosed more than 6 years back. Majority of the patients had diagnosis of blood pressure in last 2-4 years.

On enquiring about their initial treatment following were the answer

(20.9%) patients had forgotten their initial treatment, (26.1%) had received amlodipine alone, (16.5%) had received chlorthalidone alone, (16.1%) had received ramipril alone, (7.4%) had received amlodipine and (11.3%) had received rampril along with atenolol succinate.

Under & Over Prescription as shown below:

46 (20.0%) had not given any response, 41 (17.8%) patients were taking amlodipine alone, 28 (12.2%) patients were taking chlorthalidone alone, 17 (7.4%) patients were taking ramipril and metoprolol succinate combination, 15 (6.5%) patients were taking telmisartan alone, 13 (5.7%) were taking amlodipine and chlorthalidone combination, 10 (4.3%) were taking olmesartan alone, 10 (4.3%) were taking clonidine alone, 10 (4.3%) were taking telmisartan, chlorthalidone, amlodipine combination, and there were other combinations which are being shown in the table above.

But they needed modification in their treatment in form of either restarting of medication or

reduction in dose or change in dose already taken or increase or decrease previously taken medication from multiple drugs to combination so as to reduce the pill load & better control of hypertension & decrease in complications.

Life style medication was not advised to following

155 (64%) patients were not advised for diet reported that they had not received any additional advise, 71 (30%) had not received restriction of the salt. advise of diet control, 19 (8%) patients regarding exercise had received exercise advise, 4 (1.7%) patients had received advise quit alcohol and tobacco in any form.

61% have not addiction, 39% were addicted to alcohol & tobacco. They were not aware of harmful effect of either of alcohol but were aware of tobacco and were not advice by their previous physician to quit smoking & alcoholism.

Patient awareness regarding Harmful effect - (30%) patients reported that because of blood pressure, there is brain damage, (20%) reported heart disease, (20%) reported kidney damage and (48%) reported that there are no harmful effects of blood pressure.

The distribution of patients according to the co morbidities seen along with blood pressure

In (20.4%) patient's diabetes mellitus was seen, in (17.4%) patient's hypertensive heart disease, (12.2%) patient's dyslipidemia, (10.4%) patients CKD, (3.5%) patients CVA and in 4 (1.7%) patients TIA.

The distribution of patients according the reasons for non-compliance was cost of medication

There were 46 patients who were non-compliant to the medication. Of these (50.0%) were non-compliant because they could not afford the treatment life long, (30.4%) had felt relieved after taking initial course of treatment and stopped the medication and (19.6%) patients had no time to buy medication as were busy with work non-availability of medicine nearby or on the way to job.

Higher age group were more reluctant to take medicine regularly & compete dose as advised

DISCUSSION

- Patient education status few patients were illiterate & were not aware of complication of hypertension & use of medication.
- Primary school educated was also not able to take medication as per illiterates.
- High School educated was able to take medication advice but not regularly in proper dose or in combination.

- Up to Higher secondary they were not aware of all the complication of hypertension & modified drug scheduled also.
- Graduates & Post Graduate were not totally aware of all the complications & drug dose medication was as per there will or taking medication without consultation from physicians.

DISCUSSION OF RESULTS OF PATIENTS STUDY

In this study we have randomly selected 1100 hypertensive patients attending OPD at our hospital. Out of 1100 hypertensive patients (89%) were uncontrolled (having blood pressure > 140 / 90 mmHg) which doesn't compares with JNC7⁴ which quoted 36.7% prevalence of uncontrolled hypertension and study of Eric L Knight *et al* (2001) from Boston, who found 39% of their hypertensives were uncontrolled.

When we carefully further analyzed uncontrolled hypertensive patients we found there were patients (52.17%) with mild hypertension (140 - 159 / 90 - 99 mmHg), patients (17.39%) with moderate hypertension (160 - 179 / 100 - 109 mmHg), patients (20%) with severe hypertension (> 180 / > 110 mmHg).

• PATIENTS CHARACTERISTICS

Out of total number of 1100 patients studied, there were 54.4% males and 45.6% females. Out of the 54.4% male patients, blood pressure of > 140 / 90 mmHg was found in patients (88%) and in females out of patients, blood pressure of > 140 / 90 mmHg was found in patients (91.42%). We found female preponderance, although the number of patients was not large enough to draw any conclusion. Female preponderance was also shown by a study done in USA by Knight *et al.*[7]and also in a study done in France by Ragot *et al.* [8] who found 64 % uncontrolled hypertensive female patients.

Out of the total 1100 patients, (15.1%) had never gone to school, patients (19.56%) had an education of less than a graduate degree and patients (66.9%) were graduates. Patients who had never gone to school uncontrolled blood pressure was found in all of them patients (100%) and patients who had education of less than a graduate degree, uncontrolled blood pressure was present in all patients (100%) and patients who had graduate degrees patients (84.3%) were on irregular uncontrolled hypertensive. As the numbers are small in each group much significance can't be attached to these findings. Our premise however, was that lower level of education would result into lesser knowledge about hypertension which would have negative impact on control of hypertension.

• **Discussion of “patient factors for uncontrolled hypertension”**

The 46% non-compliant patients 7 patients were illiterate, 25% patients had an education of less than a graduate degree and 14% patients were graduates. 15% had education less than graduate.

Out of 1100 hypertensive patients in our study compliant. Various reasons given for discontinuation of medication (non-compliance) for high blood pressure by the patients in our study were:

- (42%) said that they could not afford the cost of medication, the cost of medications per patient per month ranged from Rs. 80 to Rs. 2000 and hence they stopped treatment.
- (51%) said that the drug had finished and they were asymptomatic and they felt that they should not take the medicine any longer and hence stopped treatment.
- (9%) did not have time to purchase the drug due to either travel or busy appointments and hence stopped treatment.

Levine *et al.* [9] showed that educational program increased reported compliance with medication, improved the proportion of patients losing weight, and improved appointment keeping. Most important, there was a favorable effect on blood pressure control.

A physician survey (N=3740) conducted by the National Heart, Lung, and Blood Institute assessed barriers to the effective control of blood pressure. Physicians from general and family practice, cardiology, and internal medicine specialties reported on both patient- and physician related factors, although the list of possible factors was not comprehensive. Like our study, the most frequently cited impediments to blood pressure control were non-compliant for lifestyle changes (59.2%), failure to take medications as instructed (20%), patient lack of understanding of the problem (30.4%) and costs of drugs (10%).

In a study in Kuwait by Al-Mehza *et al.* showed various reasons for non-compliance such as forgetfulness 53.3%, presence of drug side effects

33.3%, drugs out of supply 26.7%, polypharmacy 6.7% and absence of symptoms 6.7%. He also found that non-compliance was associated with lack of knowledge of hypertension.

Out of 1100 patients studied there were patients (20%) who were daily smoking and patients (20%) who were taking at least >40gm/day of any kind of liquor daily. Our numbers are small and we need to have more number of patients to study this important aspect in our setting. In a study done in Saudi Arabia by Al-Soweilem and Elzubier [10]

showed cigarette smoking to be prevalent in 7.9% of hypertensive patients.

Survey of the prescriptions showed that out of smoking and taking alcohol patients were advised to quit smoking and patients were advised to quit alcohol intake.

In our study from the record of prescriptions of physicians we found that out of the total 1100 patients studied patients (65.65%) had comorbidities. Patients (20%) were known cases of diabetes, Patients (17.4%) were known cases of hypertensive heart disease, patients (10.4%) had chronic kidney disease, patients (5.21%) had a stroke / transient ischaemic attack (TIA) in the past, and patients (12.2%) had dyslipidaemia. There was also considerable overlap of associated comorbidities that made.

DISCUSSION OF RESULTS OF DOCTORS STUDY

Patient's perspective

In this study we have randomly selected 1100 hypertensive patients attending OPD at our hospital. Out of 1100 hypertensive patients (89%) were uncontrolled (having blood pressure > 140 / 90 mmHg).

Out of the total 1100 patients, (15.1%) had never gone to school, patients (19.56%) had an education of less than a graduate degree and patients (66.9%) were graduates. Our premise however, was that lower level of education would result into lesser knowledge about hypertension which would have negative impact on control of hypertension.

Patient if educated & uneducated class if counseled properly regarding hypertension & its complication is obtained will stick to treatment keeping their socio-economic status will help better control of hypertension & its complication specially stage renal diseases myocardial infarction & specially stroke.

Our study found that, was that lower level of education would result into lesser knowledge about hypertension which would have negative impact on control of hypertension.

CONCLUSION

Impact on compliance, it is imperative that primary health care physicians correct them through health education. Screening for hypertension will undoubtedly be affected if there are misconceptions such as those related to age and gender susceptibility, as observed in this study. Many patients believe that emotional stress is an important etiological factor for hypertension and are ignorant of other contributing factors which can be corrected, such as excessive salt intake and obesity. Although the frequency

of positive family history of hypertension was high (49%) among the sample, only 2% of patients were aware of the role of heredity in the etiology of the disease.

Lower level of education would result into lesser knowledge about hypertension, which would have negative impact on control of hypertension. Non-compliant patients had education less than graduate. This shows that level of education could be an important contributor for non-compliance to treatment.

Most frequently cited impediments to blood pressure control were non-compliant for lifestyle change, failure to take medications as instructed, patient lack of understanding of the problem and costs of drugs.

Very few smokers and alcoholics were advised Quit. More than Half of the patients in our study were not advised any lifestyle modification.

The result of our study clearly brings out time constraint as an important impediment for giving comprehensive advises to these patients of hypertension

In the face of declining budgets, community programs are challenged to increase activities to prevent high blood pressure and serve more persons with hypertension.

It is necessary for all physicians treating hypertension to make their patients aware of its complication if not treated or well controlled not to start self-medication not stop.

Not to stop/make changes in dosages anti-hypertensive without consulting treating physician.

If cost is a problem then request the doctor to prescribe medication as per suitable cost.

When there is any change in strip of the medicine given by the pharmacist consult your doctor & follow the advice accordingly.

Counseling of all patient as well as general public should be organized & proper training/update may save many complications & life.

SUMMARY

Hypertension is a condition that afflicts almost 1 billion people worldwide and is a leading cause of morbidity and mortality.

The aim of the study would be to find out what percentage of our hypertensive patients attending outpatient department (OPD) at IMCHRC are uncontrolled and to find out the causes for

uncontrolled hypertension from the “Patients” perspective” and “Physicians” perspective”.

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