

Incidence and management of ISH in a tertiary care hospital of Chandigarh (India).

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Citation

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Abstract

Isolated systolic hypertension (ISH) is defined as a raised systolic pressure with normal diastolic pressure. It is a major risk factor for cardiovascular disease in patients more than 50yrs of age. Early detection and treatment of ISH reduces the incidences of stroke, heart attack and heart failure. Despite this, ISH remains under-recognised and undertreated. Hence the present study was undertaken to assess the incidence and management of ISH in a tertiary care hospital. The study was carried out by the Department of Pharmacology in collaboration with the Department of Medicine, Government Medical College & Hospital, Chandigarh (India). A questionnaire-based proforma was made to be filled by patients with ISH. A total of 90 patients were included in the study. The most commonly prescribed anti-hypertensive in our study was Amlodipine (24.78%) followed by Atenolol (15.4%). The pattern of prescription is not typical for ISH since the patients were suffering from co-morbid conditions like heart failure, ischaemic heart disease, diabetes etc.

INTRODUCTION

Isolated systolic hypertension (ISH) affects around half of people aged over 60 years and it is defined as a systolic pressure with normal diastolic pressure (systolic pressure \geq 140mmHg with diastolic pressure $<$ 90mmHg).^{1,2} The emergence of systolic hypertension as the major risk factor, relates to two major changes. Firstly the people are living longer and secondly the people with hypertension are generally being identified and treated earlier. As a result, severe diastolic hypertension is becoming less of a problem while simultaneously exposing the under treatment of raised systolic pressure.³ Due to decreased arterial compliance observed with advancing age, there is widening of pulse pressure which is a better predictor for cardiovascular events in people more than 50 yrs of age.^{4,5} There are supportive evidences that the treatment of ISH reduces the incidences of stroke, heart attack and heart failure.⁶ Despite this, ISH remains undershadowed, under-recognised and undertreated. Hence the present study was undertaken to assess the incidence and management of ISH in a tertiary care hospital. There is also an ambiguity in treating ISH. It is documented in literature that systolic pressure is directly proportional to sodium intake. So the aim of the present study was also to assess the favourite drug of prescribers for ISH.

MATERIALS AND METHODS

The study was carried out by the Department of Pharmacology in collaboration with the Department of Medicine, Government Medical College & Hospital, Chandigarh (India). A questionnaire based proforma was made to be filled by patients with ISH.

RESULTS

A total of 90 patients were included in the study. The results were tabulated and analyzed using percentages. Table – I shows the demographic pattern of the patients with ISH. Majority of the patients were between 60-69 yrs of age (59%) although the range was from 50 to $>$ 80 yrs of age. The sex distribution was almost similar.

Figure 1

Table – I (Demographic pattern of the patients with ISH)

Age (years)	No.	%age
50-59	04	04
60-69	53	59
70-79	28	31
\geq 80	05	06
Sex		
Male	42	47
Female	48	53

Table –II depicts the pattern of life style factors like exercise, morning walk, alcohol intake, smoking etc in the

patients. There is evidence that healthy life style factors have a role in management of raised blood pressure.

Figure 2

Table – II (Life style factors in patients with ISH)

	No.	%age
Exercise		
Yes	11	12
No	79	88
Morning walk		
Yes	28	31
No	62	69
Alcohol intake		
Yes	09	10
No	81	90
Smoking		
Yes	06	07
No	84	93
Daily salt intake awareness		
Yes	42	47
No	48	53

Table – III highlights the drugs prescribed for ISH in patients with and without other co-morbid conditions.

Figure 3

Table – III (Pattern of prescription in patients with ISH)

Name of the drug	No.	%age
Amlodipine	28	24.78
Atenolol	19	16.81
Amlpress AT	17	15.04
ACE inhibitor/ARB	17	15.04
Furosemide	17	15.04
Metoprolol	06	5.31
Thiazide	03	2.65
Others	06	5.31

DISCUSSION

The benefits of treatment of ISH are well established despite reluctance to accept it as a discrete pathological entity.⁷

Before starting drug therapy an initial approach is to advice life style modifications to lower blood pressure. The Trial of Nonpharmacologic Interventions in the elderly (TONE) study showed that sodium restriction (limited sodium intake to 1.8gm/day) and weight reduction (by about 3.5 kg/week) not only eliminated recurrent hypertension but also medication use in 44% of obese elderly patients at end of 30 months.⁸

In our study 31% of the patients took morning walk regularly and 12% did regular exercise. 47% of the patients were aware about daily salt intake and did not sprinkle salt on salads and citrus fruits (Table II).

Besides sodium restriction, moderate and graded aerobic

exercise, smoking cessation and limited alcohol intake all have beneficial effects on blood pressure.⁹ 90% of the patients did not consume alcohol and 93% did not smoke (Table II).

Before starting drug therapy the following three questions must be addressed.⁶

- At what level of systolic blood pressure should treatment with drugs begin?
- What drugs should be used?
- To what level should the blood pressure be lowered?

Considering the first question, most clinicians agree that patients with systolic blood pressure above 160mmHg and no other co morbid conditions should receive treatment. Those patients with systolic blood pressure above 140mmHg who concurrently have diabetes or other risk factors for atherosclerotic vascular disease should be treated.¹⁰

Regarding the second question, a low-dose diuretic (e.g hydro chlorthiazide 12.5mg a day) or a long –acting di-hydropyridine calcium-channel blocker (e.g amlodipine) is the recommended therapy in most expert guidelines.^{11,12} In older patients with co-morbid conditions angiotensin-converting enzyme inhibitors, beta-blockers or nitrates have been successfully used.¹³ In our study the most commonly prescribed anti-hypertensive was Amlodipine (24.78%) followed by Atenolol (16.81%), then a fixed dose combination of Amlodipine and Atenolol (15.4%). Furosemide was more commonly prescribed (15.4%) than thiazide (2.65%) (Table III). The pattern of prescription is not typical for ISH since most of the patients were suffering from co morbid conditions like heart failure, ischaemic heart disease, diabetes etc.

For the third question, it is recommended that ISH should be treated gently by reducing the systolic blood pressure to near 140mmHg and the diastolic pressure should not be lowered much below 70mmHg.¹⁴ In the Rotterdam study involving 2351 elderly hypertensives, the risk of stroke was significantly higher in those whose diastolic blood pressure was <65mmHg compared with those who had a diastolic blood pressure between 65 and 74mmHg.¹⁵ Excessive lowering of diastolic pressure may possibly be reducing perfusion to vital organs thereby leading to hypotension, angina, stroke or renal insufficiency.¹⁰ In our study 27.78%

of patients achieved systolic pressure ≤ 140 mmHg, 61.11% had diastolic pressure between 71 and 80mmHg and 13.33% had diastolic pressure ≤ 70 mmHg.

It is believed now that we must redirect our clinical focus exclusively towards systolic pressure in people aged over 50yrs based on the following reasons. Firstly systolic pressure is more easily and accurately measured, hence it could be a better predictor of risk. It is also observed that the diastolic pressure is often normal or low in highest risk patients. Secondly communication of concept of hypertension as two different values has left many patients confused about the relative importance of systolic v/s diastolic blood pressure. Influencing the lay public on a single number would be easier to communicate. Lastly many general physicians have been confused by conflicting messages about diastolic and systolic pressure to guide the clinical management decisions.³

Reducing extra intake of salt would help in better control of the raised systolic pressure in patients above 50yrs of age. In this regard use of low dose diuretic (12.5mg thiazide) as anti-hypertensive would be the appropriate choice.

CONCLUSION

From the study it is concluded that systolic hypertension is a better predictor for cardiovascular events in subjects more than 50yrs of age and treatment of ISH reduces the incidence of stroke, heart attack and heart failure. As per the recommended guidelines a low dose thiazide diuretic or a long acting di-hydropyridine calcium channel blocker are the drugs of choice for ISH. In our study Amlodipine was the most commonly prescribed drug for ISH. The other drugs frequently prescribed were Atenolol, ACE inhibitors/ARB and Furosemide. These were used to treat other co-morbid conditions that the patients had. In the end we would like to conclude that the prescribers must be well versed with this pathological condition and the appropriate treatment for the same.

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