

Efficacy Of Homeopathic Medicines In the Management Of ESSENTIAL HYPERTENSION : A CLINICAL STUDY

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Introduction

"A man's life may be said to be a gift of his blood pressure, just as Egypt is a gift of the Nile". So said Sir William Osler, an icon of modern medicine and the man said to be the most influential physician in history. Sir Osler may be indeed right, as arterial pressure is essential for sustaining life, the most important factor which ensures that the circulation of blood reaches all the tissues in our body. At the same time, an elevated blood pressure can be most inimical to life, if persisting over a period of time.

The pioneers in the study of arterial pressure, Reverend Stephen Hale, who made the first blood pressure measurement on animals, and Scipione Riva Rocci, who invented the blood pressure cuff, were probably not aware of the full significance of their discoveries. It was only in the late 1950's that the medical world became aware of the importance of high blood pressure as a precursor of complications commonly attributed to "old age".

At the present day, an elevated blood pressure level is recognized as the most important public health problem in the developed countries, and essential hypertension is held responsible for more than 95% of the cases. It is common, asymptomatic, and lead to lethal complications if left untreated. The "silent killer" as it is known, is gradually becoming a problem of enormous proportions in the developing world also.

The practitioners of the allopathic system of medicine have tried to combat this malady by trying to develop drugs designed to reduce the high arterial pressure. Over the years they have been successful in developing drugs with profound blood pressure lowering capabilities, but the magnitude of the problem at the community level has remained. The reasons for this are many, including the adverse effect of drugs and relatively higher cost of treatment, but the absence of a holistic view of disease is probably the most important. As with other conditions, the inclination is to treat the "results" of disease. This ultimately proves less successful, and is also detrimental to the health of the patient.

The homoeopathic physician on the other hand, considers disease as a disturbance of the life force, made known to him only through signs and symptoms. He understands that the patient is sick prior to the localization of disease. The hypertension, like other diagnoses, is considered only as a part of the whole. The homoeopathic approach also does not have the other drawbacks seen with the allopathic system, like adverse effect of drugs and high cost of treatment. Thus it is potentially suitable to deal with the problem of essential hypertension, especially in a developing country like India.

Unfortunately there is little information regarding the management of hypertension in homoeopathic literature. Many of the classical therapeutic text books and materia medicae do not mention the condition at all. This is possibly due to the lack of awareness about hypertension during the earlier days of homoeopathy. Clinical studies on the effectiveness of homoeopathic medicines in hypertension also has been few. Of the studies published, most have tried to evaluate the action of "specific" drugs rather than use an individualized approach.

All these factors, have encouraged me to take up this study on the efficacy of homoeopathic medicines in the management of essential hypertension. It is hoped that useful information will be gained both on the entity of essential hypertension, as well as the homoeopathic approach to its management.

Survey of Literature

Definition and classification

Blood pressure² is a continuously distributed variable in populations, with no clear distinction between hypertensive and normotensive individuals. The distribution follows a bell shaped curve, slightly skewed to the right. The risks associated also follows the blood pressure curve, and it is not possible to identify a level of blood pressure that carries risk and one that does not. Any definition of "hypertension" is therefore arbitrary.

The WHO and the International society of Hypertension has defined hypertension as "a systolic blood pressure of 140 mm Hg. or greater, or a diastolic blood pressure of 90 mm Hg. or greater in subjects who are not taking anti-hypertensive medication". This traditional level of hypertension is a pragmatic one, based on evidence^{4,5} of treatment benefit, balanced against side effects and cost of treatment. Indeed, hypertension can be defined as blood pressure⁶ levels above which treatment does more good than harm. Various organizations have classified blood pressure into different levels of severity. The classification of WHO - ISH is given below.

Category *		Systolic BP (mm Hg)	Diastolic BP (mm Hg)
Optimal +		<120	<80
Normal		<130	<85
High Normal		130-139	85-89
Hypertension	Grade I (Mild) Borderline	140-159 <i>140-149</i>	90-99 <i>90-94</i>
	Grade II (Moderate)	160-179	100-109
	Grade III (Severe)	≥ 180	≥ 110
Isolated Systolic Hypertension		≥ 140	< 90
Borderline		<i>140-149</i>	< 90

Table 1. WHO - ISH classification of blood pressure

* For adults aged 18 or older.

* When a patients systolic and diastolic blood pressure falls into different categories, the higher category should apply

+ With respect to cardiovascular risk

Hypertension: The Problem

Cardiovascular diseases⁷ are responsible for around 20% of all deaths worldwide. They are the principal cause of death in developed countries, accounting for about 50% of all deaths. They are also emerging as a prominent public health problem in developing countries, ranking third among the main causes, with approximately 16% of all deaths.

The most common among these diseases are hypertension, ischemic heart disease, and cerebrovascular disease. Considering³ the central role of hypertension in the pathogenesis of both coronary heart disease and stroke, it is clear that its control is one of the biggest challenges facing public health authorities and medical practitioners all over the world.

Prevalence: Global

Hypertension⁸ affects up to a quarter of the adult population. The prevalence depends on the age, racial composition and the criteria used to define the condition. In a white population, 20% of the adults in the age group 35 - 65 years have a diastolic blood pressure in the range 90 - 109 mm Hg, 4 - 5% have a range of 110 - 129 mm Hg, and 0.5% have blood pressure levels > 130 mm Hg. The prevalence is even higher in the non white population.

Prevalence: India

Epidemiological⁹ studies show a rising trend in the prevalence of hypertension in India in the last three

decades. This is in contrast to with the findings reported in developed countries, which show a decrease in prevalence. Studies¹⁰ show overall prevalence in the age group 25 - 64 years as 25.6 %. This¹¹ figure is close to 33% in the age group 45 - 65 years.

Prevalence:

Kerala

Kerala has a high prevalence of hypertension, as shown by the results of a multicentric study¹⁰ among five Indian cities, where Thiruvananthapuram had the highest prevalence of hypertension with 30.7% of the population affected. The percentages are much higher in the elderly population, and in urban than in rural areas

In a study¹² conducted by the hypertension study group among subjects aged = 60 years, 69% of the sample from urban areas and 55% from rural areas were found to be hypertensive. Kerala¹¹ also has a high prevalence of other cardiovascular risk factors like obesity, smoking, lack of exercise etc., which is more marked in the urban population.

The "rule of halves"

The magnitude of the problem is compounded by the fact that hypertension remains an "iceberg" disease, with a large percentage of cases remaining undetected. In the early 1970's it became evident that only half the hypertensive subjects in developed countries were aware of the condition. About half of them were being treated with drugs, and only half of those treated were adequately treated. This came to be known as the "rule of halves", and the situation in the developing countries is likely to be far worse.

Causes of Hypertension

Traditionally, hypertension has been classified into essential² or primary, where there is no evident cause, and secondary, where there is an evident anatomical, pathological or biochemical abnormality. But this view of essential hypertension is increasingly being challenged with the recognition of constitutional, dietary and environmental factors in its pathogenesis.

Essential⁵ hypertension is the commonest among the causes of hypertension, constituting up to 95% of the cases. Among the secondary causes, renal diseases account for the majority of cases. A useful classification is given below

- 1) Systolic hypertension with increased pulse pressure
 - a) With decreased compliance of aorta (arteriosclerosis)
 - b) With increased stroke volume
 - i) Aortic regurgitation
 - ii) Thyrotoxicosis
 - iii) Fever
 - iv) A-V fistula
 - v) Patent ductus arteriosus

- 2) Systolic and diastolic hypertension (increased peripheral vascular resistance)
 - a) Unknown aetiology**
 - i) Essential hypertension
 - ii) Toxemia's of pregnancy
 - iii) Acute intermittent porphyria
 - b) Renal causes**
 - i) Chronic pyelonephritis
 - ii) Acute or chronic glomerulonephritis
 - iii) Polycystic disease
 - iv) Renovascular stenosis or renal infarction
 - v) Severe renal diseases e.g. Diabetic nephropathy
 - vi) Renin producing tumors
 - c) Endocrine causes**
 - i) Cushing's syndrome / Cushing's disease
 - ii) Conn's syndrome
 - iii) Pheochromocytoma
 - iv) Hypothyroidism
 - v) Acromegaly
 - d) Iatrogenic causes**
 - i) Oral contraceptive pills

- ii) ACTH & Corticosteroids
- iii) Non-steroidal anti-inflammatory drugs

e) Miscellaneous causes

- i) Coarctation of aorta
- ii) Poisoning - lead, thallium etc
- iii) Polyarteritis nodosa
- iv) Increased intravascular- volume - blood transfusion, Polycythemia vera etc.
- v) Increased intracranial pressure

Essential Hypertension: Aetiology

Although essential hypertension by definition does not have any known cause, epidemiological studies have identified several risk factors for its development. All of these factors may not be identifiable in individual patients, underlying the heterogeneous nature of the essential hypertension population. Some of the important risk factors are discussed below.

I) Age:

Hypertension is predominantly a disorder of populations in which the fundamental problem is the tendency for blood pressure to rise with age. The systolic blood pressure rises till the 7th decade in males and sixth decade in females. Diastolic blood pressure rises till the 6th decade and then begins to fall.

II) Urban living:

Isolated communities in Africa and Asia do not show any age related increase in blood pressure. When they migrate to westernized societies, a rise in blood pressure is seen, indicating that environmental factors related to urban living are very important. Studies in India also show a lower prevalence of hypertension in the rural population, probably related to increased physical activity and low body mass index (BMI).

III) Social class:

Elevated blood pressure levels are seen more in the lower socio-economic strata. But it is difficult to predict its influence independent of other aspects of lifestyle related to hypertension, like alcohol, increased body-weight etc.

IV) Genetic factors:

Generic factors have long been assumed to be important in the genesis of hypertension. This is supported by familial aggregation studies, which show similar blood pressure values in first degree relatives. A positive family history is found in about 70% of the cases of essential hypertension. It is also estimated that children of hypertensive parents have a 45% chance of developing hypertension. However, studies show a variation on the size of the genetic factor, again emphasizing the likely heterogeneous nature of the population with essential hypertension.

V) Dietary aspects:

A) BODY WEIGHT

There is definitive evidence that blood pressure is related to body weight, whether expressed as BMI, relative weight or skin fold thickness. Studies have also shown that blood pressure is more related to male pattern central obesity. Hypertension and obesity may also share common antecedents, both genetic and environmental. It may account for the clustering of hypertension, obesity, glucose intolerance and disorders of lipid metabolism, called Syndrome X. The role of insulin resistance, which is associated with obesity is also being examined as there are studies which show that it may have an effect independent of BMI

B) HIGH SALT INTAKE

There has been conflicting reports on the pathogenetic importance of salt intake. Evidence from epidemiological and migration studies show a positive association between salt intake and blood pressure. Treatment trials also show a reduction in blood pressure with salt reduction. However, there are some studies which show that only 60% of hypertensives are responsive to levels of sodium intake.

C) POTASSIUM

There is an inverse relationship between dietary potassium and blood pressure. Treatment trial also show a reduction in blood pressure levels with potassium supplementation.

D) CALCIUM

Several epidemiological studies have related a low calcium intake with high blood pressure levels. But calcium supplementation does not seem to have any effect on blood pressure.

E) ALCOHOL

There is a consistent positive association between alcohol consumption and blood pressure. This association is independent of other factors like age, BMI, social class etc. Intake of more than 6 units / day (1 unit = ½ pint beer, one measure spirit, or 1 glass wine) increases the risk progressively.

F) NON VEGETARIAN DIET

Non vegetarians have a higher blood pressure at all ages compared to vegetarians. Cross over trials also have shown a lowering blood pressure with a change to a vegetarian diet

VI) Smoking:

Smoking causes an acute rise in blood pressure, but long term effects are unclear. While it may not have much of an effect on blood pressure itself, it has an important adverse effect on the prognosis of hypertensive cases

VII) Physical activity:

People with a sedentary lifestyle usually have higher blood pressure levels. Age related increase in blood pressure is seen less in the physically active and fit. Many treatment trials also show that physical activity reduces arterial pressure, independent of changes in weight.

VIII) Stress:

Ambulatory blood pressure monitoring has shown a major rise in blood pressure levels during periods of acute pain, tension or mental stress. It has been suggested that some people may convert these normal transient hypertensive responses to stress into a sustained response. Consistent evidence to support this idea has always been difficult to find, because of the difficulty in measuring stress, and the wide individual variations in the response.

But it is becoming increasingly clear that psychological factors do have a role in initiating or maintaining hypertension. Essential hypertension is more prevalent in people who undergo mental stress during the course of their duties and those with "tense" personalities. Some of the studies have also implicated suppressed anger and lack of social support in the genesis of hypertension. Psychological stress may also be associated with other aspects of lifestyle linked with hypertension, like overeating, overdrinking, high calorie, high salt diet and physical inactivity.

IX) Intra uterine growth:

An inverse relationship between birth weight and adult blood pressure has received considerable attention. It is postulated that hypertension and other cardiovascular risk factors like obesity, NIDDM etc. may have common origin in poor development in utero or poor nutrition in infancy. The "syndrome X", thus may be more appropriately renamed as the "small baby syndrome".

X) Co-existing disease:

Hypertension and Diabetes Mellitus are often found together. In the hypertensive population, about 15 - 18% show some abnormality of glucose intolerance. As much as 50% of the diabetics may show elevated blood pressure levels. As noted earlier, hypertension, lipid abnormalities, obesity and glucose intolerance are seen clustered together.

Essential Hypertension : Pathogenesis

The exact pathogenetic mechanisms responsible for essential hypertension has been difficult to unravel, because of the variety of systems involved in the regulation of arterial pressure, and the complexity of their relationship with each other. Several abnormalities have been discovered in patients, with the claim that they are responsible for the rise in blood pressure. But there is accumulating evidence for the hypothesis that essential hypertension may have a number of distinct causes, operative in different subsets of the population.

It has also been observed that environmental factors held responsible do not operate on all the individuals. For example, the effect of stress or high salt intake is not seen on all the patients. It is possible that a genetic predisposition is needed, which determines the internal abnormalities through which the environmental factors operate. This inter-relationship between the environmental factors and a genetically

determined failure of adaptation to these factors, may be the critical mechanism in the initiation of hypertension

The different abnormalities and pathogenetic mechanisms found in essential hypertension is discussed below.

1) Hyperactive sympathetic nervous system:

Stimulation¹⁹ of the sympathetic nervous system raises blood pressure, more in hypertensive or pre-hypertensive patients than in normotensives. This hyper responsiveness can often be detected before sustained hypertension develops, usually manifested as a high sleeping pulse rate. Even so, a higher than normal catecholamine levels are seen only in some patients. It is postulated that a genetically²⁰ preconditioned over activity may be responsible for blood pressure elevation, in the face of environmental factors like stress, high salt intake etc.

2) The Renin-Angiotensin-Aldosterone mechanism:

Renin¹⁹, a proteolytic enzyme found in the juxta-glomerular apparatus cells, catalyses the conversion of the protein angiotensinogen to angiotensin I. This inactive product is cleaved by a converting enzyme into angiotensin II, which is a potent vasoconstrictor. It²¹ also stimulates the release of aldosterone from the suprarenal glands, which acts on the renal tubules causing salt and water retention, which further raises the blood pressure. The rennin-angiotensin system plays a very important part in maintaining a normal arterial pressure even in the presence of variation in other factors like salt intake.

The role of renin in the pathogenesis of essential hypertension has been studied with interest. However, there⁵ is a broad range of plasma rennin activity in patients with essential hypertension and elevated levels are not found in the majority. It is usually normal in 60%, suppressed in 20% and elevated only in 15% of the cases.

It has been suggested instead of elevated renin levels, the primary abnormality may be an exaggerated aldosterone response to angiotensin II, at least in some patients. On a high sodium diet, blood pressure may be elevated in these patients because of the mild hyperaldosteronism.

3) Abnormal Sodium transport:

Abnormalities⁵ in sodium transport in red blood cells have been demonstrated in 35 - 50 % of the patients with essential hypertension. It is postulated that this abnormality may be present in vascular smooth muscle cells also. The resulting increase of intracellular sodium is followed by accumulation of calcium ions. Excess calcium in the cells increases the sensitivity of the vascular smooth muscle cells to presser stimuli, like sympathetic discharge.

4) Impaired pressure natriuresis:

Normally²¹ the blood pressure is maintained at a level that will allow adequate output of salt and water by the kidneys. This ensures that salt and water intake and output is equal over a long period. Whenever there is an excess of sodium and water in the body, blood pressure rises, causing the kidneys to excrete the salt and water. This is called pressure diuresis or pressure natriuresis.

It has been suggested^{13,17} that in some patients there may be a genetically determined defect in the kidney's ability to excrete excess sodium, except at high blood pressure levels. With the right environmental exposure (high sodium, low potassium diet), the blood pressure may be increased as a compensatory mechanism to decrease sodium levels

5) Atrial natriuretic factors:

Increased levels² of atrial natriuretic factors (ANF) are seen in hypertensive patients. ANF is normally released in response to salt loading and fluid retention. One⁵ of the natriuretic factors, the so called digitalis-like natriuretic factor, has been shown to inhibit the sodium-potassium pump in the cell, leading to intracellular calcium accumulation and a hyper reactive vascular smooth muscle.

6) Insulin resistance:

Insulin resistance⁵ and hyperinsulinemia is present in a substantial fraction of the hypertensive population - even in lean hypertensives who are not diabetic. Hyperinsulinemia¹⁶ may be partly responsible for renal sodium retention, increased sympathetic activity and vascular smooth muscle hypertrophy. It can also cause modification in ion transport mechanisms, resulting in increased intracellular calcium levels in vascular smooth muscle.

Hemodynamic changes:

All the abnormalities discussed above must ultimately lead to increase in total peripheral resistance (by inducing vasoconstriction), increase in cardiac output, or both - because blood pressure equals cardiac output times peripheral resistance. It^{4,8} has been suggested that in the initial phases of development of essential hypertension, there are periods of transient elevations of cardiac output, the peripheral resistance remaining normal. This results in intermittent blood pressure elevations, termed labile hypertension

Environmental factors

Genetic factors

Transient rise in cardiac output
Normal TPR* "Labile hypertension"

Vasoconstriction
Functionally raised TPR

Arteriolar thickening and narrowing
Structurally raised TPR, Normal cardiac output
"Sustained hypertension"

* TPR - Total Peripheral Resistance

Figure 5. Hemodynamic changes in essential hypertension

This¹⁹ intermittent rise in blood pressure results in increased blood flow to the tissues. As the disease progresses, compensatory auto regulatory mechanisms in the tissues cause vasoconstriction in response to this increased blood flow, resulting in further rise in blood pressure. Later the arteriolar wall thickens as a result of smooth vessel hypertrophy. Apart¹² from a decrease in the arteriolar lumen diameter, this also results in an increased responsiveness to vasoconstrictor stimuli. The ensuing increase in total peripheral resistance sustains the elevation of blood pressure, even though the cardiac output by this time is normal.

Isolated systolic hypertension

In all populations, ageing is associated with a rise in systolic and fall in diastolic pressures related to atherosclerosis. Isolated systolic hypertension is a distinct pathophysiological entity, where the rise in systolic pressure is mainly due to the decreased elasticity of aorta and its major branches. It is not necessarily accompanied by a rise in total peripheral resistance, in contrast to essential hypertension.

Essential Hypertension: Signs & Symptoms

Majority² of the patients with essential hypertension are asymptomatic, hence the term "silent killer".

Symptoms develop only after complications develop in target organs, and the hypertensive state is usually detected on routine physical examination. Fatigue¹⁴, dizziness, palpitations, headache, anxiety, insomnia, depression etc frequently set in after the patient is aware of the diagnosis.

Occipital^{14,23} headache is reported to be suggestive of hypertension. The pain typically appears on waking in the morning and wears off during the day. Breathlessness⁴ has also shown a significant association with hypertension, but is probably related to the concomitant obesity. Other¹⁴ symptoms attributed to hypertension are epistaxis and nocturia, the later reflecting a disturbance in the normal circadian rhythm of urine formation.

On examination²⁴, most have no abnormal physical sign apart from the raised blood pressure. Non-specific signs like prominent apical impulse, accentuated aortic component of s₂ and a 4th heart sound reflect ventricular hypertrophy and dysfunction

Effects of hypertension

No pathological changes are seen in the early stages of Essential hypertension. When changes develop, they can be attributed to the high blood pressure themselves, to the accelerated atherosclerotic process, or both.

a) Change in the arteries:

In² the large and medium sized arteries, there is a gradual reabsorption of elastic tissue and replacement of smooth muscle by fibrous tissue. Flow disturbances and endothelial injury may promote atherogenesis. The vessels become dilated, thickened and tortuous, with loss of distensibility.

In the small arteries, medial hypertrophy, intimal thickening and hyaline arteriosclerosis leads to progressive narrowing of the lumen. Micro aneurysms may develop, especially in the retina and brain. Hypertension also accelerates atherothrombotic phenomena in these arteries.

Clinically arterial disease may result in aortic aneurysm, aortic dissection, carotid artery stenosis etc. Peripheral2 vascular disease may present as intermittent claudication and loss of peripheral pulses. Arterial disease is also responsible for many of the complications in other organs like heart, brain, kidney and eyes.

b) Changes in the heart:

Left2 ventricular hypertrophy occurs in response to increased afterload, due to cellular hypertrophy. It is also accompanied by increasing perivascular and perimyocytic fibrosis. While the ventricular hypertrophy is initially beneficial, increasing collagen deposition progressively leads to diastolic dysfunction and ventricular failure in the later stages. Apart from this the increased myocardial oxygen demand and coronary arteriosclerosis leads to ischaemic heart disease.

Clinical implications

LEFT VENTRICULAR HYPERTROPHY

LVH is a powerful predictor of subsequent morbidity and mortality in patients with hypertension. Patients3 with LVH have more chance of developing cardiac failure, myocardial ischaemia, arrhythmias, sudden death and stroke. Hypertensive LVH regresses with therapy, especially with reduction in systolic blood pressure.

HEART FAILURE

Hypertensives have at least 6 times greater risk of heart failure. Initially symptoms of left ventricular failure sets in, like breathlessness on exertion, orthopnoea etc. Later it may end in congestive cardiac failure.

CORONARY ARTERY DISEASE

Hypertension is one of the important risk factors for coronary heart disease (CHD). Blood pressure3 levels have shown to be continuously and positively related to risk of CHD events. Excess24 morbidity and mortality associated with hypertension is largely due to higher incidence of CHD. It may present as myocardial infarction, angina pectoris or sudden death. The16 prognosis of patients of CHD with hypertension is poor as well, with a 1 year mortality of 35%, compared to 25% in normotensives.

c) Changes in the brain:

Cerebrovascular disease2 results in infarction secondary to atherothrombotic phenomena and intracerebral haemorrhage. Intracerebral haemorrhage occurs mainly due to rupture of Charcot - Bouchard micro aneurysms. Rupture of large berry aneurysms of the circle of willis leads to subarachnoid haemorrhage. Damage to very small branches of middle cerebral artery gives rise to lacunar infarcts. Very high blood pressure levels may be associated with cerebral over perfusion and oedema.

Clinical implications

TRANSIENT ISCHAEMIC ATTACKS (TIA)

Transient ischaemic attacks may present as dizziness, light headedness, vertigo, dim vision and syncope. 30%1 of TIA's may eventually progress to stroke.

STROKE

Hypertension is the most important risk factor for stroke. Like3 CHD, blood pressure levels are positively and continuously related to the risk for stroke. The16 risk is more for all the major subtypes, like embolic, thrombosis and haemorrhagic stroke.

DEMENTIA

Multiinfarct2 dementia is usually seen in hypertensives, more in the elderly with systolic hypertension.

HYPERTENSIVE ENCEPHALOPATHY

Hypertensive5 encephalopathy is associated with severe hypertension. Clinically, it presents with fluctuating neurological signs, and signs of increased intracranial pressure - headache, vomiting and retinopathy with papilloedema. This may ultimately lead to seizures, stupor and coma.

d) Changes in the Kidney:

"Benign"2,16 essential hypertension is characterized by nephrosclerosis, which merely reflects the acceleration of age related decrease in renal function. The pathological changes include atherosclerotic narrowing of intrarenal vessels and glomerular sclerosis.

Clinical implications

NEPHROSCLEROSIS

Polyuria¹⁹, nocturia, proteinuria and microscopic haematuria is common in the late stages. But significant impairment of renal function is rare. Although⁵ approximately 10% of hypertensive deaths are due to renal failure, the majority are caused by malignant hypertension.

e) Changes in the Eye:

The¹ initial changes seen in the eyes include thickening , irregularity and tortuosity of the retinal arteries. As the disease progresses, micro aneurysms, haemorrhages, exudates and finally papilloedema sets in, especially in the malignant phase. Circumscribed hard exudates are the result of plasma leakage into the outer layer of the retina. Soft exudates or "cotton wool" spots are focal areas of micro infarction. Haemorrhages in the superficial layers of the retina are flame shaped, while "dot" and "blot" haemorrhages are present in the deeper layers.

Clinical implications

Retina is the only tissue in which the blood vessels can be examined directly, and repeated ophthalmoscopic examinations provide an opportunity to observe the hypertension related arterial changes. The²⁴ Keith - Wagener -Barker classification is a simple method for serial evaluation of hypertensive patients The¹⁴ retinal lesions produce scotomata, blurred vision and even blindness. There²⁵ is an increased risk of morbidity and mortality with Grade III and Grade IV changes. Most of the ocular lesions and visual disturbances clear completely within weeks or months of treatment.

Grade Retinal Changes

Grade I Thickening, irregularity, and tortuosity of arterioles. Increased reflection - "silver wiring"

Grade II Grade I + Constriction of retinal veins at arterial crossings "A-V nipping"

Grade III Grade II + Flame shaped haemorrhages and "cotton wool" exudates

Grade IV Grade III + Papilloedema

Grade	Retinal Changes
Grade I	Thickening, irregularity, and tortuosity of arterioles. Increased reflection - "silver wiring"
Grade II	Grade I + Constriction of retinal veins at arterial crossings "A-V nipping"
Grade III	Grade II + Flame shaped haemorrhages and "cotton wool" exudates
Grade IV	Grade III + Papilloedema

Table 2. Keith - Wagener - Barker classification of retinal changes

f) Malignant Hypertension:

The² malignant phase is a result of very severe hypertension, and is dependent on the severity as well as the speed at which the pressure rises. The endothelium of small arteries and arterioles disrupt due to the high blood pressure, leading to extravasation of plasma constituents into the vessel wall. This is called "fibrinoid necrosis". Endothelial injury also promotes thrombotic occlusion leading to infarction.

High blood pressure also causes overdistension and increased permeability of the blood vessels, resulting in overperfusion. The organs susceptible for damage in malignant hypertension are the kidneys, brain, and retina

Clinical implications

About 1% of hypertensives develop the malignant phase. It is a medical emergency, requiring immediate therapy. It⁵ manifests itself by marked blood pressure elevation, Grade III or IV retinal changes, and

features of hypertensive encephalopathy. Cardiac decompensation and a rapidly deteriorating renal function are the other critical features.

Hypertension: Clinical evaluation

In³⁵ evaluating a patient with hypertension, the initial history, physical examination and laboratory examination should be directed at the following.

- a) Confirmation of the chronic elevation of blood pressure and determination of its level
- b) Detection or exclusion of secondary causes of hypertension
- c) Assessment of severity of target organ damage.
- d) Identification of other cardiovascular risk factors and clinical conditions which may influence the prognosis and treatment

Clinical history

A³ comprehensive clinical history is essential and should include the following:

- " Family history of hypertension, diabetes, dyslipidemia, Coronary heart disease, stroke, or renal disease
- " Duration and previous levels of high blood pressure, with results and side effects of previous therapy.
- " Past history or current symptoms of coronary heart disease and heart failure, cerebrovascular disease, peripheral vascular disease, diabetes mellitus, gout, dyslipidemia, renal disease, other significant illnesses and drugs used etc.
- " Symptoms suggestive of secondary causes of hypertension
- " Assessment of relevant aspects of lifestyle including dietary intake of fat, sodium and alcohol, smoking, physical activity etc.
- " Detailed inquiry of drugs used like oral contraceptives, NSAIDS, steroids etc.
- " Personal, psychological and environmental factors, including family situation, work environment, educational background etc.

Physical examination

A³ complete physical examination is necessary, and should include a careful measurement of the blood pressure as described below. Other important elements of the examination are the following.

- " Measurement of height and weight and calculation of body mass index (Weight in Kg / height in m²)
- " Examination of the cardiovascular system particularly for evidence of enlargement of the heart, signs of arterial disease in the carotid, renal and peripheral arteries and for coarctation of the aorta
- " Examination of the lungs for rales, and the abdomen for arterial bruit, enlarged kidneys or other masses
- " Examination of the optic fundi and the nervous system for evidence of cerebrovascular damage

Blood pressure measurement

Blood pressure³ should be measured with a mercury sphygmomanometer, with the patient in the sitting position. Measurement in the standing position should be considered for the elderly and diabetic patients where orthostatic hypotension is common

When measuring blood pressure, particular care should be taken to ensure the following

- a. Allow the patient to sit for several minutes in a quiet room before measurement.
- b. Use¹ appropriate cuff size so that the bladder length is at least 80% and width at least 40% of the arm circumference
- c. Place the cuff at the level of the heart, with the forearm supported.
- d. Use phase 5 Korotkoff's sound (disappearance) to measure diastolic blood pressure, and record to the nearest 2 mm Hg.

Laboratory investigation

Routine³ investigation in a case of hypertension should include the following

- " Urine analysis for blood, protein and glucose, and microscopic examination
- " Blood chemistry - Potassium, creatinine, fasting glucose and total cholesterol
- " Electrocardiogram

Detailed³ and more specific investigations should be guided by the findings from the history, examination and routine investigations. They should be considered in the context of benefit for the individual patient, its cost, availability of resources etc.

Essential hypertension: Diagnosis

Since² blood pressure level is characterized by large variations, a diagnosis of hypertension should be made only after multiple measurements. Many¹⁷ guidelines advise that the diagnosis should be based on the

average of two or more readings taken at each of two or more visits, after initial screening. Some 17 patients have persistent hypertensive readings in the clinic despite normal home or ambulatory measurement. This is called "white coat hypertension" and has to be suspected in patients who are repeatedly tense during measurement. But they 16 have to be followed up closely, as they are not entirely free from risk of cardiovascular events.

The 14, 19 diagnosis of essential hypertension is made when no evidence of secondary causes is found in the history, examination and investigations. A 14 positive family history is helpful, but its absence may only reflect a failure to detect hypertension in the previous generation. The age group of 35-55 years, which is supposedly more commonly affected, is also misleading; it only shows the arbitrarily selected threshold for diagnosis

Essential hypertension: Natural History

Most 5 untreated cases of essential hypertension develop further increases in their arterial pressure with time. It is associated with a shortening of life span by 10 - 20 years, usually related to the acceleration of the atherosclerotic process. Approximately 25 half the patients die from cardiac disease, one-third from stroke, and 10 - 15% from renal failure.

Higher 19 the blood pressure, and the more severe the retinal changes, worse is the prognosis. In the case of malignant hypertension, less than 5% of the patients survive one year without treatment. But even individuals with mild disease have a high risk of developing significant complications if left untreated.

Essential hypertension: Factors influencing prognosis

The probability of developing a cardiovascular complication for a given level of arterial pressure varies with the presence of other risk factors. Of these, independent risk factors associated with atherosclerosis significantly enhance the effect of hypertension on mortality. The factors indicating adverse prognosis 3 are given in table 3.

The pattern 26 of cardiovascular complication is related to the degree of hypertension. Severe hypertension is associated with complications intimately related to high blood pressure like stroke, heart failure and renal failure. On the other hand, in mild hypertension the risk of myocardial infarction far exceeds that of stroke or other complications.

Cardiovascular Risk Factors Target organ damage Associated clinical conditions Used for risk stratification

Systolic Vs Diastolic Pressure

Traditionally 27, there has been an over reliance on the importance of diastolic pressure as a determinant of cardiovascular risk. Systolic pressure was thought to vary considerably, and a high pressure was believed to reflect a `strong` left ventricle. But 8, 17 population studies and studies of hypertension have consistently shown that systolic pressure is equally, if not more important than diastolic pressure. There is 27 also growing evidence that pulse pressure is related to cardiovascular risk, especially in the elderly.

Essential hypertension: Management

Hypertension 2 is not a disease in the traditional sense, but rather is an indicator of risk for cardiovascular disease. Therefore, treatment of hypertension should not be considered in isolation, but should be part of an overall package of risk reduction. All the reversible risk factors should be addressed, and this implies that lifestyle changes like cessation of smoking are as important as blood pressure reduction itself.

Formal estimation and grading of cardiovascular risk has been proposed, to estimate the prognosis and aid in treatment decisions. Four 3 categories of absolute cardiovascular risk have been defined - Low, medium, high and very high risk. Within each category, the risk of any one individual is determined by the severity of hypertension and number of risk factors involved. A simple table for estimating absolute cardiovascular risk is given below.

Risk Factors Hypertension

Risk Factors	Hypertension		
	Grade I	Grade II	Grade III
No risk factor	Low risk	Medium risk	High risk
1 - 2 risk factors	Medium risk	Medium risk	High risk

3 or more risk factors or TOD* or diabetes	High risk	High risk	Very high risk
Associated clinical conditions	Very high risk	Very high risk	Very high risk

* Target organ damage

Table 4. Stratification of risk to quantify prognosis

The risk of a major cardiovascular event in the next 10 years is less than 15% in the low risk group, 15 - 20 % in the medium risk group, 20 - 30% in the high risk group, and > 30 % in the very high risk group. The patient in the very high risk group requires the most intense and rapidly instituted treatment measures.

Life Style Measures

Lifestyle measures or non pharmacological treatment should be instituted whenever necessary, in all patients. They are used to lower the blood pressure and control other cardiovascular risk factors. Effective implementation of these changes require on the part of the physician enthusiasm, knowledge, patience and time spent with the patients and their families.

The important non pharmacological measures are summarized in the table3, 28, 29

Lifestyle change	Methods	Effect on blood pressure	Effect on risk factors
Smoking cessation	Counseling and treatment	–	Profound beneficial effect
Weight reduction	Change in diet and exercise	1 – 2 mm Hg reduction / Kg drop in weight	Beneficial effect on LVH, hyperlipidemia, diabetes
Salt restriction	Limit dietary intake to < 6 gm/day. Avoid salty food	Reduction of 5 mm Hg systolic and 3 mm Hg diastolic BP	–
Alcohol restriction	Limit to < 20 standard drinks / week	Reduction in blood pressure dependent of quantity	–
Increase fruits and vegetables, limit fat intake	Change in diet	Reduction of 6 mm Hg systolic and 3 mm Hg diastolic BP	Improves lipid profile. Helps in weight reduction
Increase fish consumption	Change in diet	Help blood pressure reduction in obese patients	Improves lipid profile. Helps in weight reduction
Increase physical activity	Aerobic exercises e.g. Brisk walking for 30 – 45 mts, 3-4 days	Reduction of 4 mm Hg systolic and 3 mm Hg diastolic BP	Improves lipid profile. Helps in weight reduction

Lifestyle change	Methods	Effect on blood pressure	Effect on risk factors
	a week		
Stress reduction	Counseling, relaxation techniques, Yoga etc.	Beneficial effect	Beneficial effect

Table 5. Non pharmacological approaches in the management of hypertension

Smoking cessation²⁴ is the **single most powerful** lifestyle measure in improving the prognosis. Apart from those mentioned in table 5, appropriate changes should also be instituted in other situations e.g. diabetes associated with hypertension.

Benefits of conventional treatment

Evidence² from controlled trials show that anti-hypertensive therapy prolongs life, mainly by reducing the risk of stroke, heart failure and renal failure, but the effect on coronary heart disease (CHD) is not as marked. A 5 mm Hg reduction in blood pressure is associated with 35 -40 % reduction in risk of stroke, while the risk for CHD is reduced by only 16 %. In other words, drug treatment reduces the risk of stroke almost completely, but the reduction in CHD risk is only about half as expected.

Even though the trials show such obvious benefits with conventional treatment, there are difficulties in translating them into practice at the community level. Population studies^{3,30} show that treated hypertensives still continue to have a substantially higher risk of CHD, stroke and overall mortality compared to the normotensive population.

The problem is compounded by the "rule of halves", especially in developing countries. Even in the developed countries, some studies show that only about 27% of the patients have their blood pressure adequately controlled.

The¹⁷ cause of such low levels of control is probably multifactorial. The failure on the part of the physicians to check blood pressure routinely, the lack of appreciation of risks involved, and poor patient compliance are important factors. The latter can be attributed to the side effects of drugs and the asymptomatic nature of the illness.

The Problem of Mild Hypertension

The management of mild to moderate hypertension is a major concern in the field of hypertension control. The^{31,8} bulk of the hypertension related morbidity and mortality can be attributed more to the large number of patients with mild hypertension, than to the few with severe or malignant hypertension. It¹⁴ is estimated that approximately half the hypertensive deaths in the Framingham heart study had blood pressure in the range of 140 -160 mm Hg (systolic) and 90 - 96 mm Hg (diastolic).

At the same time, this group stands to gain the least from drug therapy. Two-third²⁶ of all complications in patients with mild hypertension are coronary events, but treatment does not offer as much protection against coronary heart disease as it does against stroke. Further, all effective drugs developed have potential for harm as well as good, and any benefit may be offset by the adverse effect of the drugs themselves.

Economics of treatment

Apart from disadvantages mentioned above, there are questions of practicability and economics to be considered. Since mild hypertension does not have high initial levels of risk, absolute benefits of treatment are also proportionately less. It⁴ is estimated that 100 patients would have to be treated for 85 years (850 patient years) to prevent a complication like stroke in one of them. With^{31,32} such large numbers involved, overall cost of treatment compared to likely benefits is prohibitive. The cost³¹ of preventing one stroke would be more than £20,000, even when using the cheapest drugs.

ESSENTIAL HYPERTENSION: HOMOEOPATHIC CONCEPT

Homoeopathy³³ considers health as a state indicating harmonious functioning of the life force. Disease is a deviation from health, which develops when the life force is unable to overcome obstructions to its smooth functioning. It can be seen as the total response of the organism to adverse environmental factors, internal or external, conditioned by constitutional factors, inherited or acquired. This stands true for all diseases, including essential hypertension.

A closer examination of the modern concepts of health and disease accepted in the medical world today shows that they are coming closer to the Homoeopathic model. Perhaps nothing epitomizes this better than the aetiological concepts of essential hypertension, which is seen as a product of "constitutional" and environmental factors.

Notwithstanding these similarities, there remain for the most part significant differences in the concept of disease in both systems. The essence of this difference is contained in the Hahnemannian statement, "There³⁴ are no diseases, but sick people". Perhaps a more eloquent exposition is given by Dr. Kent in his lecture on "The sick". He says "the allopath thinks that the house in which the man lives in, which is being torn down, expresses all there is in sickness. In other words, tissue changes are all there is to the sick man. But homoeopathy perceives that there is something prior to the results. It is the man who is sick and has to be restored to health, not his body, not his tissues".

Thus in the case of essential hypertension, homoeopathy focuses on the patient³⁵ with the hypertension, rather than on the hypertension itself. The totality of various characteristic signs and symptoms exhibited by this patient leads the homoeopath to the similar remedy. The similar remedy relieves the totality of symptoms, and with it the symptom of an elevated blood pressure.

Essential Hypertension: Miasmatic Influences

Miasms³⁶ are the constitutional or diathetic states which determine the mode of existence of the individual. It³⁷ can be seen as a predisposition towards various chronic diseases. With this understanding of the miasms, we can easily see that it corresponds to the "constitutional or hereditary influences" in the genesis of essential hypertension, described by the conventional school.

Hahnemann described three basic miasms which he believed to be the underlying causes of chronic diseases. In any given patient, there could be the influence of one miasm, or any combination of them. An accurate miasmatic diagnosis depends on the symptoms and signs of the individual patient. However, a broad understanding of the miasmatic influences in essential hypertension is possible from the examination of the aetiological factors, pathology and clinical presentation in general.

Aetiological factors

High salt intake - desire for salt³⁸ is a pseudo psoric trait

Obesity - Tendency for obesity is sycotic

High Fat intake - Desire for fat is pseudo psoric

Alcohol consumption - Desire³⁹ for alcohol is pseudo psoric

Psychological factors - Tendency^{39,33} to be affected by suppressed emotions, grief, sorrow is psoric

Pathogenesis and pathology

The initial "labile" phase in the development of hypertension is thought to be due to the hyper reactivity of the vasculature or due to a hyperactive sympathetic nervous system. Hyperactivity⁴⁰ is a psoric trait. Later on hypertrophic changes occur in the walls of the arteries and arterioles. Sclerotic changes also occur as age advances. These represent the sycotic and tubercular influences.

In malignant hypertension, the predominant pathology is necrosis of the arterioles, showing a clear influence of the syphilitic miasm.

Clinical presentation

The asymptomatic presentation in many cases, in spite of sustained hypertension with pathological changes, clearly indicate that psora is not the only miasmatic influence. The³⁹ purely psoric patient is usually the victim of many unpleasant sensations. It is the syphilitic or sycotic stigmata which usually present with only a few or no symptoms at all.

On examination of the more common symptoms, we find that occipital³⁸ headache is syphilitic in origin. Vertigo is the other symptom more frequently complained of, and the psoric miasm³⁸ is known to produce

many kinds of vertigo. But it is the union of syphilis and psora which stresses it to a marked degree. From the miasmatic analysis given above, it is clear that essential hypertension is a disorder with multi-miasmatic influences, with strong psoric and pseudo-psoric influences. Many authors^{39,33} have classified hypertension under the pseudo-psoric miasm. But it is quite possible that the individual presentation and course of the disease depends on the relative predominance of different miasmatic influences. An examination of the symptoms of the different miasms relating to the cardiovascular system may be helpful in understanding the different presentations possible.

A. Psoric predominance

Patients⁴⁰ with psoric predominance typically have labile hypertension or hypertension caused by emotional disturbances like anger, anxieties worry, grief etc. Over⁴¹ a period of time, when these factors settle down, the blood pressure elevation may also subside.

They³⁹ are prone to be more symptomatic, complaining of dizziness, dyspnoea, palpitations etc. which are better by lying down and keeping quiet and worse⁴¹ after eating. Neuralgic and stitching pains in the chest, > rest, and band sensations around the heart may also be complained of. Sensations like rush of blood to the chest, weakness, goneness or fullness about the chest are common.

The psoric element makes sure³⁹ that there are many sensations, concomitants and modalities, giving a true picture of the suffering. The heart symptoms are always associated with great anxiety and fear, always fear that they will die from heart trouble. The symptomatology is strongly influenced by emotions like joy, grief, anxiety etc

B. Syphilitic predominance

The predominantly³⁹ syphilitic patient is usually asymptomatic. They may have for many years a slight dyspnoea or pain or perhaps no symptoms at all. They have few subjective symptoms, desires or longings. Typically, they have little mental disturbance accompanying the heart conditions, even when they are critical. But it is these patients who are prone to die suddenly and without warning, their lives "snuff out" like a candle.

The^{40,41} syphilitic influence in essential hypertension leads to widespread destructive changes in the vital organs like heart, kidney, retina and brain. Many of the life threatening complications of hypertension, like cerebral and myocardial infarction, malignant phase etc. shows the influence of this miasm

C. Pseudo-psoric Predominance

The³⁹ Pseudo psoric or tubercular miasm may reflect many of the subjective symptoms, the mental and emotional reactions of the predominant parent, Psora as well as the pathological changes of the younger parent, syphilis. Hypertensives⁴¹ with the tubercular dimension are likely to have wide fluctuations in blood pressure to very high levels of systolic and diastolic pressures. They are prone to haemorrhagic manifestations like epistaxis, retinal haemorrhage, cerebral haemorrhage etc.

In³⁹ the tubercular as in the psoric heart conditions, the patient wants to keep still. They are much aggravated by higher altitude, climbing stairs or ascending. Vertigo and palpitation are greater than that of psora and are accompanied by rush of blood to heart and chest. The pains are worse sitting, better lying, and are so severe that they are associated with dimness of vision, ringing in the ears and great weakness. The heart complaints may be associated with a greater falling away of flesh.

D. Sycotic Predominance

In the predominantly sycotic patient, the subjective symptoms are less, like the syphilitic. We³⁹ find none of the fears and apprehensions of the psoric patients, but these are the conditions that have a fatal outcome. In essential hypertension, the sycotic element may be responsible for marked³⁸ ventricular hypertrophy. The³⁹ combination of psora with sycosis may also cause marked changes of structure of the heart, as well as dropsical conditions.

As³⁸ a rule the sycotic patients are fleshy and puffy, their obesity contributing to their dyspnoea. The dyspnoea is seldom painful, as opposed to the psoric or tubercular miasms. There may be soreness and tenderness and pains radiating from heart to scapula or from shoulder to heart. These pains are ameliorated by motion, walking, riding or gentle exercise. The⁴¹ heart complaints may be accompanied by or there may be a past history of suppressed rheumatic symptoms.

Essential Hypertension: Homoeopathic Management

The homoeopathic management of essential hypertension, like all other disease conditions is based on the principle of similia. Being a chronic disease, it requires constitutional, antimiasmatic treatment. Smaller or

lesser known remedies may be required to control high blood pressure or to manage the complications. While agreeing with the conventional school on the necessity for lifestyle changes, it departs radically in all other aspects of management.

As mentioned earlier, it is the totality of symptoms which guides the homoeopath to the indicated remedy. Thus any remedy³⁵ in the materia medica may be potentially capable of bringing down the elevated blood pressure.

In the search for the similar remedy, homoeopathy lays emphasis on the individuality of the patient. In §153 of the Organon, Hahnemann makes it clear that it is the³³ peculiar, characteristic and individualizing symptoms, and not the common symptoms that denote the similimum.

Hahnemann also stressed the prime importance of the mental symptoms in all physical disorders. He said that the⁴² mental disposition and emotional reactions are too be particularly noted, as they often determine the remedy selection. This will apply quite naturally to cases of essential hypertension, where psychological factors play a significant part in the causation of illness.

While treating diseases with multimiasmatic influences like essential hypertension, it is also important that the remedy selected correspond^{33,39} to the dominant miasm. This is very often found to be the psoric miasm. Afterwards, the dormant syphilitic or sycotic miasm, as the case may be, manifests itself and may call for appropriate changes in remedy.

Even in predominantly⁴² psoric cases, several antipsoric remedies may be required, each one homoeopathically chosen in consonance with the group of symptoms remaining after completion of action of the previous remedy.

Difficulties in treatment

One Sided Expression:

One of the difficulties the practitioner may face in treating essential hypertension is the paucity of symptoms or the absence of peculiar symptoms. Truly one sided⁴² cases are very difficult to treat and are very often incurable. Dr. Kent has emphasized this point saying " all³⁴ curable diseases make themselves known to the physician by signs and symptoms. You must not expect to cure when the peculiar symptoms are absent."

However, Dr. Hahnemann warns us that very often these cases become one sided because⁴² of the medical observers want of discernment. A complete and thorough case taking is warranted in such cases and a remedy is to be selected based on the few symptoms available. Very often "accessory symptoms" may come up after the administration of the medicine and facilitate the discovery of a more homoeopathic remedial agent. Subsequent prescriptions are to be made depending on the symptoms remaining, until recovery is complete.

Patients Under Conventional Treatment:

Majority of the patients with essential hypertension approach the homoeopathic physician after undergoing some form of allopathic treatment. Cases which have undergone prolonged treatment for hypertension and other illnesses are very difficult to treat³⁷, as the original symptomatology is often not available.

Prolonged³⁴ drugging also weakens the life force, and develop their own chronic symptoms. Hahnemann says about such cases in general " They⁴² often require a much longer time for their recovery, often indeed are they incurable"

As^{37,42} far as possible, an attempt should be made to trace the symptoms before the onset of treatment, to get an idea about the original form of the disease. One⁴¹ should not discontinue the allopathic treatment abruptly; sudden withdrawal may do more harm than good. When³⁷ the homoeopathic remedies seem to have an effect, the drugs may be reduced very cautiously. These cases may also require some knowledge of the allopathic drugs on the part of the homoeopathic physician

Scope and Limitations of treatment

While examining the scope and limitation of homoeopathy in essential hypertension, it may be useful to keep in mind the words of Dr. Stuart Close. He says that the sphere of homoeopathy is in "affections⁴³ of the living organism where perceptible symptoms exist, similar to that produced by pathogenetic means, in organisms having the integrity of tissues and reactive powers of recovery, the exciting causes of the affections and the obstacles to recovery having been removed."

The statement is very much true in cases of essential hypertension. While homoeopathy can be beneficial in many cases, one must be wary of taking up cases where the remedy image is not perceptible, where there is damage to the vital organs or the general vitality is poor.

Essential Hypertension: Homoeopathic Therapeutics

Hypertension as a clinical entity is not described in most well known works on materia medica or therapeutics. It is also not represented in most olden repertories, including Kent's repertory. However, many authors have grouped remedies under the heading of the related pathological process of "arteriosclerosis", and these may be useful in cases of hypertension. Another related term, that is described in the materia medica and repertory is "threatened apoplexy". The remedies grouped under this heading also may be useful in high rise of blood pressure, especially when symptoms of cerebral congestion are present.

Remedies for hypertension

The remedies found useful in the treatment of hypertension can be collected from the repertories published in recent times, which have a separate rubric for hypertension. A description of the remedies for hypertension can also be found in the more recent works on materia medica and therapeutics.

General repertories:

A comparison of the remedies and their grades compiled from three modern general repertories - Synthesis⁴⁴ repertory (rubric - Generals, Hypertension - 100 remedies), Murphy's repertory⁴⁵ (rubric - Blood, Hypertension, high blood pressure - 79 remedies) and Complete repertory⁴⁶ (rubric - Generalities - Hypertension - 107 remedies) are given below. It should be noted that three marks represent the highest grade in Murphy's repertory, while the other repertories have a still higher grade.

Three marks:

Synthesis repertory:
Veratrum album.

Murphy's repertory:
Crataegus oxyacantha, Natrium muriaticum, Lachesis mutus, Veratrum album.

Complete repertory:
Veratrum album

Two marks:

Synthesis repertory:
Adrenalinum, Aurum metallicum, Baryta carbonica, Gratiola officinalis, Plumbum metallicum, Rauwolfia serpentina, Secale cornutum, Strontium carbonicum, Strontium iodatum, Sumbulus moschatus, Viscum album.

Murphy's repertory:
Adrenalinum, Aurum metallicum, Baryta carbonica, Calcarea carbonica, Glonoinum, Gratiola officinalis, Nux vomica, Plumbum metallicum, Rauwolfia serpentina, Secale cornutum, Strontium carbonicum, Sulphur, Sumbulus moschatus.

Complete repertory:
Adrenalinum, Aurum metallicum, Baryta carbonica, Gratiola officinalis, Kalium chloricum, Natrium muriaticum, Plumbum metallicum, Rauwolfia serpentina, Secale cornutum, Strontium carbonicum, Strontium iodatum, Sumbulus moschatus, Viscum album, Sumbul.

One mark:

Synthesis repertory:

Aconitum napellus, Adonis vernalis, Agaricus muscarius, Amylenum nitrosum, Anhalonium lewinii, Antimonium arsenicosum, Aranea diadema, Aranea ixobola, Argentum nitricum, Arnica montana, Arsenicum album, Asarum europeum, Asterias reubens, Aurum bromatum, Aurum muriaticum, Aurum muriaticum natronatum, Baryta muriatica, Belladonna, Cactinum mexicanum, Calculus renalis, Calcarea flourica, Calcarea phosphorica, Causticum, Chininum sulphuricum, Chlorum, Chloramphenicolum, Chlorpromazinum, Chocolate, Coffea cruda, Convolvulus stans, Corticotropinum, Cortisonum, Cuprum aceticum, Cuprum metallicum, Cynara scolimos, Cytisus laburnum, Digitalis purpurea, Ergotinum, Espiletia grandiflora, Flouricum acidum, Gelsemium sempervirens.

Ignatia amara, Iris versicolor, Kalium carbonicum, Kalium muriaticum, Kalium phosphoricum, Kalium salicylicum, Kresolum, Latroductus mactans, Lycopodium clavatum, Magnesium carbonicum, Mandragora officinalis, Methysergidum, Naja tripudians, Natrium metallicum, Nitricum acidum, Onopordon acanthium, Phosphoricum acidum, Phosphorus, Picricum acidum, Pituitaria posterior, Plumbum iodatum, Psorinum, Pulmo

anaphylacticus, Pulsatilla pratensis, Radium bromatum, Reserpine, Rhus toxicodendron, Sanguinaria Canadensis, Sepia officinalis, Silicea terra, Squilla maritima, Tabacum, Thallium, Thlaspi bursa pastoris, Thuja occidentalis, Valeriana, Vanadium metallicum, Veratrum viride.

Murphy's repertory:

Aconitum napellus, Agaricus muscarius, Amylenum nitrosum, Aranea diadema, Argentum nitricum, Arsenicum album, Asarum europeum, Asterias reubens, Aurum iodatum, Aurum muriaticum, Aurum muriaticum natronatum, Baryta muriatica, Calcareo flourica, Calcareo phosphorica, Calculus renalis, Causticum, Chininum sulphuricum, Coffea cruda, Conium maculatum, Cortisonum, Cuprum metallicum, Cuprum aceticum, Cuprum arsenicosum, Digitalis purpurea, Flouricum acidum, Ignatia amara, Iodium, Iris versicolor, Kalium arsenicosum, Kalium carbonicum, Kalium muriaticum, Kalium phosphoricum. Latroductus mactans, Lycopodium clavatum, Lycopus virginicus, Magnesium carbonicum, Naja tripudians, Nitricum acidum, Phosphoricum acidum, Phosphorus, Picricum acidum, Pituitaria posterior, Psorinum, Pulsatilla pratensis, Radium bromatum, Reserpinum, Rhus toxicodendron, Sanguinaria Canadensis, Scopolia carnolica, Sepia officinalis, Silicea terra, Squilla maritima, Strophanthus hispidus, Tabacum, Thallium metallicum, Thlaspi bursa pastoris, Thuja occidentalis, Valeriana, Vanadium metallicum, Veratrum viride, Viscum album.

Complete repertory:

Aconitum napellus, Adonis vernalis, Agaricus muscarius, Allium sativum, Amylenum nitrosum, Anhalonium lewini, Antimonium arsenicosum, Aranea diadema, Aranea ixobola, Argentum nitricum, Arnica montana, Arsenicum album, Asarum europeum, Asterias reubens, Atropinum, Aurum bromatum, Aurum iodatum, Aurum muriaticum, Aurum muriaticum natronatum, Bacillus morgan, Baryta muriatica, Belladonna, Calcareo carbonica, Calcareo flourica, Calcareo phosphorica, Calculus renalis, Causticum, Chininum sulphuricum, Chloramphenicolum, Chlorpromazinum, Chocolate, Coffea cruda, Conium maculatum, Convolvulus stans, Corticotropinum, Cortisonum, Crataegus oxyacantha, Cuprum metallicum, Cuprum aceticum, Cuprum arsenicosum, Cynara scolymus, Cytisus laburnum, Digitalis purpurea, Ergotinum, Espeletia grandiflora, Flouricum acidum, Gelsemium sempervirens, Glonoinum, Hyosciaminum, Ignatia amara, Iodium, Ipomoea purpurea, Iris versicolor, Kalium carbonicum, Kalium phosphoricum, Kalium salicylicum, Kresolum, Lachesis mutus, Latroductus mactans, Lycopodium clavatum, Lycopus virginicus, Magnesium carbonicum, Mandragora officinarum, Methysergidum, Naja tripudians, Nitricum acidum, Nux vomica, Onopordon acanthium, Phosphoricum acidum, Phosphorus, Picricum acidum, Pituitaria posterior, Plumbum iodatum, Psorinum, Pulsatilla pratensis, Radium bromatum, Reserpinum, Rhus toxicodendron, Sanguinaria Canadensis, Sarothamnus scoparius, Sepia officinalis, Serum anguillae, Silicea terra, Squilla maritima, Strophanthus hispidus, Sulphur, Tabacum, Thallium metallicum, Thlaspi bursa pastoris, Thuja occidentalis, Valeriana, Vanadium metallicum, Veratrum viride.

The comparison throws up interesting observations, like the absence of a common remedy like Natrium muriaticum in Synthesis repertory. Murphy's repertory gives it in the first grade. It also elevates the grading of other polychrests like Sulphur, Nux vomica and Calcareo carbonica, which are only given in one mark in Synthesis. Complete repertory on the other hand mentions many partially proved or "smaller" remedies like Allium sativum, Serum anguillae, Hyosciaminum etc. which are not mentioned in the other repertories, but only one mark is given to important remedies like Lachesis and Glonoine.

Clinical repertories

A. Therapeutic Index appended to Pocket Manual of Homeopathic Materia Medica⁴⁷ by William Boericke

Arterial tension - raised :

Veratrum viride, Viscum album

Blood-pressure - high:

Baryta muriatica, Aurum metallicum, Glonoinum, Viscum album.

B. Repertory index to Materia Medica of Nosodes with Repertory⁴⁸ by

O.A Julian

Hypertension:

Bacillus Morgan, Bacillus 7, Streptococcinum

C. Clinical repertory to Dictionary of Homoeopathic Materia Medica⁴⁹ by

O. A. Julian

Hypertension, arterial:

Asterias reubens, Chlorpromazinum, Cresol, Cynara scolymus, Cytisus laburnum, Hypophysis posterior,

Mandragora officinalis, Thallium metallicum.

Essential:

Viscum album

It is interesting to note that Rauwolfia serpentina is mentioned in the rubric "Hypotension".

D. Repertory part of Realistic Materia medica with Therapeutic Repertory⁵⁰ by Dr. N.K. Banerjee

Blood pressure: High (* - Higher grade)

Aconitum napellus*, Amylenum nitrosum*, Aurum metallicum*, Baryta carbonica*, Crataegus oxyacantha*, Glonoinum*, Natrium iodatum, Passiflora incarnata, Viscum album

Materia medica and Therapeutics

The remedies for hypertension mentioned by different authors in the various materia medicae and works on homoeopathic therapeutics are given below.

A. The Prescriber⁵¹ by J.H. Clarke

Aconitum napellus, Veratrum viride, Viscum album, Guipsine.

B. Practical Homoeopathic Therapeutics⁵² by W.A. Dewey

Plumbum met, Adrenalinum, Natrium iodatum, Aconitum napellus, Glonoinum.

C. Materia Medica of Homoeopathic Medicines⁵³ by Dr. S.R. Phatak

Aconitum napellus, Baryta carbonica, Baryta muriatica, Coffea cruda, Crataegus oxyacantha, Plumbum metallicum, Sumbulus moschatus, Tabacum, Uranium nitricum, Veratrum viride.

D. Pocket Manual of Homeopathic Materia Medica⁴⁷ by William Boericke

Aurum metallicum, Aurum mur natronatum, Baryta muriatica, Ergotinum, Iodium, Pituitaria glandula, Plumbum metallicum, Strontium carbonicum.

E. Materia Medica Viva⁵⁴ (vols.1-6) by George Vithoulkas

Adrenalinum, Ailanthus glandulosa, Allium sativum, Anhalonium lewinii, Ambra grisea, Ammonium carbonicum, Ammonium muriaticum, Antimonium crudum, Asarum europeum, Asterias reubens, Aurum muriaticum natronatum, Baryta carbonica, Belladonna, Cactus grandiflorus.

F. The Essence of Materia Medica⁵⁵ by George Vithoulkas

Dulcamara, Lachesis mutus, Staphysagria

G. Homoeopathic Practice⁵⁶ by Alfons Geukens

Apis mellifica, Asterias reubens, Aurum metallicum, Baryta carbonica, Conium maculatum, Glonoinum, Ignatia amara, Kalium carbonicum, Lachesis mutus, Mercurius solubilis, Natrium muriaticum, Nux vomica, Phosphorus, Plumbum metallicum, Pulsatilla pratensis.

H. Arterial hypertension⁷² by Dr. Francois Cartier

Remedies having hypertensive action in crude doses:

Aconitum napellus, Adonis vernalis, Adrenalinum, Arnica montana, Baryta carbonica, Baryta muriatica, Belladonna, Coffea cruda, Convallaria majalis, Crataegus oxyacantha, Glonoinum, Hypophysis posterior, Opium, Salamander, Secale cornutum, Serum anguillae, Strophanthus hispidus.

Constitutional remedies:

Aurum metallicum, Aurum iodatum, Nux vomica, Lycopodium clavatum, Sulphur, Sanguinaria canadensis

I. Bedside Clinical Tips⁵⁷ by Dr. Farokh J. Master

Aurum metallicum, Diphtherinum, Hypophysis posterior, Lachesis mutus, Morgan pure, Psorinum, Serum anguillae, Spartium scoparium, Syphilinum, Tuberculinum bovinum, Tuberculinum marmorek, Viscum album

J. Homoeopathic Gems⁵⁸ by Dr. D.P. Rastogi

Observation by Dr. John Robertson Raeside:

Argentum metallicum, Aurum metallicum, Lachesis mutus, Plumbum metallicum, Rauwolfia serpentina, Strontium carbonicum, Veratrum viride

Observation by Dr K.G. Priestman: Arnica montana, Staphysagria

Observation by Dr. DM Gibson: Naja tripudians

Observation by Dr. Thomas Douglas Ross: Kalium phosphoricum

K. Homoeopathic Treatment for Asthma and Blood pressure⁵⁹ by Dr. S. G. Palsule

Main remedies:

Avena sativa, Glonoinum, Amylenum nitrosum, Apis mellifica, Baryta muriatica, Cuprum arsenicosum, Passiflora incarnata, Veratrum viride

Other remedies:

Aconitum napellus, Aurum metallicum, Belladonna, Calcarea arsenicosa, Calcarea flourica, Ferrum phosphoricum, Kalium carbonicum, Mercurius solubilis, Sulphur.

L. Quick Bed-side Prescribe⁶⁰ by J.N. Shinghal

Blood pressure high:

Lachesis mutus, Aurum metallicum, Cannabis indica, Baryta muriatica, Bryonia, Adrenaline chloride.

M. Select Your Remedy⁶¹ by Rai Bahadur Bishamber Das

Blood pressure-High (Hypertension):

Lachesis mutus, Aurum metallicum, Aconitum napellus, Allium sativum, Strophanthus hispidus, Plumbum metallicum, Natrium muriaticum, Carbo animalis, Gelsemium sempervirens, Ignatia amara, Glonoinum, Baryta muriatica, Veratrum viride, Belladonna, Arsenicum album, Thuja occidentalis, Adrenalinum.

Control of high rise of blood pressure

Even though Constitutional treatment is the mainstay of homoeopathic management, it may be very much necessary in some cases to bring down the high blood pressure without delay. These may be cases where the blood pressure elevation is very high, or there are already some damage to the vital organs, making the occurrence of a cardiovascular complication very likely.

In such situations, the initial prescription should be one capable of bringing the blood pressure down⁶² to reasonable limits. Here the knowledge of drugs known to be effective in such conditions, especially "smaller" or partially proved drugs, may be useful. They may also be required in cases when there is a paucity of characteristic symptoms, especially the ones dependent on allopathic drugs.

As mentioned earlier, the rubric for "threatened apoplexy" may be helpful in some cases, especially when symptoms of cerebral congestion are present. The following are some of the important rubrics and remedies useful in cases with high rise of blood pressure.

A. Murphy's repertory⁴⁵

Blood, Hypertension, Sudden rise:

2 marks - Glonoinum 1 mark - Coffea cruda

B. Blood Pressure - Its Aetiology and Treatment⁶² by Dr. N.K. Banerjee

Highest rank:

Cactus grandiflorus, Glonoinum, Rauwolfia serpentina, Amylenum nitrosum, Lycopus virginicus, Spartium scoparium, Terminalia arjuna.

Others:

Aconitum napellus, Belladonna, Crataegus oxyacantha, Kalium phosphoricum, Digitalis purpurea, Convallaria majalis.

C. Arterial hypertension⁷² by Dr. Francois Cartier

Aconitum napellus, Belladonna, Glonoinum.

According to Dr. Cartier, Aconite is the most important remedy in treating acute rise of blood pressure. He says "Aconitum napellus stands at the top, perhaps the principal medicament in the present condition of homoeopathic science for acting quickly in cases of acute hypertension. In arteriosclerosis, a very high blood pressure can be reduced from time to time by the use of Aconite for a few days to a week."

D. Bedside Clinical Tips⁵⁷ by Dr. Farokh J. Master

Sudden rise:

Adrenalinum

Hypertension, excessive:

Toxoplasma nosode

E. Synthesis repertory⁴⁴

Generals, Apoplexy, threatened:

3 marks: Coffea cruda

2 marks: Asterias reubens, Belladonna, Flouricum acidum, Glonoinum, Laurocerasus, Strontium carbonicum.

1 mark: Bryonia alba, Cactus grandiflorus, Ignatia amara, Kalium nitricum, Laurocerasus, Primula veris.

C. Repertory to Pocket Manual of Homeopathic Materia Medica⁴⁷ by Oscar E. Boericke

Circulatory system, Rupture of arteries (apoplexy), predisposition to or threatened:

Italics : Aconitum napellus, Belladonna, Gelsemium sempervirens, Glonoinum, Lachesis mutus, Nux vomica, Opium, Phosphorus.

Plain type: Arnica montana, Arsenicum album, Baryta carbonica, Calcarea flourica, Guaco, Hyoscyamus, Laurocerasus, Strontium carbonicum.

Therapeutic hints in Hypertension

Various authors have given therapeutic hints for the selection of remedies in cases of hypertension.

According to Alphons Geukens⁵², the remedies which withhold their emotions, who cannot express their feelings, are the most important remedies for hypertension - Natrum muriaticum, Kalium carbonicum, Aurum metallicum, Apis mellifica, Conium maculatum, Mercurius and Baryta carbonica. Apis mellifica and Conium maculatum develop hypertension from suppressed sexual desire.

Therapeutic hints mentioned by some of the other authors are given below.

- 1) From sudden shock due to bad news⁶¹ - Gelsemium sempervirens
- 2) Hypertension because of some insult⁵⁸ - Staphysagria
- 3) With personal or parental history of coronary thrombosis⁶¹ Thuja occidentalis
- 4) As an intercurrent remedy, in persons wasting in health⁶² Tuberculinum
- 5) In fleshy persons who eat a great deal, especially non-vegetarians⁶¹ Allium sativum
- 6) Hypertension in those engaged in mental work, teachers and professionals who are exhausted from worry⁵⁹ Avena sativa
- 7) Nervous hypertension, levels go up and down⁵⁶ Ignatia amara, Nux vomica
- 8) With high difference between systolic and diastolic pressures⁶² Baryta muriatica
- 9) With cracks on fingers⁵⁶ - Baryta carbonica
- 10) With roaring in ears⁶¹ - Adrenalinum
- 11) With acute nasal obstruction^{47, 53} - Iodium
- 12) With insomnia - Passiflora incarnata⁵⁹, Crataegus oxyacantha⁶³
- 13) With redness of face Belladonna⁵⁴, Adrenalinum⁵⁴, Asterias reubens⁵⁴, Strontium carbonicum⁴⁶
- 14) With throbbing headache, flushed face, tachycardia, hot body and cold extremities⁵⁴ Belladonna, Adrenalinum
- 15) With red face, feeling of hot air around the head, and fear of apoplexy⁵⁴ Asterias reubens
- 16) With profuse nose bleed ameliorating the headache⁶³ Hamamelis virginiana, Melilotus alba
- 17) With full hard, bounding pulse, and congestive symptoms⁵¹ Veratrum viride
- 18) With obstinate occipital headache⁶¹ - Carbo animalis
- 19) With suppurative conditions in warm blooded persons⁶³ Calcarea sulphurica
- 20) Hypertension with pulmonary lesions⁶² - Phosphorus
- 21) Hypertension with hyperthyroid phenomena⁴⁹ - Thallium metallicum
- 22) Hypertension with diabetes mellitus⁶³ - Lac vaccinum defloratum
- 23) Hypertension with albuminuria⁴⁶ - Viscum album
- 24) In pregnant women with pre-eclampsia, Hypertension, oedema⁵⁶ Apis mellifica

25) Hypertension at climacteric

Glonoinum⁶², Sanguinaria Canadensis⁶², Lachesis mutus⁶², Sepia officinalis⁶², Cactus grandiflorus⁶², Amylenum nitrosum⁵⁹ Sulphuricum acidum⁶⁴, Conium maculatum⁶³

26) Hypertension with arteriosclerosis

Adrenalinum⁶², Baryta carbonica⁶², Baryta muriatica⁶⁰, Aurums⁶², Plumbum metallicum⁶², Strophanthus hispidus⁶², Viscum album,⁵¹ Sumbulus moschatus⁵³

27) Hypertension with cardiac hypertrophy⁵⁷ - Crataegus oxyacantha

28) Hypertension with nephrosis⁵⁷ - Fumaricum acidum

29) Insufficiency of the left ventricle due to Hypertension⁶⁵

Baryta carbonica, Sulphur, Lachesis mutus, Aurum metallicum, Glonoinum

Tissue remedies

Arteriosclerosis⁶⁶
 Natrium phosphoricum, Silicea terra, Natrium sulphuricum
 High blood pressure due to arteriosclerosis⁶⁷
 Calcarea flourica, Ferrum phosphoricum

Nosodes

Psorinum,⁵⁷ Syphilinum, Tuberculinum bovinum, Diphtherinum, Streptococcinum⁴⁸
 Bowel nosodes⁴⁸ - Bacillus morgan, Bacillus No. 7
 Severe hypertension - Toxoplasma nosode⁵⁷

Drainage remedies

Drainage of arteries⁶⁸ in arterial hypertension
 Sulphur, Cereus bonplandii

Indian drugs

Boerhaavia diffusa⁶⁹, Rauwolfia serpentina⁶⁹, Terminalia arjuna⁶²

Potency selection

The selection of the potency in Essential Hypertension is not different from that for other disease conditions. Various factors like susceptibility, degree of similarity, presence or absence of structural changes, general vitality of the patient etc. are taken into account before selecting the appropriate potency in each case.

Aconitum napellus: 1 ^C , 6 ^{T,F} , 30 ^{T,F}	Adrenalinum: 3 ^W , 6 ^W , 12 ^W
Allium sativum: Q ^D	Amylenum nitrosum: 30 ^P
Aurum metallicum: 200 ^M , 6 ^G 30 ^{B,G}	Aurum muriaticum: 30 ^G
Avena sativa: Q ^P , 200 ^P	Baryta carbonica: 30 ^G
Baryta muriatica: 200 ^P , 6 ^G , 30 ^G	Belladonna: 6 ^G , 30 ^G
Crataegus oxyacantha: Q ^M	Diphtherinum: 200 ^M
Fumaricum acidum: 200 ^M	Gelsemium sempervirens: 1M ^D
Glonoinum: 3 ^F , 6 ^G , 200 ^P , 30 ^G	Hypophysis posterior: 200 ^M
Ignatia amara: 200 ^D , 30 ^G	Lachesis Mutus: 200 ^M , 1M ^D , 30 ^G
Morgan pure: 200 ^M	Natrium iodatum: 1X ^W , 3X ^W , 6X ^W
Natrium muriaticum: 200 or higher ^D	Passiflora incarnata: 200 ^P , 1M ^P
Plumbum metallicum: 6 ^G , 30 ^G	Psorinum: 200 ^M
Serum anguillae: 200 ^M	Spartium scoparium: Q ^M

Syphilinum: 200 ^M	Toxoplasma nosode: 200 ^M
Tuberculinum bovinum: 200 ^M	Tuberculinum marmorek: 200 ^M
Viscum album: 200 ^M , Q ^C	Veratrum viride: 30 ^P , 1 ^C , 6X ^G , 30 ^G

M - Dr. Farokh. J. Master⁵⁷ T - Dr. Chatterjee⁷¹ T. P
P - Dr. S.G. Palsule⁵⁹ C - Dr. J. H. Clarke⁵¹
G - Gupta⁷⁰ R. L. B - William Boericke⁴⁷
W - W. A. Dewey⁵² D - Bishamber Das⁶¹
F - Dr. Francoise Cartier⁷²

Table 6. Potencies suggested by various authors

However, various authors have mentioned the potencies they have found most useful in cases of hypertension. These represent only the individual experience of the authors, and to quote William Boericke, are at best "suggestive"⁴⁷.

The potencies suggested for the different remedies and their authors are given in the table above. `X` denotes decimal potencies, all the others are in the centesimal scale

Essential Hypertension: Homoeopathic research

Documented research on the efficacy of homoeopathic medicines on the management of essential hypertension are very few. Most of the published work has not focused on an individualized approach to treatment.

The remedies administered has been mostly those with a reputation for effectiveness in cases of hypertension.

Bignamini et al. examined⁷³ the effect of Baryta carbonica 15C in 34 elderly hypertensive subjects. Overall the trial result did not show a significant effect of the medicine, compared to placebo. But an interesting observation was that the patients who exhibited symptoms of Baryta carbonica, had a considerable reduction in blood pressure.

A study⁷⁴ conducted by Dr. Farokh J. Master has shown a decided improvement in the treatment group.

Here the medicines used were Adrenalinum, Eel serum and Baryta muriatica.

At present the Central Council for Research in Homoeopathy in India is conducting a study on hypertension in its unit in Hyderabad, the results of which are awaited.

Materials and Methods

The material for this study comprised of patients with essential hypertension, registered for treatment in the out patient department of Govt. Homoeopathic medical college, Thiruvananthapuram. Keeping the aims and objectives in mind, and to help in drawing valid conclusions from the study, the following inclusion and exclusion criteria were followed

Inclusion criteria

" Diagnosis of essential hypertension - History, examination and routine investigations show no evidence of secondary causes

" Age group - patients within 35 - 65 years of age

" Sex - Both sexes included

" Cases falling into low and medium risk groups after risk stratification

Exclusion criteria

" Diagnosis uncertain or findings from the history, physical examination or routine investigations arouse suspicion of a secondary cause for the hypertension

" Cases falling into the very high risk group after risk stratification

" Isolated systolic hypertension

" Cases with wide fluctuations of blood pressure

" Cases with serious illnesses or conditions affecting function of different organs or systems - e.g. hepatic disorders, impaired renal function, pregnancy etc.

Population under study

The study population was comprised of cases of essential hypertension registered at the Govt. Homoeopathic Medical College, Trivandrum, during the period 1997 - 2000. They included patients who wanted treatment for their hypertension and those in whom a raised blood pressure was discovered during the examination in the various out patient departments.

Selection of sample

The hypertensive status of the study population was initially confirmed after measuring the blood pressure twice on two separate occasions. The blood pressure was measured using a mercury sphygmomanometer of standard cuff size, with the subject in the sitting position, after 5 minutes rest.

The patients whose hypertensive status was confirmed was subjected to a preliminary enquiry and examination to exclude causes of secondary hypertension. They also underwent laboratory investigations, which included a blood count, urine for protein, glucose and blood, blood urea and serum creatinine, serum cholesterol, random blood glucose, chest X-ray, and an electrocardiogram.

Further their blood pressure was graded and different risk factors analyzed to assess the overall cardiovascular risk in individual cases. For this purpose the criteria laid down by the WHO-ISH was followed. The patients who finally got through the various inclusion and exclusion criteria, formed the study sample. They were twenty in number, including - males and - females.

Study design

The study consisted of subjecting patients with essential hypertension to homoeopathic treatment and assessing the efficacy by comparing the systolic and diastolic blood pressures before and after the period of study.

The feasibility of a placebo-controlled study was examined, but was rejected because of ethical and logistical reasons. It was decided to conduct a clinical trial without a placebo control, with the understanding that a placebo controlled trial may be attempted in the future if the results from the current trial is encouraging.

Period of study

The cases were followed up for three months, from the date of the first prescription. The study period was fixed considering the importance of assessing the efficacy of treatment within a reasonable time frame. This is especially so in the case of essential hypertension, with its known risks of prolonged uncontrolled blood pressure. It also helps in comparing the results with conventional treatment, which is known to show improvement in blood pressure within a short period of time.

Treatment intervention

Case taking and analysis

Every patient included in this study was interrogated in detail from a homoeopathic perspective, and the history and examination findings were recorded in a case record book.

In all the cases, a detailed analysis and evaluation of the symptoms were done, before erecting a totality. An examination of the miasmatic basis of the symptoms was also carried out to understand the different miasmatic influences in each case. Further they were repertorized with Synthesis repertory (Synthesis: Repertorium Homoeopathicum Syntheticum ed. 7.1 by Schroyens F, published by Homoeopathic Medical Publishers, London, Published in India by B Jain Publishers (P) Ltd.). In certain cases, other repertories were also consulted.

Remedy selection

The final differentiation of the remedies were made after reference to the different materia medicae, and a remedy matching the totality was chosen, taking care that it also corresponded to the predominant miasmatic influence in the case. In some cases, especially where characteristic symptomatology was lacking, remedy selection was influenced by factors like causation, keynote, marked modalities etc.

Potency and dose

The potency selection depended on the individual case. Different factors like, the degree of similarity, presence of reversible or irreversible pathological changes, clear or vague image of sickness, and the general vitality of the patient etc were considered for selection of the appropriate potency. When there was no clear trend towards either a higher or lower potency, a medium potency was chosen, usually the 30th . The drugs selected were given in a single dose (in sugar of milk), along with placebo in the form of blank tablets. They were advised to take the remedy at night before going to bed, and the placebo in most cases were to be taken in the morning and evening.

Additional measures

The patients on anti-hypertensive drugs were asked to reduce the dosage gradually and then stop, corresponding to the pace of improvement.

All the patients were given instructions regarding diet and regimen, keeping in mind their socioeconomic status and level of education. The usual measures included avoiding coffee, smoking, alcohol or other substances having a medicinal nature. They were also advised to restrict salt and fat in their daily diet and were encouraged to undertake more physical activity.

Follow up visits

The follow up examination of the patient were usually made at 2-3 week intervals. They were also asked to report even before the scheduled date, in the event of experiencing any troublesome symptom or serious illness. In addition, they were made aware of the necessity of being faithful to the follow up schedule.

At each follow up the patients were evaluated in detail with special reference to changes in general well being, change in presenting symptoms and addition of new symptoms. In addition, the physical examination, including measurement of blood pressure, was repeated.

During the follow up visits, the remedy was repeated only when necessary, in the same potency or with a change in potency. Likewise a change in remedy also was considered only when essential, after careful evaluation of the follow up. In cases where both were not necessary, only placebo was prescribed, in the form of sugar of milk powders and blank tablets.

Outcome measures

The primary outcome measure is the systolic and diastolic blood pressure values after the period of the study. These were compared with the initial values, and the difference analyzed using statistical tests, to find the efficacy or otherwise of the treatment.

Secondary outcome measures include change in grade of hypertension before and after treatment, and change in other symptoms associated with hypertension.

Statistical tests

Statistical tests were used only for the main outcome measure. For the purpose of this study, the statistical analyses were conducted separately for systolic and diastolic blood pressure values, using the paired t test. The test helps to establish whether the changes observed before and after treatment were significant or not. The same test was also used to estimate any difference in the changes observed in systolic and diastolic values, to understand specific effects if any.

All the results are tabulated

Observation & Discussion

A total of twenty cases were selected for this study. Out of the many cases screened, only those, which passed all the inclusion and exclusion criteria were selected. Some of the cases were excluded, as subsequent measurements of blood pressure showed a fall in blood pressure into the normotensive range. Some were rejected after analysis of the risk factors showed that they fall in the very high-risk category, due to very high blood pressure, complications like coronary artery disease, or concomitant illness like diabetes mellitus. Only one case was excluded due to the clinical suspicion of a secondary cause(hypothyroidism) for the hypertension.

Characteristics of study group

Age and sex

Patients falling into the age group of 35-65 years were selected for the study. The highest number of cases were in the age group 60-65 years with 7 out of the 20 cases (35%). The next highest was in the age group 55-60 with 4 cases (20%). The rest of the cases were distributed almost evenly across the other groups. Only once case was present in the age group 40-45 years.

The high percentage of cases in the elderly age groups (55-65 years - 11 cases or 55%) may have a bearing on some of the results obtained, which will be discussed later.

Sex distribution

The study group was comprised of 4 males (20%) and 16 females (80%). Two male patients (50%) were in the 60- 65 years age group, and one each in the groups 35-40 and 45-50 years. Out of the female patients, 5 (31.2%) were in the age group 60-65 and 4 (25%) were in the age group 55-60 years. As noted for the overall age distribution, the highest numbers of female patients were also in the age group of 55-65 years, with 9 patients (56.2%).

Age group (Years)	Male		Female		Total	
	No. of cases	%	No. of cases	%	No. of cases	%
35-40	1	5	2	10	3	15
40-45	1	5	0	-	1	5
45-50	0	-	2	10	2	10
50-55	0	-	3	15	3	15
55-60	0	-	4	20	4	20
60-65	2	10	5	25	7	35
35-65	4	20	16	80	20	100

Table 7. Age and sex distribution of study group

Risk factors for the development of hypertension

Several risk factors associated with the development of hypertension were identified in the study group. Psychological stress in varying degrees were found in 15 patients (75%), though a direct relation between a stressful circumstance and the development of hypertension was not found in all of them. The nature of the psychological stress also varied, ranging from grief, anxiety, fear etc. in different patients.

Risk factors	No. of cases	%
Genetic factors	9	45
Mental Stress	15	75
Obesity	1	5
Low socio-economic class	11	55
High salt intake	3	15
High alcohol intake	1	5
Non-vegetarian diet	6	30
Lipid abnormalities	3	15

Table 8. Risk factors for hypertension in study group

Low socioeconomic class appears to be a significant factor in the study group, with 11 out of the 20 patients (55%) falling into this group. But this may very well be a confounder, since a good proportion of the patients approaching the study center belong to this class.

As noted earlier, high-risk behaviour commonly seen in this class like smoking and alcohol consumption is relatively less in the group due to the peculiarity of the sex distribution, and hence it is difficult to estimate the adverse effect of social class. On the other hand, there might even be a positive effect in the form of decreased levels of physical inactivity. This is also reflected in the presence of only a single case, where obesity was a predominant factor.

| Genetic factors | Psychological stress | Obesity | Low socio-economic class

! High salt intake ! High alcohol intake ! Non-vegetarian diet ! Lipid changes
 Figure 8. Risk factors for hypertension in study group

Genetic factors were the next in importance, with a positive family history of hypertension present in 9 cases (45%). The siblings were affected in 7 cases, while in the other two, the parents who were hypertensive. Interestingly, another illness with a strong influence of genetic factors, Diabetes mellitus, was found in the family history of 8 patients (40%). This was in spite of patients with Diabetes mellitus being excluded from the study, and shows the tendency for aggregation of these illnesses in persons with the same genetic background

Dietary factors come in next, 6 patients (30%) having a predominantly non-vegetarian diet. High salt intake was present in 3 patients (15%) and one had history of high alcohol consumption. Lipid abnormalities, in the form of a high cholesterol level, was found in three patients

Past history

There were no notable trends in the history of past illnesses, except for the occurrence of hypertension during pregnancy in 2 out of 16 female patients.

Clinical presentation

Symptoms attributable to hypertension, like vertigo, occipital headaches etc. were absent at the time of diagnosis in more than half of the patients. In twelve out of the twenty patients (60%), the hypertensive status was discovered when the patient was examined in connection with other illnesses.

Four patients had recurrent headaches, but they were felt mostly in the frontal or temporal regions rather than in the occiput. In two patients, as mentioned earlier, the hypertension was discovered during pregnancy. It was only in eight cases (40%), that the patient sought the help of the doctor for symptoms known to be associated with hypertension.

At the time of the present study, the most frequent chief complaint was vertigo. It was present in 8 cases, which amounts to 40% of the cases. The next in order of frequency was recurrent headaches (7 cases - 35%), joint pains and skin complaints (4 cases - 20 %), chest pain breathlessness, and abdominal complaints (3 cases - 15%]

Presenting complaint	No. of cases	%
Vertigo	8	40
Headache	7	35
Joint pain	4	20
Skin complaints	4	20
Chest pain	3	15
Breathlessness	3	15
Abdominal complaints	3	15
Others*	1	5

Table 9. Presenting complaints of study group

Other symptoms like hot flushes, General weakness, disturbed sleep, palpitations, dimness of vision, recurrent sneezing and numbness of the limbs were complained of in 1 case each. It should be noted that

the presence of these complaints are not mutually exclusive, many patients have presented with more than one complaint.

Investigations

The abnormal findings in the investigations were few, and they included the presence of high cholesterol level in the blood examination and cardiomegaly in the chest x-ray. A blood cholesterol level significantly increasing the risk of cardiovascular diseases (> 250 mg/dL) was found in 3 patients (15%). Six patients (30%) had blood cholesterol level in the range 200 - 250 mg/dL, while 11 (55%) had levels < 200 mg/dL. Cardiomegaly, defined by a cardio-thoracic ratio > .5, was found in 2 cases (10%). In both the cases the enlargement was of the left ventricular configuration.

Miasmatic analysis

The psoric miasmatic influence was very much evident in all the cases in the study. It was the dominant miasm in 19 cases (95%), and in one case it was in second position. The pseudo-psoric influence also was very marked. While it was the dominant miasm in only one case (5%), it was in the second position in 10 cases (50%).

Chronic miasm Dominant Second position

Chronic miasm	Dominant		Second position	
	No. of cases	%	No. of cases	%
Psora	19	95	1	5
Syphilis	-	-	6	30
Sycosis	-	-	3	15
Pseudo-psora	1	5	10	50

Table 10. Miasmatic analysis of the study group

The sycotic and syphilitic miasmatic expression was not very prominent in the study. Out of the two, syphilitic expression was more common, being in the second position in 6 cases (30%). The relatively weak miasmatic expression of the syphilitic and sycotic miasms may be related to the strict exclusion criteria, which avoided cases of essential hypertension with complications.

Distribution of blood pressure before treatment

An examination of the blood pressure values of the study group before treatment shows that the majority have blood pressure values in the middle range of the distribution. Seven patients (35%) had diastolic blood pressure in the range 100-104 mm Hg., and five (25%) had diastolic blood pressure in the range 95-99 mm Hg. This means that 60% of the patients had a diastolic blood pressure in the range 95-104 mm Hg.

Table 11. Distribution of blood pressure in study group

The same trend is seen when comparing the systolic blood pressure values. Eight patients had systolic blood pressure levels in the range 160-169 mm Hg., while four had systolic blood pressure levels in the 150-159 mm Hg. range. Sixty percent of the patients, thus have systolic blood pressure values in the range 150-169 mm Hg.

Diastolic blood pressure (mm/Hg)			Systolic blood pressure (mm/Hg)		
Range	No. of cases	%	Range	No. of cases	%

< 90	-	-	< 140	1	5
90-94	1	5	140-149	1	5
95-99	5	25	150-159	4	20
100-104	7	35	160-169	8	40
105-109	2	10	170-179	2	10
≥ 110	5	25	≥ 180	4	20

Figure 9. Distribution of diastolic blood pressure in study group

On examining the rest of the values, we can see that most of the values are clustered around the upper part of the distribution for both diastolic and systolic blood pressure levels. Seven patients (35%) have diastolic blood pressure levels more than 104 mm Hg, while only one patient (5%) has a value less than 95 mm Hg. In the case of systolic blood pressure levels, six patients (30%) have a value more than 169, and only two (10%) have values less than 150 mm Hg.

Classification of blood pressure

The blood pressure values of the study group were classified according to the World Health Organization - International Society of Hypertension guidelines for the management of hypertension. According to this classification, eleven patients (55%) have grade II hypertension. Seven patients (35%) have grade III, while two (10%) have grade I hypertension.

Grade of hypertension	Grade I	Grade II	Grade III
No. of cases	2	11	7
Percentage	10	55	35

Table 12. Classification of blood pressure before treatment

Assessment of cardiovascular risk profile before treatment

Assessment of risk of cardiovascular complications was carried out according to the guidelines mentioned earlier. Here apart from the grade of hypertension, presence of other risk factors is also considered to assess overall risk.

After risk stratification, it can be seen that half the patients fall into the medium risk group. Only one patient falls into the low risk group, while there are nine patients in the high-risk group. The presence of a good number of patients in the high-risk group is partly due to the stringent criteria laid down by the WHO-ISH for assessing risk in cases of hypertension.

Grade of risk	Low risk	Medium risk	High risk	Very high risk
No. of cases	1	10	9	-
Percentage	5	50	45	-

Table 13. Stratification of cardiovascular risk before treatment

The risk of a major cardiovascular event in the next 10 years is estimated to be less than 15% in the low risk group, 15 - 20 % in the medium risk group, 20 - 30 % in the high risk group, and > 30 % in the very

high risk group. The patient in the very high-risk group requires the most intense and rapidly instituted treatment measures.

Assessment of efficacy of treatment

Distribution of blood pressure after period of study

An examination of the blood pressure distribution after the period of study shows a definite change from the previous distribution, with the majority of the values now clustered towards the lower end of the distribution. The same pattern is observed for both diastolic and systolic blood pressure values.

Nine patients now have diastolic blood pressure values less than 90 mm Hg. This means that 45% of the patients have diastolic blood pressure in the normal or high normal range. Six patients (30%) have diastolic values in the range 90-94 mm Hg, making a total of fifteen cases or 75% of patients with values less than 95 mm Hg after the period of study.

The systolic blood pressure levels also show a downward trend, with nine patients (45%) having blood pressure values less than 140 mm Hg. Four patients (20%) have systolic values in the range 140-149 mm Hg, and thus thirteen patients or 65% have values less than 150 mm Hg. after the treatment period.

On examining the rest of the distribution, we now see that four patients (20%) have diastolic blood pressure levels more than 100 mm Hg, with one (5%) of those having a blood pressure above 110 mm Hg. The corresponding figures before the period of study were fourteen (80%) and five (25%) respectively. Similarly in the case of systolic blood pressure levels, the number of patients with values more than 160 mm Hg was fourteen (80%), with four (20%) of them having values more than 180 mm Hg. After the treatment period, these numbers were reduced to six (30%) and two (10%) respectively.

Overall, it is clear that the treatment intervention has had an effect in reducing the blood pressure levels. But the magnitude of the effect as seen in table 7. may be slightly misleading, because the diastolic and systolic levels have not reduced proportionately in the same patient. As a result, there are patients whose systolic blood pressure levels after the period of study are within normal limits, but who still have grade II hypertension because their diastolic blood pressure has not changed significantly. The reverse is also found in some cases

Diastolic blood pressure (mm/Hg)			Systolic blood pressure (mm/Hg)		
Range	No. of cases	%	Range	No. of cases	%
< 90	9	45	< 140	9	45
90-94	6	30	140-149	4	20
95-99	1	5	150-159	1	5
100-104	2	10	160-169	2	10
105-109	1	5	170-179	2	10
≥ 110	1	5	≥ 180	2	10

Table 14. Distribution of blood pressure after treatment

A different viewpoint may be obtained by comparing the change in grade of hypertension, as it takes into account changes in both systolic and diastolic blood pressure levels at the same time. Even then it should be emphasized that individual reduction in systolic or diastolic blood pressure levels is also not without merit, as it helps in reducing the overall risk profile.

Change in grade of hypertension

Observation of the change in grade of hypertension before and after treatment is another measure of efficacy. After treatment five patients (25%) have blood pressure levels falling below the hypertensive

range, with four (20%) in the high normal and one (5%) in the normal range. The relatively less number of cases in the normal range despite nine cases having diastolic blood pressure < 90 mm Hg, shows that the effect on the corresponding systolic blood pressure level has not been the same. One of the reasons could be the higher proportion of patients in the elderly age groups, where atherosclerotic changes are more widespread.

Grade of blood pressure	Normal	High normal	Hypertension		
			Grade I	Grade II	Grade III
No of cases	1	4	7	5	3
Percentage	5	20	35	25	15

Table 15. Classification of blood pressure after treatment

A positive effect was observed on the patients remaining in the hypertensive range also. Seven patients (35%) now have grade I hypertension, compared to two (10%) before treatment. The number of patients in the higher grades have correspondingly decreased, with only five patients (25%) having grade II and three patients (15%) having grade III hypertension. These figures were eleven (55%) and seven (35%) respectively before treatment.

Overall, thirteen cases (65%) have shown a change to a lower grade of hypertension, while six (30%) have not shown any change in grade. Only one case has worsened to a higher grade, from grade I to grade II. On examining the improvement in individual grades, the maximum improvement was observed in grade II. Of the eleven patients in grade II before the period of study, a change was observed in eight (72.7%), with six falling into grade I and two into the high normal range.

Grade of hypertension	No. of cases*	Cases with improvement	Cases without improvement	% Change
Grade I	2	1	1	50
Grade II	11	8	3	72.7
Grade III	7	4	3	57.1

* - Before treatment

Table 16. Changes observed in individual grades after treatment

Grade III hypertensives have shown a change in four out of seven cases (57.1%), with two showing a reduction to high normal range and one each reducing to grade I and grade II respectively. In the case of the two patients with patients with grade I hypertension, one has reduced to normal range, while the other has not shown any change

Change in cardiovascular risk profile

The major factor affecting cardiovascular risk profile in this study is the grade of hypertension. Apart from this the other risk factors identified were age in the case of two patients, cholesterol levels in three, and ventricular hypertrophy in two patients.

Before the onset of treatment, three patients had cholesterol levels adversely affecting the cardiovascular risk profile (> 250 mg/dL). After the period of study, one had the cholesterol level lowered below the risk level, while the other two did not show a significant change.

On risk stratification after the treatment period, a trend towards reduction in the risk for cardiovascular diseases is observed. Now there are five patients (25%) in the low risk group, while there was only one (5%) before treatment. This is associated with a corresponding decrease in the higher risk groups, with only five (25%) patients falling into high-risk group, compared to nine (45%) before treatment. Similarly the number of patients in the medium risk group is reduced to five (25%) from ten (50%).

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Risk group	Before treatment		After treatment	
	No. of cases	%	No. of cases*	%
Low risk	1	5	5	25
Medium risk	10	50	5	25
High risk	9	45	5	25

* - Patients belonging to the normal and high normal groups are excluded

Table 17. Cardiovascular risk profile before and after treatment

Statistical analysis

Statistical analysis was conducted separately for diastolic and systolic blood pressure levels. Different scores were given to the various blood pressure levels, for the purpose of comparison. The scores obtained before and after three months of homoeopathic treatment were analyzed using the paired 't' test.

Diastolic BP	Score	Systolic BP	Score
< 90	1	< 140	1
90-94	2	140-149	2
95-99	3	150-159	3
100-104	4	160-169	4
105-109	5	170-179	5
≥ 110	6	≥ 180	6

Table 18. Scores assigned to range of blood pressure levels

The following are the steps in the analysis:

A. Purpose of analyses:

To know if the observed difference between scores before and after three months homoeopathic treatment is significant or not.

B. Null hypotheses:

There is no significant difference in the scores before and after treatment.

C. Find the difference in scores before (x) and after (y) treatment = z

D. Calculate the mean of the difference

$\bar{z} = \sum z/n$ where 'n' is the sample size

E. Calculate the standard deviation - $SD = \sqrt{\sum (z - \bar{z})^2/n-1}$

F. Calculate the standard error of mean

S.E. = SD/\sqrt{n} where SD is the standard deviation of differences and 'n' is the sample size.

G. Determine the t value at n-1 degrees of freedom

$t_{19} = \bar{z} / SE$ where \bar{z} is the mean of differences and SE is the standard error of mean of difference.

H. Comparison with table value

If t value obtained is more than table value at n-1 degrees of freedom, null hypothesis is rejected.

Analysis of change in diastolic blood pressure

Case No.	x	y	z = x-y	z - \bar{z}	(z - \bar{z}) ²
1	6	1	5	2.9	8.41
2	5	4	1	-1.1	1.21
3	4	5	-1	-3.1	9.61
4	5	4	1	-1.1	1.21
5	4	1	3	.9	.81
6	6	6	0	-2.1	4.41
7	4	1	3	.9	.81
8	6	2	4	1.9	3.61
9	3	1	2	-.1	.01
10	2	1	1	-1.1	1.21
11	6	2	4	1.9	3.61
12	6	3	3	.9	.81
13	3	1	2	-.1	.01
14	4	2	2	-.1	.01
15	4	1	3	.9	.81
16	4	2	2	-.1	.01
17	3	1	2	-.1	.01
18	4	1	3	.9	.81
19	3	2	1	-1.1	1.21
20	3	2	1	-1.1	1.21

x - Score before treatment y - Score after treatment

z - Difference in scores \bar{z} Mean of difference

Table 19. Difference in scores of diastolic blood pressure levels

Mean of difference - $\bar{z} = 2.1$

Standard deviation - $SD = \sqrt{39.8/19} = 1.45$

Standard error of mean - $SE = 1.45/\sqrt{20} = .32$

t value - $t_{19} = 2.1/.32 = 6.56$

Comparison with table value:

The table shows that the value of `t` at 19 degrees of freedom at 5%, 1% and .1% levels are 2.09, 2.86 and 3.88 respectively. The calculated value of 6.56 is greater than 5%, 1% and .1% levels, with $P < .001$. Hence the null hypothesis of no difference is rejected and the alternate hypothesis of significant difference is accepted.

Analysis of change in systolic blood pressure

Case No.	x	y	z = x-y	z- ž	(z- ž) ²
1	4	1	3	1.45	2.10
2	3	1	2	.45	.20
3	4	4	0	-1.55	2.40
4	2	1	1	-.55	.30
5	4	1	3	1.45	2.10
6	4	5	-1	-2.55	6.50
7	6	1	5	3.45	11.90
8	3	1	2	.45	.20
9	3	1	2	.45	.20
10	3	4	-1	-2.55	6.50
11	6	6	0	-1.55	2.40
12	6	6	0	-1.55	2.40
13	5	2	3	1.45	2.10
14	1	1	0	-1.55	2.40
15	4	3	1	-.55	.30
16	5	2	3	1.45	2.10
17	6	5	1	-.55	.30
18	4	1	3	1.45	2.10
19	4	2	2	.45	.20
20	4	2	2	.45	.20

x - Score before treatment y - Score after treatment
z - Difference in scores ž - Mean of difference
Table 20. Difference in scores of systolic blood pressure levels
Mean of difference- ž = 1.55
Standard deviation - SD = $\sqrt{46.9/19} = 1.57$
Standard error of mean - SE = $1.57/\sqrt{20} = .35$
`t` value - $t_{19} = 1.55/.35 = 4.43$

Comparison with table value:

The table shows that the value of t at 19 degrees of freedom at 5%, 1% and .1% levels are 2.09, 2.86 and 3.88 respectively. The calculated value of 4.43 is greater than 5%, 1% and .1% levels, with $P < .001$. Hence the null hypothesis of no difference is rejected and the alternate hypothesis of significant difference is accepted.

Inference:

The study shows that there is a significant difference between the scores representing blood pressure levels before and after 3 months of homoeopathic treatment. This difference is more than that due to chance, and therefore the treatment is effective.

Medicines administered

Majority of the medicines prescribed during the course of the study were based on the chronic totality. On a few occasions, the medicines were prescribed based on the acute totality, when there was an acute flare up of complaints. In a couple of cases, nosodes were also used

The following are the various chronic remedies prescribed during the course of the study .

Remedy	No. of cases	%	First prescriptions	%
Natrium muriaticum	4	20	3	15
Lachesis mutus	3	15	2	10
Kalium carbonicum	3	15	3	15
Nux vomica	2	10	2	10
Calcarea carbonica	2	10	1	5
Sepia officinalis	2	10	2	10
Pulsatilla pratensis	1	5	1*	5
Sulphur	1	5	1	5
China officinalis	1	5	1	5
Arsenicum album	1	5	1	5
Rhus toxicodendron	1	5	1	5
Opium	1	5	1	5
Conium maculatum	1	5	-	-
Syphilinum	1	5	-	-
Carcinosinum	1	5	-	-

Table 21. Frequency of remedies prescribed

Chronic remedies:

Frequency of prescriptions:

Natrum mur was the most frequently prescribed remedy, with four cases (20%). In three cases (15%) it was made as the first prescription, and in one it was made as the follow up remedy. Lachesis and Kali carb were the next in order of frequency, both being prescribed in three cases (15%). Lachesis was the first prescription in two of the cases (10%) where it was prescribed, while Kali carb was prescribed first in all the three (15%) of its cases.

Nux vomica, Calcarea carb and Sepia were prescribed in two cases each (10%). Out of these, Nux vomica and Sepia were the first prescriptions in their respective cases, while Calcarea carb was prescribed first in only one case. However, it should be pointed out that even in the second case Calcarea carb was the chronic remedy selected, but Pulsatilla was prescribed first since the patient was in an acute exacerbation. Calcarea carb was prescribed once the acute symptomatology subsided.

Rest of the medicines prescribed in this study were needed only in one case each (5%). They include Pulsatilla, Sulphur, China, Arsenic alb, Opium, Rhus tox, Conium, Syphilinum and Carcinosinum. Out of these Pulsatilla, Sulphur, China, Arsenic alb, Opium, and Rhus tox were the first prescriptions in their respective cases, while the rest were made during the follow up.

Frequency of first prescriptions:

Overall, Natrum mur and Kali carb were the most frequently made first prescriptions, with three cases (15%) each. The next in order of frequency are Lachesis, Nux vomica and Sepia, with two cases each (10%). The rest of the medicines were prescribed first only in one case each.

Nosodes:

The nosodes, Syphilinum and Carcinosinum, were prescribed in one case each. Both were prescribed during one of the follow up visits. Syphilinum was prescribed in a case with paucity of symptoms, when none of the remedy images were clear. Carcinosinum was prescribed as an intercurrent remedy, in a case where the indicated remedy was not giving the desired result

Acute remedies:

Acute remedies had to be prescribed in three cases, even though there were no acute flare-ups relating to the entity of essential hypertension itself. In one case Bryonia had to be prescribed due to presence of an acute febrile episode, while in another Graphites was given for a recent infected wound. In the third case Pulsatilla was prescribed for the acute exacerbation of headache, which was the chief complaint.

Once the acute flare up was subsided, the chronic remedy was prescribed. In the cases where Bryonia and Pulsatilla were prescribed as the acute remedy, it was followed by remedies which follow them well, Kali carb and Calcarea carb respectively.

Potencies used

Various potencies, ranging from 30th to 10M were used during the period of the study. The potency most often used to begin the treatment was the 200th, with eight cases (42.1%). The 30th potency also was frequently used, in seven or 36.8% of the cases. The use of the higher potencies in the first prescription was less frequent, with the 1M potency prescribed only in four cases (21.1%).

Potency*	30	200	1M	10M
No. of cases	7	8	4	-

* - Centesimal scale

Table 22. Potencies used in first prescriptions

When all the prescriptions are considered together also, the potency most often used is the 30th and 200th potency. The higher potencies were used less often, with the 10 M potency prescribed only thrice.

Remedy	Potencies	Remedy	Potencies

Natrium muriaticum	30, 200, 1M, 10M	Pulsatilla pratensis	30, 200
Lachesis mutus	30, 1M, 10M	Sulphur	200, 1M
Kalium carbonicum	30, 200	China officinalis	30, 200
Nux vomica	200, 1M, 10M	Arsenicum album	200
Calcarea carbonica	30	Rhus toxicodendron	30
Sepia officinalis	200, 1M	Opium	200, 1M
Conium maculatum	30	Carcinosinum	200
Syphilinum	200	-	-

Table 23. Remedies and potencies used

Natrum mur, Lachesis and Nux vomica were the only remedies which were prescribed in the 10M potency. The remedies prescribed in the 1M potency include the three mentioned above, as well as Sulphur, Sepia and Opium. The rest of the remedies were prescribed in the 30th and 200th , with Calcarea carb, Conium and Rhus tox being prescribed only in the 30th potency. The nosodes were prescribed in the 200th potency

Relative efficacy of various remedies

The relative efficacy of various remedies was assessed by noting the change in grade of hypertension before and after treatment. From the analysis, no single remedy was found to be clearly more effective than others in the study. Natrum mur, Sepia, Calcarea carb and Kali carb were found to be equally effective, with improvement in two cases each. Out of these Sepia and Calcarea carb was effective in both the cases they were prescribed.

Kali carb was effective in two out three cases, while Natrum mur has shown improvement in two out of four cases. Lachesis, Sulphur, China, Arsenic alb, Nux vomica and Carcinosinum were found effective in one case each. But Lachesis was prescribed in three cases, while the other remedies were prescribed in one case each.

No particular potency was found to be clearly more effective than others. In the table below, the 30th and 200th potencies apparently seem to be more effective, but it only reflects the higher proportion of these potencies used in the study. Apart from this the only notable observation is that the 10 M potency was effective only in one case, though it was prescribed three times.

Remedy	Potency used	No. of cases prescribed	No. of cases with improvement
Natrium muriaticum	30, 200, 1M	4	2
Sepia officinalis	200, 1M	2	2
Calcarea carbonica	30	2	2
Kalium carbonicum	30, 200	3	2
Lachesis mutus	1M, 10M	3	1

Sulphur	200, 1M	1	1
China officinalis	30, 200	1	1
Arsenicum album	200	1	1
Nux vomica	200	1	1
Carcinosinum	200	1	1

Table 24. Relative efficacy of the remedies used

Observations on the remedies prescribed.

Natrium muriaticum

Natrum mur was effective in two out of the four cases it was prescribed. In case No. 11, Natrum mur was indicated by mental symptoms like grief, ailments from cares and worries, sadness and disappointment at being betrayed (Synthesis, Mind, Grief, deception from). The physical symptoms which confirmed Natrum mur were the desire for salt, fish, and the sun headaches. There was an improvement in this case from grade II hypertension to high normal.

In case no. 9 the initial prescription was Lachesis, which though apparently indicated, made the patient worse, and also caused a rise in blood pressure. Natrum mur was prescribed next, and this was followed by a general amelioration, and the grade of hypertension improved from grade I to normal. The symptoms indicating Natrum mur were mostly at the physical level, like < sun, < summer, desire for open air and cold bathing, desire fish and extreme thirst.

Sepia officinalis

Sepia was effective in both the cases it was prescribed. In case no. 14, the mental symptoms like silent grief and dwelling on past things made one think of Natrum mur. But it was found that sepia also covers these symptoms. In addition the patient had characteristic symptoms of sepia like cold bloodedness, general < before and during menses, chilliness during menses, complaints during pregnancy, < from riding and < after coition.

In case no. 19 the patient had complaints from grief, and generally felt better when alone. Sepia is a three mark remedy for the latter symptom. Physical symptoms like cold bloodedness, Aversion to food especially on seeing it, and ring worm on the skin helped to confirm the prescription. In both the cases the grade of hypertension improved from grade II to grade I.

Kalium carbonicum

Kali carb also was effective in two out of three cases where it was prescribed. In case no.13 it was indicated mostly by physical generals and characteristic particulars. The patient was chilly, obese, had profuse sweat, right sided complaints, backache > lying on back, and breathlessness < lying on right side. The grade of hypertension improved from grade II to grade I after treatment.

In case no. 15 the prescription was made based on symptoms like Aversion to being alone, desire for sweets, aversion to meat, asthmatic breathing worse in the morning, and aggravation of the complaint in cold air. In addition it had rights sided joint complaints and stitching pain in the joints. In both the cases the grade of hypertension improved from grade II to grade I.

Calcarea carbonica

Calcarea carb was effective in both the cases where it was prescribed. In case no.5 Calcarea was given after the acute prescription of Pulsatilla, which it follows well. This case had the characteristic menstrual concomitant of Calcarea carb, swelling and pain in the breast before and during menses. Other prominent symptoms included aversion to meat and burning pain in vertex. This case improved from grade II hypertension to high normal level.

In case no. 7, Calcarea carb was indicated by symptoms like complaints from grief, desires company, chilly patient, Joint pain < cold wet weather and burning vertex. The peculiar aggravation of the burning vertex from any emotional upset also pointed to Calcarea carb. Calcarea ruled out Causticum, which was similar

but had opposite modalities for the joint complaints. This case showed good improvement, from grade III hypertension to high normal level.

Lachesis mutus

Lachesis was effective only in one out of the three cases. In the case where it was effective, there were many characteristic symptoms, like fear of death, fear of snakes, frightful dreams, dreams of snakes, Warm bloodedness, Burning palms and sole, burning vertex etc. It was selected ahead of other remedies in the repertorial analysis, as it was most similar to the mental symptoms present. This case has shown decided improvement, with change from grade III hypertension to high normal levels.

Sulphur

Sulphur was prescribed in case no. 16, mostly based on the prominent food desires and aversions, and peculiar sensations. Sulphur had in high marks the desire for sweets and warm drinks, as well as the aversion to eggs, meat and milk. Sensations like burning soles, burning tip of tongue, and sensation of hair in throat is also well covered by Sulphur. This case showed a change from grade II hypertension to grade I.

China officinalis

In case no .17, the complaints had developed after an episode of bleeding from the stomach. China is one of the important medicines for ailments after hemorrhages. It also had other symptoms like sensitivity to noise, irritability during headache, headache < noise, and roaring in ears during headache. There was change in grade of hypertension from grade III to grade II. It should also be pointed out that the literature review had not shown china mentioned under the rubric for hypertension.

Arsenicum album

In case no 20, Ars alb was mainly indicated by the fastidiousness, < from contradiction, cold-bloodedness, desire for and > warm drinks. This patient also had the typical aggravation of the complaint about midnight, which clinched the prescription for arsenic, ahead of other remedies like Nux vomica and Lycopodium. This patient showed a change in grade of hypertension from grade II to grade I.

Nux vomica and Carcininum

In Case no 8, the patient had presented with sleeplessness, due anxiety and worry at the failure of his business. The aetiological symptom (ailments from - business failure, ailments from - money from losing and ailments from - cares, worries) as well as the disturbance of sleep from slightest noise pointed to Nux vomica. But the response from Nux vomica was not as expected, and the blood pressure levels did not show much change.

Later Carcininum was prescribed, taking into account the strong family history of diabetes and cancer. The patient has shown more improvement after this prescription. The grade of hypertension reduced after treatment from grade III to grade I.

Limitations of the study

A. Small sample size

Due to the small sample size, it would be difficult to generalize the results from this study

B. Duration of the study

The study duration was three months, and hence the study does not reflect the efficacy of homoeopathic treatment in the long term.

C. Lack of placebo control

The role of the placebo affect of treatment if any, cannot be assessed in the absence of placebo control.

D. Age & sex distribution

Although a wide age group was selected for the study, most of the cases are in the 55-65 years age group. In the sex distribution also there is predominance of the female sex. Both of these factors may possibly confound the results obtained

E. Selection criteria

Most of the hypertensive complications and concomitant illnesses are excluded from this study, and one cannot assume the efficacy of homoeopathic treatment in such cases. Such cases may also warrant the use of many partially proved or smaller remedies, and the efficacy of such remedies has not been assessed in this study.

Summary & Conclusion

Essential Hypertension is a major health problem, especially in the developing countries. It is a key risk factor for important cardiovascular diseases like coronary heart disease and stroke, both of which account for a good proportion of the deaths worldwide.

Conventional anti-hypertensive treatment, while effective in reducing the blood pressure, has its own drawbacks. Non compliance with the treatment regimen is a major problem. The asymptomatic nature of the illness, adverse effects of drugs and high cost of treatment has resulted in the "rule of halves", where less than half the hypertensive population is adequately treated.

In this scenario, Homoeopathy has a lot of potential to help in reducing the proportion of the hypertensive population in the community, and thereby make a contribution in reducing overall cardiovascular mortality levels. The holistic nature of homoeopathy is ideally suited for this, as even the practitioners of allopathic medicine are realizing the fallacy in treating the blood pressure or other risk factors in isolation. The cheaper cost of treatment also makes it a more attractive option at the community level.

The present study was primarily aimed at determining the effectiveness of the homoeopathic approach in the management of essential hypertension. An attempt was also made to find out if possible, remedies which are more useful in treating the condition. To achieve these aims, twenty cases of essential hypertension were subjected to three months of homoeopathic treatment, and the change in blood pressure levels before and after treatment were evaluated.

The study has shown that homoeopathic medicines have a positive effect on the hypertensive status of the patients in the study sample. The efficacy is demonstrated by the results of the statistical analyses ($p < .001$ for both diastolic and systolic levels), which show that the pretreatment and post treatment levels of blood pressure are indeed, different. An analysis of the change in grade of hypertension before and after treatment has also shown that thirteen cases or 65% have changed from a higher to a lower grade of hypertension. The group which responded the most to treatment was patients in grade II hypertension with 72.7 % showing change to a lower grade. Finally, an analysis of the cardiovascular risk profile before and after treatment has also demonstrated a reduction in the percentage of cases in the higher risk groups.

The remedies used in this study were essentially prescribed based on the chronic totality. Due to the relatively small size of the sample, no single remedy could be identified as clearly more efficacious than the others. However, remedies like Natrum mur, Calcarea carb, Kali carb and Sepia were found to be effective in more cases than others. China and Carcinosinum were found to be effective in one case each, though both are not mentioned in the general repertories under the rubric for hypertension. The potencies used also has varied, and no single potency was found to have a superior effect.

Bearing in mind the limitations of the study, It would be premature to draw absolute conclusions about the effect of homoeopathic medicines in the management of essential hypertension. But the results of this study are certainly encouraging, and warrants further studies with more stringent criteria. Such a study, with a good sample size, will also help in evaluating the relative efficacy of various medicines in the treatment of essential hypertension.

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