

MANAGEMENT OF HYPERTENSION - AN AYURVEDIC REVIEW**Garima Yadav^{1*}, Pramod Kumar Mishra², Indu Sharma³, Lekha Soni⁴**¹M.D. Scholar P.G Department of *Kaya Chikitsa*,²Professor and Head of the Department, P.G Department of *Kaya Chikitsa*,University College of *Ayurveda*, Dr Sarvapalli Radhakrishnan Rajasthan *Ayurveda* University Jodhpur, Rajasthan, India.³Associate Professor P.G Department of *Kaya Chikitsa*, Govt. *Ayurveda* College of Udaipur, Rajasthan,⁴M.D. Scholar P.G Department of *Kaya Chikitsa*,**Corresponding Author:** ygarima527@gmail.com<https://doi.org/10.46607/iamj2709102021>**(Published Online: October 2021)****Open Access**

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Article Received: 25/09//2021 - **Peer Reviewed:** 06/10/2021 - **Accepted for Publication:** 07/10/2021**ABSTRACT**

Hypertension is the most common lifestyle disorder today. Systemic arterial hypertension is that the most important modifiable risk factor for all-cause morbidity and mortality. Worldwide one of the major causes of premature death is hypertension and can lead to major health consequences, such as CHD, CHF, peripheral arterial disease, stroke, renal failure, and death. Hypertension may be a chronic and sometimes asymptomatic medical condition during which systemic blood pressure is elevated beyond normal. Fewer than half of those with hypertension are conscious of their condition and lots of others are

Modern treatment modalities are effective for the management of hypertension but pose human beings to their unwanted complications on their long-term use. The conventional antihypertensive drugs have many adverse effects & are not well tolerated which led to non-compliance, switching & discontinuation of treatment. There is no direct description of HTN in *Ayurveda* but based on its clinical presentation and similarity between pathogenesis factors for hypertension can be correlated with *Raktagata Vata* and it is considered as *Tridoshaja Vyadhi*. Treatment for hypertension in *Ayurveda* on the idea of Balancing all three *Doshas*. So *Nidan Parivarajan*, proper dietary habits, Yoga, Meditation along *Ayurvedic* herbs can be beneficial for balancing the state of mind, maintaining as well as

reducing blood pressure. The Ayurvedic drug's potency depends upon *rasa, Guna, Virya, Vipaka & Prabhava*. Also, *Acharyas* have mentioned this as *Prabhava* of the drug. *Ayurveda* has various classical formulations and single herbs like *Brahmi, Pushkarmoola, Jyotishmati, Sarpagandha, Saunf, Jatamansi* etc. having *Hridya, Kaphahara, Vatahara, Balya, Raktaprasadana*, etc. properties which are safe and cost-effective too.

Keywords: High Blood Pressure, Lifestyle disorders, *Raktachapa*, Silent killer.

INTRODUCTION

Hypertension is one of the foremost common lifestyle disorders soon. Every person has been affected by it. Even kids are often victims of Hypertension. In about 90% of patients, there's no known cause for hypertension and this is often vital to be alert. Hypertension itself may be a very dangerous condition. As we all know, hypertension is named a silent killer because it rarely exhibits symptoms before it damages the gut, brain, liver or kidney. The damaging of those vital organs is that the most vital explanation for death. Hypertension is a crucial worldwide public health challenge. About 26.4% of the planet adult population in 2000 had hypertension and 29.2% were projected to possess this condition by 2025. Recent studies from India have shown the prevalence of Hypertension to be 25% in urban and 10% in rural people in India. Hypertension is usually expressed because of the ratio of the systolic BP (that is, the pressure that the blood exerts on the arterial walls when the heart contracts) and therefore the diastolic BP (the pressure when the heart

relaxes). As such, the heart is forced to figure harder to beat the increased systemic pressure to deliver blood to tissues, which puts strain on the heart and arteries. Though plenty of potent antihypertensive drugs are available today none of them is free from untoward effects. Beta-blockers often cause fatigue, cold extremities, bradycardia and heart failure. Similarly, angiotensin-converting enzyme inhibitors may cause cough, rash etc, But *Ayurvedic* therapy can minimize the danger think about a far better way. As per *Ayurvedic* principles, just in case of an unknown disease, the physician should attempt to understand the character of the disease through *Dosha*, the location of manifestation, etiological factors then should initiate the treatment. Hence it becomes necessary to review multiple factors viz. *Dosha Vradhi, Dhatu Dushti, Stratos* are involved and their role in the causation of hypertension for a correct understanding of the disease, its prevention and treatment.

Classification of Hypertension –

Category	Systolic (mm of Hg)	Diastolic (mm of Hg)
Normal	< 130	< 85
High Normal	130 – 139	85 - 89

Hypertension-

Stage 1 HTN (Mild)	140 – 159	90 – 99
Stage 2 HTN (Moderate)	160 – 179	100 - 109
Stage 3 HTN (severe)	180 – 209	110 – 119
Stage 4 HTN (Very severe)	> 210	> 120

Types of Hypertensions -

Two types of hypertensions –

1. Primary hypertension 2. Secondary hypertension.

Primary hypertension/ Essential hypertension/ idiopathic hypertension- About 90–95% of cases of

hypertension are categorized as primary hypertension with no obvious underlying cause. This is often found in most individuals who have crossed the centre age. It cannot be permanently cured but is controlled with the proper drugs and measures. The measures include

sharp reduction of obesity and reduction of dietary salt.

The possible causes of primary hypertension are also such as-

1. Hereditary factor
2. Environmental factor- overcrowding, pollution.
3. Age and sex factor
4. Habit of Alcohol and smoking
5. Increase in lipid profile and serum cholesterol
6. Obesity
7. Psycho-social factors- anxiety, tension.
8. Dietary factor- more salt intake.

Secondary hypertension/ Malignant hypertension - when hypertension is caused by another condition or disease process, it's called secondary hypertension. Incidence of the Secondary hypertension is relatively very low. This is often very dangerous and needs to remedy urgently. Fewer than 10% of patients have high blood pressure.

The possible causes of secondary hypertension could also be such as-

1. Due to the administration of certain drugs like contraceptive pills, steroids etc.
2. Hypertensive diseases of pregnancy: - Toxaemia of pregnancy
3. Renal causes: - Acute nephritic syndrome, chronic nephritis and polycystic kidney.
4. Endocrinal causes: - Thyrotoxicosis, myxoedema and acromegaly.
5. Metabolic causes: - Diabetes, chronic gout and atherosclerosis.
6. Congenital diseases: - Coarctation of aorta
7. Collagenases and miscellaneous diseases: -SLE and polyarteritis nodosa.
8. Neurological: - Encephalitis, brain tumour and cerebrovascular accidents
9. Blood diseases: -Polycythaemia etc.

Symptoms of Hypertension- Most of the patients with hypertension have no specific symptoms except elevated blood pressure. Symptoms of hypertension are usually variable from time to time. The popular symptoms of hypertension are as follows.

- Headache
- Nausea
- Numbness & burning sensation in hands & feet
- Vertigo
- Vomiting
- Feeling of tiredness, restlessness

- Breathlessness
- Loss of appetite
- Chest pain
- Discomfort
- Bleeding from nose
- Swelling in legs and eyes
- Irritability
- Haziness of vision

Complications of Hypertension- Uncontrolled high blood pressure can lead to the following complications developed within the human body: - **1. Heart attack or stroke-** High force per unit area can cause hardening and thickening of arteries (atherosclerosis), which may cause a heart attack, stroke or other cardiovascular complications. **2. Aneurysm-** High blood pressure is of explanation for weakening and bulging the blood vessels, forming an aneurysm. **3. Heart failure-** Heart muscle thickens thanks to the pumping of blood against the higher pressure in blood vessels. The thickened muscle may have a tough time pumping enough blood to body needs, which may cause coronary failure. **4. Organ malfunction-** Weakened and narrowed blood vessels in kidneys and other organs, which prevent such organs from normal functioning. **5. Vision loss-** Hypertension damages the very small blood vessels within the retina of the eyes may result in vision loss. **6. Memory problems-** Uncontrolled high blood pressure is also affecting the ability of the person to think, remember and learn.

Ayurveda Approach to Hypertension -

According to *Ayurveda*, high vital sign involves all three *Doshas*, the heart, and the blood vessels. In high blood pressure, we can see signs and symptoms of disturbance of *Vata Dosh* that mainly of '*Vyana Vayu*. *Pitta dosha* vitiation is additionally seen often. People with *Pitta* and *Vata* predominant constitution are more vulnerable to hypertension than the others. According to *Maharshi Charaka*, it's not essential to offer a selected name to each disease. In those conditions, the physicians should treat the patient to be considering the character of the disease, its sites, aetiology and *Dosha-Dushya Sammurchhana*. Inference of previous research work done is that hypertension is nothing but a '*Vata Pradhan Tridoshaja Vyadhi*', be greatly

influenced by *Mana*. Therefore, it's going to be considered as *Sharir* and *Manas Roga (Ubhayashrita Vyadhi)*.

Factors involved in hypertension - *Dosha Prana*

Vayu: *Hridaya Dhruka* means *Dharana* of the heart the function of *Prana Vayu* can be correlated with the vagal inhibition of systema, nervosum. Additionally, the present vaso- motor centre controls the force per unit area by the autonomic nervous system; similarly, *Prana Vayu* also controls the regulation of blood pressure by controlling *Vyana Vayu*.

Vyana Vayu: *Vyan Vayu* is alleged to be answerable for various kinds of movements within the body. With the help of *Vyan Vayu*, the heart contracts and propels blood (*Rasa Rakta Dhatu*) continuously everywhere in the body.

Samana Vayu: In step with *Sharangadhara* after the digestion process '*Samana Vayu*' helps within the transportation of *Rasa* into the heart and from there it circulates within the whole body.

Apana Vayu: Vitiating of *Apana Vayu* hampers the excretion of the *Purisha* and *Mutra* affecting homeostasis which can affect vital signs. So *Apana Vayu* also plays a task in the regulation of blood pressure.

Avalambaka Kapha: Normal rhythm, contractility, and tone of cardiac muscles are often correlated with functions of *Avalambaka Kapha*. Thus, it keeps the heart in an exceedingly healthy state and enhances its continuous pumping capacity.

Agni: *Agni* is a crucial think about factor in the pathogenesis of all the diseases. *Agni Dushti* occurs at two levels *Jatharagni Mandya* and *Dhatwagni Mandya*. *Jatharagni Mandya* will cause *Ama* formation which ends in *Strotorodha* and vitiating of all *Doshas*. It'll ultimately increase peripheral resistance and may result in hypertension. Atherosclerotic changes in vessels may be an outcome of chronic *Agnimandya* and *Ama*.

Mana (Mind) There's a detailed interrelation between the body and mind (*Mana*). *Manasik Bhavas* like *Krodha* (anger), *Chinta* (worry), *Bhaya* (fear) etc. plays a vital role within the pathogenesis, progression and prognosis of all disease. This fact is focusing that the *Mana* plays important role in hypertension. Modern

medical science also considers that the involvement of psycho (*Mana*) can be a causative factor for hypertension. In step with *Ayurveda*, *Vayu* is the regulator and stimulator of *Mana*. These basics of *Ayurveda* mustn't neglect while treating hypertension.

Pathogenesis of Hypertension in *Ayurveda* -

Ati Lavana Sevana (Excessive salt intake), *Madyapana* (Alcohol consumption) *Snigdha Bhojana* (oily diet) *Divaswap* (daytime sleep) and *Manovighata* (Mental incidence) result in vitiating of *Shonita* (blood). But *Shonita* being *Dhatu* (tissue) is not capable of vitiating *Doshas* (pre-mortal factors of the body) independently. The *Doshas* present within the *Shonita* is involved indirectly within the manifestation of high blood pressure. The overuse of salt, alcohol vitiates the *Sadhaka pitta* and *Shonita* (blood). Sedentary habits vitiates the *Avalambaka Kapha*, and psychological stress induces vitiating of *Prana Vayu*. Initially *Prana vayu* gets *Prakopa*. Since *Prana Vayu* has an influence on *Hridaya* (heart), vitiates *Hridaya* and its residing components like *Vyana Vayu*, *Sadhaka pitta*, *Avalambaka Kapha*. *Shona* is additionally involved because it is found in *Hridaya*. *Prakupita* (vitiating) *Avalambaka Kapha* induces exaggerated contractility of the heart, while aggravated *Vyana Vayu* leads to increased *Gati* (speed), the force of ejection of blood from *Hridaya*. These events result in forceful expulsion of blood through *Dhamanis* (blood vessels), leading to increased resistance in vessels ensuring High blood pressure.

Samprapti Ghatakas (Components of pathogenesis)

Doshas: *Prana, Udan & Vyana vayu, Sadhaka Pitta, Avalambaka Kapha*

Manas Dosha: *Raja, Tama*

Dushyas: *Rasa, Rakta, Mamsa, Meda*

Updhatu: *Sira, Dhamani*

Agni: *Jatharagni-Dhatwagnimandya*

Srotas: *Rasavaha Raktavaha, Pranvaha & Manovha*

Srotodushti Prakara: *Sanga type of srotorodha*

Udabhava Sthana: *Hridaya, Dhamani*

Adhithana: *Mano-daihika, Sira, Dhamani, Srotas*

Sancharasthana: *Sarva Sharir*

Rogamarga: *Madhyama Rogamarga*

TREATMENT/MANAGEMENT OF HTN -

Ayurveda has three principles of management for any disease namely: 1. *Nidana Parivarjana* 2. *Shodhana* 3. *Shamana*

Nidan parivarjan

It means avoiding the causative and risk factors. In the case of essential hypertension, the patient should follow the following *Pathya* and *Apathya*.

1) PATHYA	2) APATHYA
<p>VIHAR-</p> <ul style="list-style-type: none"> • Regular blood pressure check-up • Lifestyle modifications like timely intake of a balanced diet, regular physical exercise, daily brisk walking for half an hour • Weight reduction • Timely sleeping and awakening. • Regular practice of Yoga, Meditation etc. under the supervision of a Yoga expert 	<p>VIHAR-</p> <ul style="list-style-type: none"> • Practice of day sleeping and awakening at night.
<p>AAHAR-</p> <ul style="list-style-type: none"> • More use of fruits and green vegetables • Reduce intake of oily, salty, sour and spicy food items • More use of Barley (<i>Yava</i>), Sorghum (<i>Jowar</i>), wheat, green gram (<i>Mudga/Moong dal</i>), horse gram, moringa (<i>Shigru</i>), Bitter gourd (<i>karela</i>), Bottle gourd (<i>Ghia/Lauki</i>), Turnip (<i>Shalgam</i>), Carrot (<i>Gajar</i>), Radish (<i>Muli</i>), Indian gooseberry (<i>Amla</i>), Cucumber (<i>Khira</i>), Black grapes (<i>Draksha</i>), Pomegranate (<i>Anar</i>), Apple, Pineapple, Cold milk etc. 	<p>AAHAR-</p> <ul style="list-style-type: none"> • Excessive intake of salt (sprinkling over salad, curd etc.) • Excessive use of Butter, Ghee, Chillies (Red, Green), Pickles, <i>Til taila</i>, Bengal gram, Mustard oil, Sour fruits, Curd, Tea, Coffee etc. • Intake of animal fat, processed/oily food items. • Alcohol consumption and smoking

Shodhana *Shodhana* means purification of the body by eliminating morbid *doshas* and *Dushyas* from the body through panchakarma hence breaking the *Samprapti* of disease. Through various research done on essential hypertension, the following *Shodhana* therapies can be done: 1. *Virechan* 2. *Basti- Ksheer basti, Lekhan basti*, etc. 3. *Nasya* 4. *Shirodhara- Takradhara, Jaladhara, Tailadhara*, etc. 5. *Raktamokshan-Siravedh* etc.

Shaman The principle of *Shaman* therapy is to normalize and maintain the equilibrium of all the *Doshas*. The following drugs (single/compound formulation) are commonly used for prevention and control of Hypertension

Single drugs: - *Amalaki, Jyotishmati, Chhanganal Jadi, Rudraksha, Haridra, Japapushpam, Jatamamsi, Punarnava, Bhiringraj, Sadabahar, Sarpagandha, Shankhapushpi, Shigru, Tagar, Vacha*

Compound drugs: - *Arjun Ksheerpaka, Brahma Rasayan, Chandralekha Rasam, Chyavana Prasha, Guduchi Rasayanam, Jatamamsi Kwath, Jatamamsyadi Yog, Madhuparnyadi Yogam, Mahavat Vidhwansak Rasa, Mangalyakusuma Mansyadi Yog, Medhya Rasayanam, Medhya Vati, Nirvishi Sindoor Kalpa, Prasadi Vati, Prasadini Vati, Rasagandhati Vati, Rasa Sindoor, Sarpagandha Ghan Vati, Shodashang Kashaya, Vacha-Mansyadi Yog*

Based on the form of medicine: -

1. *Kashayam* (Decoction) - *Jatamansi Hima, Dashmool Kwath, Arjun Kwath, Punarnava Kwath, Mahamanjistha Kwatha* 2. *Choorna* (Powder) – *Sarpagandha Choorn, Arjuna or Gokshura, Ashawaghandha Choorna, Tagar* 3. *Bhasma* (Rasa preparation) - *Mukta Pisti, Jaharmohra Pisti, Mukta Shukti*. 4. *Vati* (Tablet) - *Sarpagandha Ghana Vati, Brahmi Vati*

Here is the list of plants that have antihypertensive properties

Drug Botanical	Botanical name and family	Part Used	Chemical Constituent
<i>Sarpagan-dha</i>	<i>Rauwolfia Serpentine;</i> <i>Apocynaceae</i>	Root	Ajmaline, Rescinnamine, Serpentinine, Sarpagine, Deserpidine, And Chandrine
<i>Arjun</i>	<i>Termenalia Arjuna;</i> <i>Combretaceae</i>	Bark	Tannins, Triterpenoid Saponins, Flavonoids, Gallic Acid, Ellagic Acid, Calcium, Magnesium, Zinc,
<i>Ashwagan-dha</i>	<i>Withania Somnifera;</i> <i>Solanaceae</i>	Whole Plant	Alkaloids Include <i>Withanine, Withananine, Pseudowithanine, Somnine, Somniferine, Somniferinine.</i>
<i>Bhringraj</i>	<i>Eclipta prostrata</i> <i>/Eclipta alba;</i> <i>Asteraceae</i>	Leaves	Wedelolactone And Dimethyl Wedelolactone, Ascorbic Acid. Alkaloid, Ellipticine. Thiophene Derivatives Mono-, Di- And Terthiophene Acetylenes
<i>Punarnava</i>	<i>Boerhavia diffusa;</i> <i>Nyctaginaceae</i>	Whole Plant	<i>Punarnava</i> Contains B-Sitosterol, A-2- Sitosterol, Palmitic Acid, Ester of B- sitosterol, Tetracosanoic, Hexacosanoic,
<i>Shatavari</i>	<i>Asperagus Recemosus;</i> <i>Asparagaceae</i>	Tuberous Dried Root	Saponins— <i>Shatavarins I–IV. Shatavarin IV</i> Is a Glycoside of <i>Sarsasapogenin</i> . Dried Root Yields Sitosterol; (Dihydroxy Hydroxy isobutyl

Mode of Action of Shaman Drugs- 1. Centrally acting- *Withania* (CNS acting), *rauwolfia* (catecholamine depilators), *hypericum* (dopamine and norepinephrine reuptake inhibitors), black cumin seed (CNS acting and antioxidant) 2. Vasodilators- Garlic (Via Hyperpolarization through H₂S), Ginseng (Direct Smooth Muscle Relaxant), Hawthorn, Vitis, Yarrow, Olive Leaf (Endothelium Dependent Vasodilation), Forskolin (Adenyl Cyclase Pathway), Lotus 3. Diuretic – *Punarnava*, *Kalaaja* 4. ACE inhibitors- Garlic (by allicin), *Vacha*, *Bibhitaki*, *Pippali* 5. Calcium channel antagonist- *Shunthi*, *Brahmi* 6. Cholesterol Synthesis Inhibitors- Cat's claw, African mistletoe 7. Hypolipidemic- *Matulunga*, *Amlavetas*, *Vrikshamla*, *Pushkarmool*

Diet- Dietary modification is extremely important to stop the event of hypertension or potentially combat and reduce high blood pressure. Lowering sodium intake (especially from table salt) reduces excessive water retention, which helps maintain normal blood pressure. Excessive use of common salt is toxic and damaging to arteries and other tissues, which can initiate atherosclerosis and lead to hypertension. Additional dietary changes beneficial for reducing blood pressure include adopting a diet that is rich in fruits, vegetables, whole grains and low-fat dairy products, reducing

consumption of sugar and heavily processed food, reducing caffeine intake, and limiting alcohol consumption.

Yoga - Stress reduction from practising meditation, yoga, and other mind-body relaxation techniques can lower blood pressure. Yoga is formulated for several reasons and therefore the health restoration is one among them. *Shavasana*, *Sukhasana*, *Dhanurasana*, *Makarasana*, *Vajrasana*, along with the regular practice of *Pranayama* are found to be very useful for lowering blood pressure in normal as well as hypertensive individuals if performed accurately. According to *Bruhadaranyaka* and *Chhandogya Upanishads*, the aim of *Pranayama* and Yogic techniques is to control *Prana*. This target is difficult to achieve, but mental peace and relaxation thus achieved could be used as a therapeutic tool. This factor could also be important in the primary prevention of coronary atherosclerosis.

CONCLUSION

Essential hypertension is a deadly disease leading to many cardiovascular, cerebral and renal diseases. It has been found that the share of hypertensive patients is rising sharply. Antihypertensive drugs can help to control blood pressure, but they will not cure permanently high blood pressure. Humans today is looking towards *Ayurveda* in a search of a perfect and safe

treatment. Hence to urge the right management of hypertension with no side effects may be needed in the present era. In the Ayurveda equilibrium of *Doshas*, *Dhatu*, *Malas* and *Agni* are considered as a healthy state of an individual. In nutshell, we will say that while observing hypertension through Ayurvedic spectacle one or more of the subsequent three possibilities should be considered. 1. Pathophysiological changes in the form of vitiation of *Dosha* (*Vata*, *Pitta* and *Kapha*), *Dhatu* and *Mala Dushti*. 2. Psychological changes i.e., disturbances at the extent of *Mana* (*Manovaha Strotas Vikara*). 3. Structural changes as complications of long-term hypertension on various organs like heart, blood vessels, kidney etc. After a thorough study of literature and fundamentals in both Ayurveda and Modern medicine, it's concluded that the Ayurvedic approach to treat a disease consistent with its *Samprapti* (pathogenesis). Hypertension can also manage by well following *Pathya* and *Apathya Aahar-Vihar* (diet management and appropriate lifestyle) and Yoga mentioned in Ayurveda. An additional benefit of Ayurvedic management is the absence of hazardous effects which is very important in view of the global acceptance of Ayurveda.

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