

## ROLE OF MEDICINAL HERBS IN THE MANAGEMENT OF HYPERTENSION

**Bhageshwary Janagal<sup>1</sup>, Rajendra Prasad Purvia<sup>2</sup>, Ayush Kumar Garg<sup>3</sup>**

<sup>1</sup>PG Scholar, <sup>2</sup>Asst. Prof, MD Scholar<sup>3</sup>

Department of Dravyaguna, Dr. Sarvapalli Radhakrishnan Rajasthan Ayurved University  
Jodhpur, Rajasthan, India

**Email:** [bhageshwaryjanagal@gmail.com](mailto:bhageshwaryjanagal@gmail.com)

### ABSTRACT

Lifestyle diseases refer to diseases that result because of choices people make in their life. They are mostly common in developed nations where people are inclined towards stress, eating unhealthy foods, having a sedentary lifestyle and unhealthy habits like smoking and excessive alcohol intake. This lifestyle results in higher level of risk factors, such as Hypertension. Hypertension is one of the major causes of disability and death all over the world. Hypertension is a common condition in which the force of the blood against our artery walls is high enough that it may eventually cause health problems. Hypertension is often called the silent killer. Silent because it doesn't produce any significant recognize symptoms and killer because even slightly high blood pressure can increase the risk of Heart diseases. It can cause Heart attack, Strokes, kidney failure and other disorders if it is neglected and remains untreated. According to Ayurveda, Hypertension can be co-related with *Raktagata Vata* and it is consider as *tridoshaja Vyadhi*. Ayurveda treatment for Hypertension aims at balancing these *doshas*. Proper dietary habits, Regular exercise, Yoga, Meditation along with Ayurveda herbs can prove beneficial to balance the mind and reduce stress and maintain the blood pressure. Present paper aims to discuss the possible role of Ayurveda in combating this dreadful disease and improve the quality of life of hypertensive patients.

**Keywords:** Hypertension, Ayurveda, Herbs, Meditation.

### INTRODUCTION

The World Health Organization (WHO) has identified India as one of those nations that is going to have most of the lifestyle disorders in the near future. Hypertension is one amongst the most alarming health problems of present era. Hypertension results from a variety of reasons like stress, obesity, genetic factors, over use of the

salts in the diet and ageing. As we all know, hypertension is called a silent killer because it rarely exhibits symptoms before it damages the heart, brain or kidney.<sup>1</sup> Hypertension is an important worldwide public health challenge and remains a major cause of morbidity and mortality worldwide. Hypertension is a chronic and often

asymptomatic medical condition in which systemic arterial blood pressure is elevated beyond normal. As such, the heart is forced to work harder to overcome the increased systemic pressure in order to deliver blood to tissues, which puts strain on the heart and arteries. Over the period of time, the additional strain leads to cardiovascular dysfunction and is a primary contributing cause of congestive heart failure, myocardial infarction, pulmonary embolism, cerebral aneurysm and kidney failure.<sup>2</sup>

In Adults, a condition in which the blood pressure is higher than 140 mm Hg systolic or 90 mm Hg of diastolic on three separate readings recorded several weeks apart. High blood pressure or Hypertension is a circulatory state; may arise from any cause, in which the pressure of the blood in the arteries becomes elevated beyond normal limits. Blood pressure has a diurnal and random variability and the effect of age, sex and race. When the hypertension is suspected, blood pressure should be measured at least twice during two separate examinations after the initial screening.<sup>3</sup>

Ideally, an antihypertensive drug should achieve optimum blood pressure control and improve patient's well-being. Any treatment administered should be directed not only to control blood pressure, but also prevent target organ damage, thereby preserving cardiac and renal functions.<sup>4</sup>

#### **CAUSE OF HYPERTENSION-**

The exact causes of hypertension are usually unknown; there are several factors that have been highly associated with the condition. These include:

1. Smoking
2. Obesity or being overweight
3. Sedentary lifestyle
4. High levels of salt intake (sodium sensitivity)
5. Insufficient calcium, potassium, and magnesium consumption
6. Vitamin D deficiency
7. Stress
8. Aging
9. Genetics and a family history of hypertension.<sup>5</sup>

#### **SYMPTOMS OF HYPERTENSION-**

1. Pain experienced at the back of the head and neck on waking up, which soon disappears.
2. Dizziness
3. Palpitations
4. Heart pain
5. Frequent urination
6. Fatigue
7. Difficulty in Breathing.<sup>6</sup>

#### **TYPES OF HYPERTENSION -**

- Primary or essential hypertension - The hypertension is of unknown origin.
- Secondary hypertension - Hypertension with an identifiable cause secondary to another disease such as renal disease or tumour.
- Isolated systolic hypertension - Most common in elderly patients due to reduced vascular compliance, systolic B.P > 160 mm of Hg with diastolic pressure < 90 mm of Hg.
- Neurogenic hypertension - It can be caused by strong stimulation of sympathetic nervous system. (e.g. when a person becomes excited for any reason or state of anxiety).<sup>7</sup>

**Table 1: CLASSIFICATION OF HYPERTENSION-** <sup>8</sup>

Category	Systolic (mm Hg)	Diastolic (mm Hg)
Optimal	< 120	< 80
Normal	120-129	120-129
High Normal	130-139	85-89
Grade 1 HTN (mild)	140-159	90-99
Grade 2 HTN (moderate)	160-179	100-109
Grade 3 HTN (severe)	>or = 180	>or = 110
Isolated Systolic HTN	>or = 140	< 80

### AYURVEDA PERSPECTIVE ON HYPERTENSION-

According to Ayurveda, high blood pressure involves all the *doshas*, the heart, and the blood vessels. We can see signs and symptoms of derangement of *vata dosha* mainly that of 'Vyana vayu' in high blood pressure. The treatment is to correct the balance of *vata dosha*. *Pitta visiation* is also seen often and should be treated.

People with *Pitta* and *Vata* predominant constitution and *Pitta and Vata* imbalance, are more prone to hypertension than any other. Treatment is based on bringing these imbalances back to normal. In the treatment of hypertension; nutrition, exercise, breathing exercises (*Pranayama*), yoga, meditation, behavioural modification along with various herbs and minerals are prescribed.

In Ayurveda there is no description of such a single disease which can resemble with hypertension. As per Ayurveda principles, in case of unknown disease, the physician should try to understand the nature of the disease through *Dosha*, the site of manifestation, etiological factors and then should initiate the treatment.

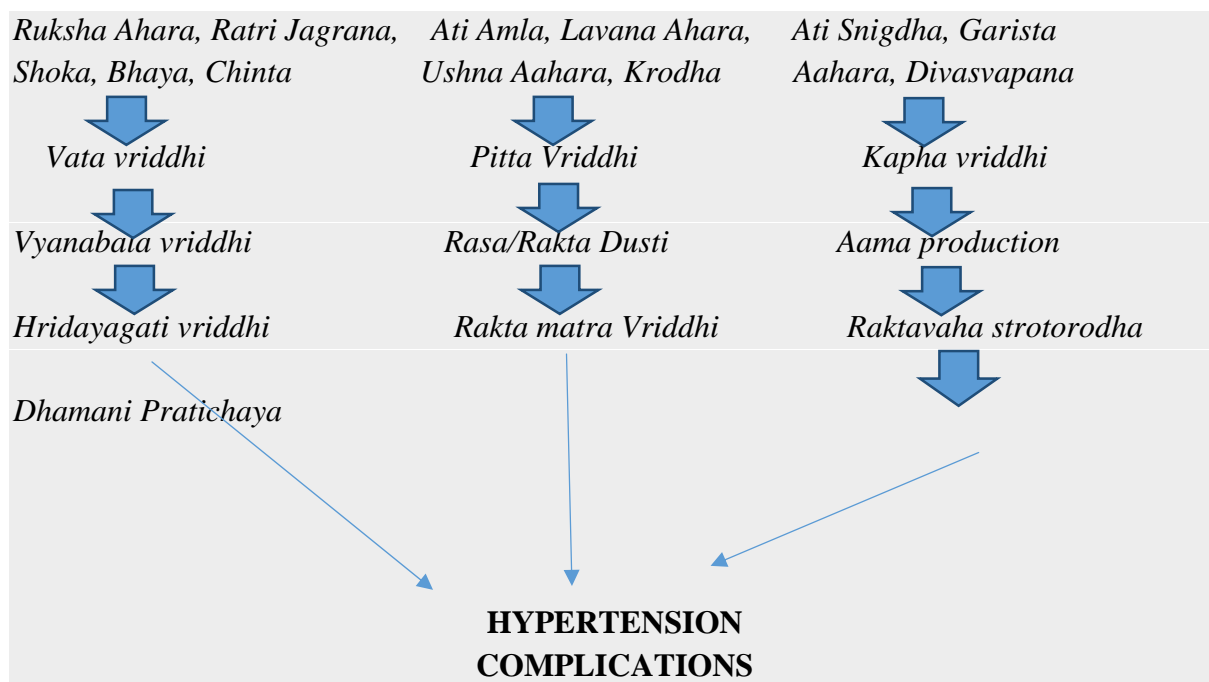
Hypertension is nothing but a '*Vata prad-hana Tridoshaja Vyadhi*', be greatly influ-

enced by morbid state of *Mana*. It may therefore be considered as *Sharira and Manasa Roga (Ubhayashrita Vyadhi)*.<sup>9</sup>

Y.N. Upadhyaya has equated the term *Raktagata Vata* for Hypertension. The disease *Raktagata Vata* is mentioned under the context of *Vatavyadhi*. The symptoms of *Raktagata Vata* are; *Teevrraruja* (severe pain), *Santapa* (fever), *Vaivarnya* (discolouration), *Aruchi* (anorexia), *Stambhta* (stiffness) soon after consuming food.<sup>10</sup>

### NIDANA AND SAMPRAPTI-

The pathogenesis of hypertension takes place at both physical and psychic level one at a time or simultaneously depending upon the *Dosha-Dushya Sammurchhana*. *Agnidushti* results in *Ama* formation and subsequent *Dhatudushti (Rasa and Rakta)*. This leads to *Kha-Vaigunya* i.e. obstructive pathology in channels. The *Ama* production results into *Strotorodha* (obstruction) and thus partially blocks the normal *Rasa- Rakta* circulation which further vitiates *Vyana Vayu*. This obstructed *Vyana Vayu* leads to forcible blood flow in the blood vessels causing increased resistance, hereby increasing blood pressure.<sup>11</sup>



While elevated blood pressure alone is not an illness, it often requires treatment due to the following short and long term effects like:

1. Cerebrovascular accidents (CVA) or strokes
2. Myocardial infarction
3. Hypertensive cardiomyopathy (heart failure)
4. Hypertensive retinopathy, nephropathy and encephalopathy
5. Congestion in the lungs
6. Left ventricular hypertrophy
7. Epistaxis
8. Blurring of vision owing to retinal changes
9. Impotence
10. Angina pectoris

#### INVESTIGATIONS

1. 24 hour ambulatory blood pressure monitoring
2. Urine for protein, blood and glucose
3. Serum electrolytes
4. Serum creatinine
5. Renal function test

6. Blood sugar fasting
7. Lipid profile
8. Electro cardiogram (ECG)
9. Chest X Ray (PA view)

#### MANAGEMENT -

**(1) NIDANA PARIVARJANA (avoidance of aetiological factors):-** According to Ayurveda, avoidance of the causative factor is the first line of treatment for all diseases. Excess intake of salt and fatty substance should be avoided and certain medicines such as NSAIDS, steroids, cough syrups etc. are also to be taken carefully.

**(2) HERBS:** Many herbs have been proved beneficial for treating hypertension. These drugs are-

#### ASHWAGANDHA:

Synonyms: *Varahakarni, Vajigandha*

Latin name: *Withania somnifera* Linn.

Family: Solanaceae

Rasa- Tikta, Madhura Guna- Laghu, Snigdha Vipaka- Madhura Virya- Ushna Karma- Kapha Vata Shamaka

Pharmacological actions & uses: The roots are astringent, bitter, somniferous, thermogenic, stimulant, aphrodisiac, diuretic and tonic.

Chemical constituents: Cuseohygrine, anahygrine, anaferine.

Parts used: Root.

Action on hypertension: The hypotensive effect is mainly due to autonomic ganglion blocking action and that a depressant action on the higher cerebral centres also contributed to the hypotension. Stress, as a major cardiovascular risk factor leads activation of sympathy-adrenal and hypothalamic pituitary adrenal (HPA) axis and causes oxidative stress. *Ashwagandha* possesses a potent antistressor effect and alleviates stress induced changes and provides cardio-protection.<sup>12</sup>

**SARPAGANDHA:** Synonyms: *Dhawala vitapa, Chandramara.*

Latin name: *Rauwolfia serpentina* Family: Apocynaceae

Rasa- Tikta Guna- Ruksha Vipaka- Katu Virya- Ushna Karma- Kapha Vata Shamaka

Chemical constituents: Reserpine, serpentine, serpentinine.

Parts used: Root.

Action on hypertension: *Rauwolfia serpentina* is a well proven antihypertensive drug. Reserpine, the purified alkaloid of *R. serpentina*, was the first potent drug widely used in the long-term treatment of HTN. Alkaloid Reserpine possesses marked and long lasting hypotensive activity- 1. By action on the vasomotor centre; it leads to generalized vasodilatation, with a lowering of blood pressure. 2. By depressant action on the cerebral centers.<sup>13</sup>

**JATAMANSI:** Synonyms: *Bhootjata, Tapaswini.*

Latin name: *Nardostachys jatamansi* Family: Valerianaceae.

Rasa- Tikta, Kashaya, Madhura Guna- Laghu, Snigdha Vipaka- Katu Virya- Sheeta Karma- Tri-dosha Shamaka

Chemical constituents: Jatamansika, Jatamansine.

Parts used: Rhizome.

Action on hypertension: Jatamansone is one of the main sesquiterpene found in *Nardostachys jatamansi*. It also increases high density lipoprotein levels, which are protective lipids. The sesquiterpene valeranone isolated from the subterranean parts of *Nardostachys Jatamansi* is found to antihypertensive properties.<sup>14</sup>

**ARJUNA:** Synonyms: *Dhawala, Kakubha*

Latin name: *Terminalia arjuna* Family: Combretaceae

Rasa- Kashaya Guna- Laghu, Ruksha Vipaka- Katu Virya- Sheeta Karma- Kaphapittaghna

Pharmacological actions & uses: The bark is astringent, cooling, cardiogenic. It is useful in fractures, ulcer, spermatorrhoea, leucorrhoea, diabetes, anaemia, cardiac disorders, haemorrhoids, diarrhoea associated with blood, cirrhosis of liver and hypertension.<sup>15</sup>

Parts used: Bark

Action on hypertension: *Terminalia arjuna* bark contains chemicals such as; triterpene glycosides, arjunetoside, together with oleanolic, arjunolic and arjunic acids and a cardenolide. *Arjuna* bark works as a heart tonic, helps to maintain normal blood pressure, promotes proper blood flow and

normal homocysteine levels. *Arjuna* bark helps to reduce the effects of stress and nervousness on the heart. *Arjuna* bark rich in Co-enzyme Q-10 has been used in Ayurveda for treatment of hypertension. It protects LDL cholesterol from damage through oxidation.<sup>16</sup>

**PUNARNAVA:** Synonyms: *Sothaghni*

Latin name: *Boerhavia diffusa* Linn. Family: Nyctaginaceae

Rasa- Madhura, Tikta, Kashaya Guna- Laghu, Ruksha Vipaka- Katu Virya- Ushna Karma- Tridosha Shamaka

Chemical constituents: Liriodendrin & Hypoxanthine.

Parts used: Whole plant, root.

Action on hypertension: It inhibits the renal cell damage and show antioxidant activity. Renal cell damage prevention and free radical scavenging activity may help in management of hypertension. In *Boerhavia diffusa*, Liriodendrin & Hypoxanthine are active antihypertensive agents and the former is Ca<sup>2+</sup> channel antagonist. *Boerhavia diffusa* is diuretic by increasing renal blood flow, which contributes to its antihypertensive action.<sup>17</sup>

**ALLIUM SATIVUM:**

Family: Alliaceae or Liliaceae Common name: Garlic.

Garlic has long been used for a variety of cardiovascular conditions, especially hyperlipidemia. It has also been reported to have hypotensive action. It is thought to increase nitric oxide production, resulting in smooth muscle relaxation and vasodilatation. One of the primary active compounds that gives garlic its characteristic odor and many of its healing benefits is called allicin.<sup>18</sup>

**(3) AAHARA (Diet):** Dietary modification is very important to prevent the development 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.<sup>19</sup> Excessive use of sodium chloride is toxic and damaging to arteries and other tissues, which may initiate atherosclerosis and lead to hypertension. Adopting a high potassium diet helps rid the renal system of excess sodium and restore sodium/potassium balance. *Acharya Charaka* has also considered Lavana as a substance not to be used in excessive quantity for longer duration.<sup>20</sup> Additional dietary changes beneficial for reducing blood pressure include adopting the diet which is rich in fruits, vegetables, whole grains and low-fat dairy products, reducing consumption of refined sugar and heavily processed food, reducing caffeine intake, and limiting alcohol consumption.<sup>21</sup>

**(4) VIHARA:** Upvasa (fasting), Samayka Vyayama (Regular exercise), Sadvritta palana, Yoga, Pranayama, Meditation and Gayatri or Omkara uchhara have significant role in management of hypertension. Stress reduction from practicing meditation, yoga, and other mind-body relaxation techniques can lower blood pressure. Yoga is formulated for many reasons and the health restoration is one of them. *Shavasana*, *Sukhasana*, *Dhanurasana*, *Makarasana*, *Vajrasana* along with regular practice of Pranayama are found to be very useful for lowering blood pressure in normal as well as hypertensive individuals if performed accurately and adopted as a lifestyle.<sup>22</sup>

## CONCLUSION

In this article I am trying to cover the most fundamental aspects of hypertension and explained the treatment of hypertension from an Ayurveda perspective. The concept behind an Ayurveda treatment of hypertension is attempting to find the root cause of the problem by treating the whole person, not just the symptom.

Ayurveda describes appropriate lifestyle and diet management called as Aahara and Vihara for maintaining homeostasis and thereby preventing hypertension. Commonly used herbs like *Arjuna*, *Ashwagandha*, *Jatamansi*, *Punarnava* etc. have proved significant role for combating this dreadful disease. Additional benefit of Ayurvedic management is absence of hazardous effects which is very important in view of the global acceptance of Ayurveda.

## REFERENCES

1. WHO report of Prevention and control for Cardio vascular diseases, 2001-2002, available from <http://www.sld.cu/.pdf/.international> cardiovascular disease statistics. pg. 2.
2. S.D. Pierdomenico et al. "Prognostic value of different indices of blood pressure variability in hypertensive patients." *American Journal of Hypertension*, 2009, 22(8):842–7.
3. Harrison's Principles of Internal Medicine, International Edition, Vol-I, 14th edition, 1998, McGraw-hill Companies, pg. 202.
4. Fagher B., Valind D., Thulin T. End organ damage in treated severe hypertension: Close relation to nocturnal blood pressure. *J Hum Hyperten*. 1995; 9(8): 605-10.
5. Hwang IS, Ho H, Hoffman BB, Reaven GM. Fructose-induced insulin resistance and hypertension in rats. *Hypertension*. 1987;10:512–6. [PubMed]
6. <http://www.ayurvedatreatments.co.in/ayurvedatreatments/index.php/ayurvedic-treatment-for-hypertension>
7. <http://www.ayurvedatreatments.co.in/ayurvedatreatments/index.php/ayurvedic-treatment-for-hypertension>
8. Guideline Committee, 2003 European Society of Hypertension – *J Hypertens*. 2003 ; 1011-53.
9. Chakrapanidatta Acharya. Vaidya Jadavaji Trikamaji Acharya editor. "Ayurveda-Dipika" commentary on Charaka Samhita: Sutra sthana 18/44-46, Varanasi: Chaukhamba surbharati prakashana; reprint 2000.
10. Chakrapanidatta Acharya. Vaidya Jadavaji Trikamaji Acharya editor. "Ayurveda-Dipika" commentary on Charaka Samhita: Chikitsa sthana 28/31, Varanasi: Chaukhamba surbharati prakashana; 2009. pg. 617.
11. Vaidya Yadunandan Upadhyaya editor. *Ashtanghridyam*: Sutra sthana 13/25, Varanasi: Chaukhamba Prakashana; 8th ed. pg. 111.
12. Kailash Chandra, B.G. Chaudhari, B.P. Dhar. Data base on medicinal plants used in Ayurveda, volume 3, edition 2007, published by central council for research in Ayurveda & siddha.
13. Gawade B.V et al. *Rauwolfia* (Reserpine) As a Potential Antihypertensive Agent: A Review, *Int. J. Pharm. Phytopharmacol. Res*. 2012; 2(1): 46-49, ISSN (Online) 2249 – 6084.
14. Dustidev Sahu et al. A review of action of commonly used antihypertensive drugs in Ayurveda with special reference to Samprapti Vighatana, *Asian Journal of Multidisciplinary Studies*, Volume 3, Issue 2, Feb. 2015, ISSN: 2321-8819 (Online)

15. Kailash Chandra, B.G. Chaudhari, B.P. Dhar. Data base on medicinal plants used in Ayurveda, volume 3, edition 2007, published by central council for research in Ayurveda & siddha.
16. Dr. Sharma sanjay. Role of Ayurvediya Medicines in Controlling Hypertension, IJRP Volume : 4 | Issue: 6 | June 2015 ISSN - 2250-1991.
17. Dustidev Sahu et al. A review of action of commonly used antihypertensive drugs in Ayurveda with special reference to Samprapti Vighatana, Asian Journal of Multidisciplinary Studies, Volume 3, Issue 2, Feb. 2015, ISSN: 2321-8819 (Online)
18. Dustidev Sahu et al. A review of action of commonly used antihypertensive drugs in Ayurveda with special reference to Samprapti Vighatana, Asian Journal of Multidisciplinary Studies, Volume 3, Issue 2, Feb. 2015, ISSN: 2321-8819 (Online)
19. L.J. Appel et al. "A clinical trial of the effects of dietary patterns on blood pressure." New England Journal of Medicine. 1997; 336(16): 1117–24.
20. Dr. Brahmanand Tripathi. Charaka Samhita: Vimana Sthana 1/15. Varanasi: Chaukhambha Surbharati Prakashan; 2009. Pg. 660.
21. R.J. Padwal et al. "The 2010 Canadian Hypertension Education Program recommendations for the management of hypertension: Part 2 – Therapy." The Canadian Journal of Cardiology. 2010; 26(5): 249–258.
22. V. Rainforth et al. "Stress Reduction Programs in Patients with Elevated Blood Pressure: A Systematic Review and Meta-analysis." Current Hypertension. 2007; 9(6): 520–8.

**Source of Support: Nil**  
**Conflict Of Interest: None Declared**

How to cite this URL: Bhageshwary Janagal & Rajendra Prasad Purvia : Role Of Medicinal Herbs In The Management Of Hypertension. International Ayurvedic Medical Journal {online} 2017 {cited May, 2017}  
Available from:  
[http://www.iamj.in/posts/images/upload/1745\\_1752.pdf](http://www.iamj.in/posts/images/upload/1745_1752.pdf)