



### Prevention and management of hypertension w. s. r. to

#### Ayurveda: review article

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#### ABSTRACT

*Ayurveda* is not only an ancient medical science but it is a complete life science. The main aim of *Ayurveda* is to maintain the health of a healthy person & to cure the disease of diseased person. From last few decades due to *globalisation* there is drastic change in working pattern, dietary habits & lifestyle. According to a new research, lifestyle diseases replaced traditional health risk factors resulting in an increase in incidents of diseases & deaths in India in the last two decades. Now most of the diseases & deaths are caused by High Blood Pressure, high cholesterol, obesity, alcohol use and poor diet. Unhealthy lifestyle is the root cause of many diseases broadly termed as lifestyle disorder. Hypertension is the most common lifestyle disease affecting population all over the world. About 26.4% of the world adult population in 2020 had hypertension and 29.2% were projected to have this condition by 2025. India is labeled

as global capital of hypertension. The *Ayurveda* concentrates on achieving the promotion of health, prevention and management of disease for a healthy and happy life in the ailing society. The principals of *Ayurveda* are focused on maintaining good health by good diet and good lifestyle. Proper dietary habits, proper exercise, Yoga, Meditation along with *Ayurveda* herbs can be beneficial to balancing of mind, which reduce stress and maintain the blood pressure. The present review article is aimed that the planning of proper herbal medications as per *Ayurveda* guidelines will definitely control the high blood pressure without any hazardous side effects of drugs.

**KEYWORDS:** *Aahara, Ayurveda, Health, Hypertension, Life style, Yoga, Herbal drugs.*

#### INTRODUCTION

Hypertension is described as a metabolic disorder having multiple aetiologies.

Hypertension is one of the most common lifestyle diseases today. Every third person is having suffering from it. Even kids can be victims of Hypertension. About in 90% patients there is no known cause for hypertension and this is very important to be alert.

Blood is driven through the arteries at a considerable pressure. If there were no pressure, there would be no circulation. It is highest when the heart contracts (systole) and lowest when it relaxes (diastole). In a healthy young male (adult) & the normal pressure at systole is 120 mm Hg. It is often a little lower in female. The blood pressure tends to rise with age.<sup>1</sup>

Blood pressure is the pressure exerted by blood on the walls of blood vessels. It is characterised by increased systolic and diastolic blood pressure i.e. elevated BP. This also causes changes in large arteries. There is thickening of the media, increase in collagen and secondary deposition of calcium. These changes results in loss of arterial compliance which in turn leads to more pronounced arterial pressure wave. Endothelial dysfunction with alternations in agents such as Nitric oxide and endothelins appear to be involved. Left ventricular hypertrophy and changes in renal vasculature can also be seen.<sup>2</sup>

Transition of our ancestors from primarily diurnal standard of living to unhealthy diet habits, physical inactivity, excess workload, increasing mental stress, addiction of drugs, intake of alcohol & smoking & also the habit of sophisticated life style in developing countries are major contributors in the growing incidence of Hypertension.<sup>3</sup>

An estimated 1.13 billion people worldwide have hypertension mostly two-third of them living in low and middle income countries.

It is a major cause of premature death worldwide. One of the global targets for non – communicable diseases is to reduce its prevalence by 25% by 2025.<sup>4</sup>

It has become a serious health problem with continuously increasing rates of prevalence & mortality by increasing the risk of heart, brain, kidney & other diseases.<sup>5</sup>

According to *Charakacharya*, sometimes neither it is possible nor it's necessary to identify a disease by a name an Ayurvedic physician should attempt to construct the *Samprapti* (Pathogenesis) of a given clinical condition on the basis of signs, symptoms and investigative findings in each case and should plan the management accordingly.

The disease Hypertension is abnormality of *Rakta Dhātu*, (Blood) and is popularly known as *Shonit Dusti* (Vitiated Blood). The unique category of clinical presentation comprising *RaktaPitta*. (Abnormal bleeding from different roots of the body) *Rakta Pradara* (excessive vaginal bleeding), *RaktaMeha* (Hematuria) etc. and *Vat Rakta* (Group of vascular disorders with Gouty Arthritis) and some of mucosal inflammations as *Mukhapaka* (Oral Ulcers), *Akshiraga* (Redness of Eyes) *Upakusha* and *pootigraha* are also regarded maladies of *Shonita Dusti* (vitiation of blood). *Shiroruka* (Headache) *Klama* (Nausea, Vomiting), *Anidra* (sleeplessness), *Bhrma* (imbalance of the body), *Buddi Sammoha* (Sluggishness in Intellects),

*Kampa* (Tremors) etc. Also it is interesting to note that all these symptoms are akin to manifestations of hypertension. More to add, *Mada* (Delirium), *Moorchha* (Stupor) and *Sanyasa* (Coma), the different diseases caused by *Shonita Dushti* (vitiation of blood) are described also as progressive manifestation of increasing *Shonita Dushti*. So also, such a sequelae is equally true in relation to malignant Hypertension. All these deliberation corroborates parlance of the *Shonitadusti* and its different clinical manifestation of *Mada Moorchha* and *Sanyasa* to the essential Hypertension as well as Malignant Hypertension.

The essential hypertension when thought adapting the principle of *Dosha*, *Dhatu* and *Mala* theory pathology seems to be centered on *Shonita Dhatu* and *Tridosha*. there is a need to understand the cause, pathogenesis, acuteness, chronicity, complication and Symptomatology of the disease & its holistic management.

### Aims And Objectives:

1. To study the prevention and management of Hypertension w.s.r. to Ayurveda.
2. To find out the factors involved in hypertension as per *Ayurvedic* line of thinking.
3. To explain disease hypertension in terms of *Ayurveda*.
4. To study anti-hypertensive actions of herbal medicines, different yoga & *pranayama* modalities

### MATERIALS AND METHODS

This article is based on review of current researches regarding anti – hypertensive

values of *Ayurvedic* drugs and Yoga modalities.

Materials related to Hypertension, *ayurvedic* drugs and other relevant topics have been collected. Also referred to modern medicine books and explored various websites to gather information on the relevant topic. Recent researches & also various popular journals have also been reviewed while writing this article.

### 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 tumor.
- **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).

### CLASSIFICATION OF HYPERTENSION:<sup>6</sup>

Category	Systolic (mm of Hg)	Diastolic (mm of Hg)
Normal	< 130	< 85
High Normal	130 – 139	85 - 89
<b>Hypertension</b>		
Stage 1 HTN	140 – 159	90 - 99

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

### Signs and Symptoms of Hypertension<sup>7,8</sup>

Most of the patients with hypertension have no specific symptoms except an elevated blood pressure. Symptoms of hypertension are usually variable and at time very vague. The popular symptoms of hypertension as following:

- 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

### Ayurveda Approach to Hypertension

According to Ayurveda, high blood pressure involves all three *Doshas*, the heart, and the blood vessels. In high blood pressure we can see signs and symptoms of disturbance of *Vata dosha* that mainly of '*Vyana vayu*'. The treatment is also on the basis to correction of

the balance of *Vata dosha*. *Pitta dosha* vitiation is also seen often and it should be treated. People with *Pitta* and *Vata* predominant constitution are more prone to hypertension than any other. Unprocessed anger, frustration, irritability, anxiety and fear are leads to mal-adaptation of the endocrine system, which leads to conditions like hypertension. Some Ayurveda scholars are correlate hypertension with the *Raktagata vata*. According to *Maharshi Charaka*, it is not essential to give a specific name to the every disease. In those conditions the physicians should treat the patient to be considering the nature of disease, its sites, etiology and *Dosha-dushya sammurchhana*.

### Factors involved in HT

In Ayurveda, Hypertension can be considered as a *Raktaj Roga*, where the *Vata* is the associated (*Anubandha*)

*Dosha*. Thus, the term *Raktagata Vata* is more appropriate

to the condition instead of the above two. Therefore the treatment principles of *Raktaja Rogas* like

*Raktapittahari Kriya*, *Virechana* and *Raktamokshana* can also be administered effectively in hypertension.

### ➤ *Vata Dosha*

a. ***Prana Vayu***: *Hridaya Dhruka* means the *Dharana* of heart is the typical function of *Prana Vayu*. It can be correlated with the vagal inhibition of nervous system.<sup>10</sup> Vasomotor center controls the blood pressure by autonomic nervous system. In the same way *Prana Vayu* also controls the

blood pressure by controlling of *Vyana Vayu*. So the pathology of *Prana Vayu* can be cause of abnormality of heart as well as vessels and developing hypertension.

**b. *Vyana Vayu*:** This is responsible for contraction, relaxation and various movements in human body.<sup>11</sup> With the help of *Vyan Vayu*, heart will be contracts and propels blood continuously to all over body. So, it is proves that the involvement of *Vyana Vayu* in regulation of blood pressure.

**c. *Samana Vayu*:** After the digestive process *Samana Vayu* can be helps in the transport of *Rasa* into the heart from the digestive organs. Apart from the heart it circulates in the whole human body.<sup>12</sup> Thus it proves that the *Samana Vayu* has an important role in the blood circulation and blood pressure.

**d. *Apana Vayu*:** Vitiation of *Apana Vayu* hampers the excretion of *Purisha* and *Mutra*.<sup>13</sup> So, these are affecting homeostasis of human body which may be affect blood pressure. So it proves that the *Apana vayu* also plays important role in regulation of normal blood pressure.

#### ➤ **Mana (Mind)**

There is a close interrelation between the body and mind (*Mana*). *Manasik Bhavas* like *Krodha* (anger), *Chinta* (worry), *Bhaya* (fear) etc. plays an important role in the pathogenesis, progression and prognosis of all disease.<sup>14</sup> This fact is focus that the *Mana* plays an important role in hypertension. Modern medical science also considers that the involvement of psyche (*Mana*) can be causative factors for hypertension. According to *Ayurveda*, *Vayu* is the regulator and stimulator of *Mana*.<sup>15</sup>

This basic principle of Ayurveda should not neglect while treating of hypertension.

#### **Line of treatment in Ayurveda**

##### **1. *Nidana Parivarjan***

Avoidance of etiological factors of a disease is known as *Nidana Parivarjanam*. The following causative factors of hypertension should be strictly avoided.<sup>16,17</sup>

- Excessive intake of salt, vegetable oils, chilies, fast foods, junk foods, spicy foods, tea and coffee etc.
- Alcohol consumption and smoking.
- Day sleeping and awakening at night.
- Excitation, provocation, quarrelling, worries and anxieties
- Tight clothing
- Excessive indulgence in sexual activities

##### **2. Life Style Modifications**

- Weight reduction
- Regular physical exercise, daily brisk walking for half an hour
- Well-timed sleeping and awakening
- Regular practice of Yoga and herbal Meditation
- Avoid the intake of oily, salty, sour and spicy food
- Intake of balanced diet, more use of fruits and green vegetables in diet
- In diet more use of wheat, Barley, Sorghum, green gram, horse gram, Bitter gourd, Bottle gourd, Turnip, Carrot, Radish, Indian gooseberry, Cucumber, Black grapes, Pomegranate, Apple, Pineapple, milk etc.

##### **3. *Shamana Chikitsa***

The following drugs (single/compound drugs) are commonly used for prevention



and control of Hypertension.

#### a. Single Drugs

*Sarpagandha*, *Ashwagandha*, *Jatamansi*, *Brahmi*, *Shankhapushpi*, *Lasun*, *Mandookparni*, *Yashtimadhu*, *Arjuna twaka* etc drugs are generally administered in the form of *Churna* (powder), *Swarasa* (juice), *Kwatha* (decoction) and *Sita kashaya*.

#### b. Compound Drugs

- **Churna:** *Sarpagandha churna*, *Ashwagandha churna*, *Shatavari churna*, *Yashtimadhu churna*, *Arjuna twak churna*.
- **Modak:** *Vrihat Ashwagandha modak*, *Himsagar modak*.
- **Avaleha:** *Brahmi rasayana*
- **Vati:** *Brahmi vati*, *Sarpagandha Ghana vati*
- **Rasoushadhi:** *Chintamani chaturmukh rasa*, *Rasaraja rasa*
- **Asava-Arishta:** *Saraswatarishta*, *Ashwagandharishta*, *Arjunarishta*, *Punarnava asava*.
- **Pishti:** *Mukta pisti*, *Praval pishti*, *Jaharmohara khatai pishti*
- **Bhasma:** *Mukta bhasma*
- **Taila:** *Himsagar taila*, *Brahmi taila*
- Medicated oil is boiled with milk a hundred times known as *Shatavartita Kshirabala Taila*. Five drops of this oil are mixed with a cupful of milk and given to the hypertensive person, then there will be assured benefits.<sup>18</sup>

**Treatment according to Doshas predominance:**<sup>19</sup>

#### 1. Vata Dosha:

- Take 125 mg of *Serpagandha* and

*Jatamansi* 3 times daily for 2 – 3 months.

- Eat entire crushed clove (with honey) once or twice a week.
- Take *Saraswat* powder in warm milk.

#### 2. Pitta Dosha:

- Use tranquilizing herbs (example 250 mg of *Brahmi*, or *Brahmi Rasayana*, *Saraswat* powder) at night.
- To purify *Pitta*, take 1 gram of *Sariva* (Indian *Sarsaparilla*) for 15 days.

#### 3. Kapha Dosha

- 1 gm. of *Guggulu* or *Arjuna* twice daily for 3 months.
- 250 mg. of *Shilajit* 3 times daily for 3 months.
- *Triphala Guggul* 1 gm. daily for 3 months.

#### 4. Shodhana Chikitsa

This is a specialized therapy of *Ayurveda* to eliminate toxins from the human body by the giving of bio-cleansing procedures i.e. *Panchakarma*.

a. **Basti karma:** can be applied for the disease as it is directly indicated for *Vata Vyadhi*.

b. **Virechan karma:** also useful in *Shonitaj Vyadhi* as described by *Maharshi Agnivesha*.

c. **Shirodhara:** with medicated liquids, *Takra* (Butter milk), milk, water, medicated oils can be get good improvement in high blood pressure.

d. **Rakta mokshan karma:** also directly indicated in *Shonitaj Vyadhi*.

#### 5. Aahariya dravya

*Ayurveda* is the conventional medicinal system that strategy of curing and preventing of all diseases using of natural resources. So we can manage the hypertension on the basis of regular good diet. Following *Aahariya dravyas* have some beneficiary property to

good work on hypertension;

**a. Mudga (Phaseolus tribolus)<sup>20</sup>**

**Chemical constituent:** Vitexin, luteolin & kaempferol. *Mudga* is having an important role on *Raktavaha Sansthana*. Because, of its *Laghuguna* get digested easily. In hypertension due to *Agnidushi* day by day increases blood pressure and creates complications. Hence, *Laghumudg Aahara* are most useful in hypertension. So, one should have *Mudga* in regular diet.

**b. Methika (Trigonell foenum)<sup>21</sup>**

**Chemical constituent:** Steriodalsaponin, Tigonin, Trigonelloside, Choline & Gitogenin. *Methika* digest the *Aama* in body and worked as *Deepana Dravya*. *Methika* also do *Malashudhi* and improves *Jatharagni*. Then because, of good *Agnirasa*, *Raktavaha Sanasthana* gets *Prakruta* and decreases blood pressure.

**c. Papaya (Carica papaya)<sup>22</sup>**

**Chemical constituent:** Papain, Caricene, Myrosin & Carpasemine. Papaya fruit is having *Ushnavirya*. Its *Ushnavirya* plays an important role in *Aama Pachana*. Which *Aama* is increases blood pressure by blocking the *Raktavaha Srotasa*. Papaya is mainly used in hypertension which develops from *Vikruta Pachanashakti*.

**d. Drksha (Vitis vinifera)<sup>23</sup>**

**Chemical constituent:** Trepenes, Maltase, Norisoprenoids & Glucose. *Draksha* works on *Vata Dosha* (*Vyana* and *Aapana*). *Draksha* works as *Anulomaka* through which pressure of *Aapana Vayu* on *Vyana Vvayu* and *Pureeshavaha srotas* releases. Therefore, important *Hetu Malavrodha* of

hypertension is decreased hence, it's indirectly helps in lowers the blood pressure.

**e. Marecha (Piper nigrum)<sup>24</sup>**

**Chemical constituent:** Piperine, Piperidine, Piperttine, Chavicine *Marecha* is having *Chedana* property which is very useful in dissolving the blockages and releasing the pressure of blood on arterial walls. *Marecha* is very powerful substance so, used in very less quantity as a medicine.

**f. Jeeraka (Cuminum cyminum)<sup>25</sup>**

**Chemical constituent:** Cumaldehyde *Jeeraka* is *Vikrutakaphavatahara* also *Raktashudhikara*.

Hence, used in hypertension. Also the property *Mutrala* of *Jeeraka* gives significant antihypertensive effect without any side effect. Therefore, *Jeeraka* can safely recommended for longer period to the patients of mild to moderate hypertension mainly associated with fluid retention.

**6. Yoga & Meditation in HTN:**

Excessive mental, emotional and physical stress can get worse the symptoms of many chronic disorders, including hypertension. This is due to the cause of hormonal changes and other biochemical responses to stress. That can imbalance the nervous system and depress the healing ability of the body.

Regular practice of integrated Yoga can promote tranquility of mind and increase resistance to stress.<sup>26</sup> This stress can be causative factor of hypertension. Combination of relaxing postures (*Shavasana*, *Sukhasana*, *Dhanurasana*, *Makarasana* and *Vajrasanas*), breathing exercises (*Pranayama*) and meditation has given better results in hypertensives. Relaxation postures of body are reducing the activity of Sympatho-Adrenal system, this

helps in reduction of catecholamine activities and gradually reduce the blood pressure.

## CONCLUSION

Hypertension is a lifestyle disorder. It is treated with changes in our lifestyle and medicines. In modern science there are various anti hypertensive allopathic drugs are available for the control of blood pressure. These anti hypertensive drugs can help to control blood pressure, but it will not cure permanently high blood pressure.

When we stop treatment, our blood pressure and it related health problems will be rise. So, for a healthy future, everyone have to follow the Ayurveda regimens about the hypertension. Ayurveda has an upper edge in treating the hypertension with emphasis on its root cause, where modern medicine is so entrenched in its pharmaceutical based symptoms treatment. Ayurveda approach to treat every disease according to its *Samprapti* (pathogenesis) and it is very practical. This review about the hypertension is proved that the proper medications as per Ayurveda guidelines will definitely control blood pressure without any hazardous side effects. Hypertension can also managed by well following of *Pathya* and *Apathyaas Aahar - Vihar* (diet management and appropriate lifestyle) and *Yoga* mentioned in Ayurveda. These are maintaining homeostasis of human body and thereby preventing the hypertension.

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