

**ROLE OF AYURVEDA IN THE MANAGEMENT OF HYPERTENSION**

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**ABSTRACT**

Hypertension is a most common life style disorder. It is defined as blood pressure is more than 140/90 mm of Hg. It is also known as silent killer. Now-a-days prevalence rate of hypertension is increasing day-by-day due to rapid modernization and stressful life. Improper life style and unhealthy dietary habits plays an important role in the development of Hypertension. Hypertension is not described in any *Samhita's* and *Grantha's*. So, the exact co-relation is difficult to find out in *Ayurveda*. The disease can be explained on the basis of *Dosha*, *Dushya*, and *Strotas*. *Acharya Charaka*, has explained in *Charaka Sutrasthana-18*, if disease is unknown, the physician should try to understand the nature of the disease through *Dosha*, *Dushya*, *Samprapti*, then the treatment is given according to its nature. In modern medicine, lots of drugs are available for controlling blood

pressure but they have some side effect. Hence, people are looking towards *Ayurvedic* treatment. In *Ayurveda*, treatment is based on *Ayurvedic* principle, proper *Dincharya*, *Ritucharya*, *Pathya-Apathya*, life style management, *Shodhan* and *Shaman Chikitsa* that helps to decrease hypertension and its complication.

**KEYWORD:** Hypertension, Essential hypertension, Diet, Lifestyle disease.

## INTRODUCTION

*Ayurveda* is most popular ancient system of medicine. It is based on the principles of prevention is better than cure. Now a days hypertension becomes most common life style disorders. It is due to changing lifestyle such as excessive intake of spicy, salty food and insufficient consumption of fruits and vegetables. Stress factor and faulty life style, lack of exercise also responsible for hypertension.

Hypertension is chronic and often asymptomatic medical condition in which systemic arterial blood pressure is elevated beyond normal limits I e blood pressure more than 140 / 90 mm of hg.<sup>[1]</sup> I t is also known as silent killer because it rarely exhibits symptoms before it damages the heart, kidney and brain. It is major risk factor for the development of cardiovascular disorder, stroke, congestive heart failure and renal disorders.

In *Ayurveda*, exact description of hypertension is not given. Hence it is difficult to find out exact references of hypertension. But in *Charaka Samhita Sutrasthan*, *Acharya Charaka* has explained that if it is not possible to make the diagnosis of any disease then physician should try to understand the nature of disease and make the diagnosis and treatment according to disease.<sup>[2]</sup>

In modern era, many *Ayurvedic* scholars have considered hypertension under the heading of various diseases such as *Dhamani-Prartichaya*, *Raktagatavata*, *Siragatvata*, *Raktapradoshaj-vyadhi* and *Raktachapa-adhikya*etc.<sup>[3]</sup>

In modern medicine, there are various modern drugs are available as antihypertensive eg.  $\beta$ -Blockers, calcium channel blockers and diuretics but these drugs have many side effect. Hence, it is need of time to prevent and manage disease to avoid further complication.

So, present study efforts are done to collect the various preventive measurements in *Ayurveda* such as life style management, *Shodhan Chikitsa* and *Shaman Chikitsa*.

## AIM AND OBJECTIVE

To study the role of *Ayurvedic shaman aushadhis* and procedures (*Virechana*, *Basti*, *Shorodhara*, *Siravedhana*, *Pranayama*, *Yog*, *Pathya* *apathya*) according to *Ayurveda* and modern science which is helpful for the management and prevention of hypertension.

## MATERIAL AND METHODS

This is based on conceptual study. The literature review collected from classical texts of *Ayurveda*, modern text books and related web sites.

### Hypertension

#### Defination

“Hypertension is defined as systolic blood pressure of 140 mm of Hg or greater and diastolic blood pressure (DBP) of 90 mm of Hg or greater, based on the average of two or more properly measured, seated BP readings on each of two or more visits.<sup>[4]</sup>”

Types-

#### A] Primary / Essential hypertension

It is Common type, occurs in 90% of people, It has no clear underlying cause.

#### B] Secondary hypertension

It is seen in 10% of people, It has underlying cause like renal, endocrine or vascular disorders.

Systolic 130-139 mmHg and/or Diastolic- 80-89 mmHg

**Grade 1 Hypertension:** Systolic 140-159 mmHg and/or Diastolic 90-99 mmHg

**Grade 2 Hypertension:** Systolic 160-179 mmHg and/or Diastolic 100-109 mmHg

**Grade 3 Hypertension:** Systolic 180 mmHg or above and/or Diastolic 110 mmHg or above

According to *Ayurveda* Vyan Vayu responsible for blood circulation, Hence Vitiated Vyan Vayu is mainly responsible for high blood pressure<sup>[5]</sup> In hypertension there is predominance of Vata, Pitta, Kapha Doshas.

**Table 1: Types and classification of hypertension.<sup>[6]</sup>**

Catergory	Systolic BP	Diastolic BP
Optimal	< 120	<80
Normal	<130	< 85
High normal	130-139	85-89

**Table 2: Hypertension grade.<sup>[7]</sup>**

Category	Systolic BP	Diastolic BP
Grade (Mild)	140-159	90-99
Grade (Moderate)	160-179	100-109
Grade (Severe)	>180	>110

**Hetu/Causative factors of hypertension:** Hypertension is not described in any *Samhitas*. But causes of hypertension are described in modern medicine; hence it can be analyzed according to *Ayurveda*.<sup>[8]</sup>

1. Genetic factors(*Beejdoshas*)
2. Environmentfactors
3. Age: Old age-predominance of *VataDosh*
4. Excessive intake of salt
5. Obesity
6. Alcohol intake
7. Physical activity
8. Psychological factor's (*Manasik Bhav*).

**Ayurvedic management:** In *Ayurvedic* medicine there are various *Shodhan* and *Shaman Chikitsa* available for hypertension. They are used popularly and effectively for the management of hypertension.<sup>[9]</sup>

**Shodhan chikitsa:** *Bahya-Snehan, Sarvang Swedan, Shirodhara, Virechan, Basti, Nasya, Raktmokshan, Hrudbasti*, which is effectively used in hypertension.

**Bahya snehan-** *Sarvang abhyanga - Sahachar tail, Dhanvanatar Tail* can be used.

**Sarvang swedana-** *Avagaah Swed, Mrudu Bashpa* can be used.

### **Virechana**

For *virechana* purpose *erand Tail & Shunthi Kwath* should be used daily at Early Morning. The *Virechana Karma* clears the *Margavarodha* (obstruction), eliminates the morbid *Doshas* from *Rakta*, and regulates the activity and movement of *Vata*. Thus, it controls the high BP. According to the modern point of view, during *Virechana* process, the inflammation of intestinal mucosa leads to hyperemia and exudation resulting into increased passage of protein-rich fluids through vessel walls to intestinal lumen. Increase in fluid volume also results in the dilution of toxic material. Evacuation of the fluid from *Rasa- Rakta* by *Virechana* is the direct process that leads to decrease in fluid volume.

Few studies correlated acetylcholine with *Vata*, catecholamine with *Pitta*, and histamine with *Kapha*. It has been observed that after *Virechana*, there is reduction in the plasma catecholamine contents of the patients to a statistically significant level. In that study, it has been observed that the effect of *Virechana* on neurohumors was highly significant. *Virechana* evacuates all morbid *Doshas* from all micro to macro *Dhatu* channels and regulates *Vata*, thus decreasing all symptoms of *Vata, Pitta, and Kapha* on *Srotas* level.<sup>[10]</sup>

**Basti**

For Basti Dhanvantar Tail, Dhashmool, Yashti, Pimpali, Punaranava, Gokshur, Haritaki, Sarpagandha, Bramhi, Jatamansi Kwath can be used.

Acharya Charaka says when Vata is obstructed by Pitta, Kapha, Meda, and Rakta, Virechana should be given with *Eranda Taila*.<sup>[11,12]</sup> In EHT, the chief culprit is Vyana Vayu, and is a disease of *Bahya*.<sup>[13]</sup> *Madhyama Rogamarga*, and *Marmagata Vyadhi*. In these conditions, *Basti* is the main line of treatment. In both the procedures, mild purgation will occur. As to the mechanism of action of laxative that has been stated in pharmacology, “the laxatives are also likely to act through multiple mechanisms affecting the epithelial transfer directly or indirectly, leading to decreased sodium absorption and increase in chloride excretion by epithelial cell.” This provides a hint that mild laxative action may help in reducing the sodium retention and thus controlling the BP.

**By neural stimulation mechanism**

BP is regulated by the feedback of the neural tissue of Vaso-Motor Center (VMC). VMC activity in turn depends upon reflexes from periphery (neural and chemical) and from higher centre. Sympathetic stimulation causes secretion of norepineprine & activation of pressure area of VMC which is Nucleus of the Tractus Solitarius-, which in turn causes vasoconstriction and leads to rise in BP, while parasympathetic stimulation causes activation of depressor area of VMC, which in turn Parasympathetic stimulation decreases heart rate by releasing acetylcholine. It acts on the pacemaker cells of the SA node, which results in decrease in BP.

The long-term regulation of BP occurs through Renin-Angiotensin- Aldosterone (RAA) axis of endocrine mechanisms. Lower part of GIT is richly supplied with parasympathetic nerves which on stimulation with *Basti* (either by chemical or mechanical receptor) may cause decrease in secretion of RAA complex, and by activating depressor area of VMC which causes vasodilatation and results in decrease in BP.<sup>[14]</sup>

**Nasya shaman nasya**

Shaman nasya can be advised for reduction of BP. *Bala Tail*, *Bramhi Ghrit* and *Anu Tailam* can be used.

### ***Raktamokshan***

As *Acharya* says vitiation of *Rakta Dhatu* by any of *Doshic* impairment hampers the normal functioning of *Rakta*. Hence it is necessary to pacify the vitiated *Dosha* out of the body with the help of *Siravedh*. So as the normal amount of blood is letting out significantly give better result in lowering the blood pressure. *Hetu* explained in *Vidhishonitiya Adhyaya* are responsible for quantitative increase of *Rakta dhatu* which impedes the *Gati* of *Vata Dosha* hence normal *Parivahan* is hampered. So as to decrease the *Gati* of *Vata* some amount of *Rakta dhatu* was removed. As upto 40-60 ml of blood let out from the *sira*, It give good results in the *vata* functioning, which directly result in the lowering the blood pressure. It can be seen by the change in the blood pressure values, which calculated before and after the procedure. It reduces blood pressure by 10 to 20 mm of Hg.

### **Shirodhara**

According to *Ayurveda*, *shirodhara* is beneficial for *Vata* and *Pitta dosha*. When out of balance, *Vata dosha* exhibits as fear, insecurity, worry, racing thoughts. Out of balance *Pitta dosha* exhibits as anger, irritability, frustration, judgment. The action and qualities of the liquid used in *shirodhara* counters the qualities of the out of balance *doshas*. It soothes, nourishes and pacifies the *doshas* through the constant pouring of the liquid to the forehead & scalp.

Stress, according to *Ayurveda*, is a state of imbalance of *pranavayu*, *sadhaka pitta*, and *tarpana kapha*. *Shirodhara* reestablishes the functional integrity between these three *doshik* (*doshas*) subtypes and thus helps alleviate stress. In the procedure of *Shirodhara*, particular pressure and vibration is created over the forehead. The vibration is amplified by the hollow sinus present in the frontal bone. The vibration is then transmitted inwards through the fluid medium of cerebrospinal fluid (CSF). This vibration along with little temperature may activate the functions of thalamus and the basal fore brain which then brings the amount of serotonin and catecholamine to the normal stage inducing the sleep. may cause tranquility of mind and induce natural sleep.

*Shirodhara* is deeply relaxing and induces a relaxant state; these effects are mediated by the down regulation of the sympathetic outflow. The center of the forehead, which was evolution wise related to the third eye, is connected atavistically to the pineal gland. This spot is known as *Agneya Chakra* in the yoga tradition. Focusing on *agneya chakra* with closed eyes during meditation leads to psychosomatic harmony. As the oil drips on the *agneya*

*chakra*, it is proposed that the meditation like effect is a consequence of stillness of mind leading to adaptive response to the basal stress

**Shaman chikitsa:** In *Charak Samhita*, Acharya Charak has explained *Hrudya Gana*, which is effective in Cardiac disorders, which plays important role for the management of hypertension.<sup>[15]</sup>

**Table 3: List of 10 *Hrudya gana dravyas*.**

S. R. No.	Name	Latine Name	Action	Doshghnata
1.	<i>Amra</i>	<i>Mangifera indica</i>	Antitoxic, Diuretic, Cardiac stimulant, Cardiotonic	<i>Pakwa Fruits- Vatapittashamak. Apakwa fruits- Tridoshkarak</i>
2.	<i>Amrataka</i>	<i>Spondias pinnata</i>	Antioxidant Astringent	<i>Vatanashak</i>
3.	<i>Lakuca</i>	<i>Artocarpus lakoocha</i>	Laxative	<i>Vatapittashamak</i>
4.	<i>Karmarda</i>	<i>Carissa carandus</i>	Hypotensive, Histamine releasing activity, Cardiotonic, Cardiac depressant	<i>Vatashamak</i>
5.	<i>Vrikshamla</i>	<i>Garcinia indica</i>	Cardiotonic	<i>Kaphavatashamak</i>
6.	<i>Amlavetas</i>	<i>Garcinia pedunculata</i>	Cardiotonic, Carminative	<i>Kaphavatashamak</i>
7.	<i>Kuwal</i>	<i>Zizyphus jujube</i>	Cardiotonic	<i>Vatashamak</i>
8.	<i>Badar</i>	<i>Zizyphus sativa</i>	Cardiotonic, Anti-inflammatory, Sedative	<i>Kaphavatghna</i>
9.	<i>Dadima</i>	<i>Punica granatum</i>	Antioxidant, Hypotensive	<i>Tridoshaghna</i>
10.	<i>Matulunga</i> : 2-Types: 1) <i>Madhur</i> 2) <i>Amla</i>	<i>Citrus medica</i>	Cardiotonic	1. <i>Madhur type: Vatapittashamak</i> 2. <i>Amla type: Kaphavatashamak.</i>

**Table 4: In *Ayurvedic* text some drugs, which acts on Heart and Can be used to manage the blood pressure levels are as mentioned below.<sup>[16]</sup>**

S.R.NO.	Name of drugs	Latin Name	Action
1	<i>Shunthi</i> (Ginger)	<i>Zingiber officinale</i>	Antiinflammatory, Antiplatelet, Hypotensive
2	<i>Arjuna</i>	<i>Terminalia arjuna</i>	Cardiotonic, Hypotensive, Diuretics
3	<i>Ashwagandha</i>	<i>Withania somnifera</i>	Antidepressant, Antioxidant, cardioprotective



4	<i>Amala</i>	<i>Embllica officinalis</i>	Antioxidant, cardi tonic
5	<i>Rason (Garlic)</i>	<i>Allium Sativum</i>	Antioxidant Hypotensive
6	<i>Bramhi</i>	<i>Bacopa Monnieri</i>	Antioxidant, cardi tonic
7	<i>Sarpagandha</i>	<i>Rauwolfia serpentina</i>	Hypotensive, sedative, Antispasmodic, Vasodilator
8	<i>Gokshur</i>	<i>Tribulus terrestris</i>	Diuretics

### Stress management

Hypertension is often worsened by the experience of continuous stress. Hence stress management plays an important role for the management of hypertension.

Meditation, *Yoga*, *Praynama* is an important part of *Ayurveda*. These reduce the anxiety and stress factor.

**Meditation:** Meditation is the best therapy for relaxation which reduces anxiety and stress which allow the body to heal.

Daily 10-20 minutes of meditation twice a day for the healthy well being of life.<sup>[17]</sup>

**Yoga and Pranayama:** Various *Yoga* and *Pranayama* gives benefit in stressment. It relaxes body mind and soul which is helpful in reduction of hypertension.

Avoid heavy exercise. Take adequate sleep. Sleep is important factor for reducing stress.<sup>[18]</sup>

### Lifestyle management

*Dinacharya* (Daily Regimen), *Ritucharyapa-lan* (Seasonal Regimen), *Rasayana* (Rejuvenations Therapies), *Achar Rasayana* (Ethics and code of conduct), which plays an important role for the management of hypertension. That means healthy diet, exercise, avoids smoking and alcohol etc. will maintain blood pressure.<sup>[12]</sup>

### Marma chikitsa

*Talahridya marmas* are associated with health of *hrudaya*. They are four in number in the body, two in upper limb and two in lower limb. In upper limb *Talahridaya marma* is situated in the mid of the palm at the line joining the middle finger. In the lower limb, *Talahridaya marma* is situated in the center of the sole in a straight line drawn from the root of the middle finger.<sup>[20]</sup> The classical texts of *Ayurveda* instruct to prevent the *marma* from being injured. But, in the current era, these *marma* are physically stimulated in controlled way to treat diseases. So, it can be given to control the hypertension. The patient should be advised to identify and pressed this *marma* in the left-hand along the middle finger and was pressed in a



controlled way, 12 to 15 times per minute in coherence with breathing for 3 minutes. This *marma* can also be pressed by the therapy receiver itself with the help of index finger and thumb of the other hand after through instruction. Thus, this therapy can be taught to the patient for daily stimulation at home. In recent study proper stimulation of *Talahrudaya marma* on daily basis is shown to be effective in normalizing the blood pressure.<sup>[12]</sup> This reinforces the hypothesis that *marma* regions of the body are the vital regions having multi-dimensional effects due to their influence on *prana* and hence, on *tridsaha* and *triguna* which perhaps brings harmony between the systems of the body which results in normalizing the bloodpressure.

### Pathya (DO's)

#### Aahar

- Diet should be light, low fat diet & preferably vegetarian foods
- Include following diet
- Whole grains
- Fresh fruits, vegetables
- *Mudga, jav. Saindhava, Takra, Shunthi, Ardrak, Lashun. Dalchini* etc
- Fruits- *Amalaki, Manuka, Dadim*

**Vihar-** Daily exercise, Walking

**Yoga:** *Vajrasana, Pawanmuktasana* (Wind removing pose), *Shavasana*.

**Pranayama-** *Bhastrika, Kapalbhati, Anuloma-viloma*

### Apathya- (DON'Ts)

**AHARA-** Avoid non veg food, eggs,

Avoid oily, salty (Less than 2gms per day) and excessive spicy food, Avoid alcohol

## DISCUSSION

Overall review of literature shows that the life style plays an important role in the development of hypertension. Improper life style and unhealthy diet, lack of exercise and stressful life increases the chances of hypertension.

This review showed that the action of *Ayurvedic* drugs which are helpful for breaking down the *Samprapti* of hypertension. Because almost all drugs are anti-oxidant, hypertensive, cardio-tonic in action, hence it can be useful for controlling Blood pressure and reducing the

complication of hypertension. Also, shirodhara, Siravedhana, Basti karma and virechana have important role in reducing hypertension. Along with this inclusion of proper *Dincharya*, *Ritucharya*, *Ahar-Vihar*, *Pathya-Apathya*, *Yoga*, *Pranayama*, Meditation in daily life helps to reduce the chances of hypertension.

## CONCLUSION

These *Ayurvedic* treatment & regimen may be sufficient for treatment of Grade 1 hypertension. This may reduce the doses required for control of hypertension, & will also reduce the cardiovascular risk in all grades of hypertension. Though it is effective, this trial should be monitored for 1-3 months following diagnosis of Grade 1 hypertension.

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