

CONCEPT OF HYPERTENSION IN AYURVEDA AND ITS MANAGEMENT

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ABSTRACT

Hypertension is one of the major causes of disability and death all over the world. Hypertension without specific symptoms in its mild and moderate stages cannot be considered as a disease in *Ayurveda*. It appears to be an early stage of pathogenesis and a risk factor for the development of diseases affecting the heart, brain, kidneys eyes etc. Improper food habits and a modern sedentary lifestyle with or without genetic predisposition provoke and vitiate all the *Tridoshas* to trigger the pathogenesis of hypertension. It is proposed that hypertension is to be understood as the *Prasara-Avastha* which means the spread of vitiated *Doshas* from their specific sites. The *Avarana* (occlusion of normal functioning) of *Vata Dosh*a by *Pitta* and *Kapha* can be seen in the *Rasa-Rakta Dhathus*, which in turn hampers the functioning of the respective *Srotas* (micro-channels) of circulation, which can be treated with *Shamana*, *Shodhana* and stress-induced cases treated with *Medhya Rasayana*.

Keywords: *Prasara-Avastha, Avarana, Shamana, Shodhana, Medhya Rasayana*

INTRODUCTION

Ayurveda mainly focuses on preventive aspects rather than curative one, so if we follow the principles of *Ayurveda*, we can prevent many diseases. *Ayurveda* (the Veda of Ayu, can be described as a real science

of life. In *Ayurveda*, systemic arterial hypertension can be understood as *Rakatgatavata* based on the involvement of vitiated *doshas* where there is the involvement of *Vatapardhanatridosha*.

The Ayurvedic treatment of hypertension is, based on a balancing of *Doshas*, *Shamanaushada* and *Shodhanakriya* like- *Virechana*, *Basti*, *Shirodhara* and *Raktmokshana* are very effective in hypertension along with it proper dietary habits, proper exercise, yoga, meditation and certain ayurvedic medicines can be beneficial to reduce stress and maintain the blood pressure. Ayurveda concentrates on achieving the promotion of health, prevention and management of the disease for a healthy and happy life in the ailing society.

Hypertension is a major health problem throughout the world because of its high prevalence and its association with increased risk of cardiovascular disorders. Hypertension is a disease of the modern age. It is often referred to as a “Silent or Hidden Killer”. It remains asymptomatic until late in its course and ends up in organ damages having disastrous and menacing effects on human being and ultimately leads to death of the person.

Today hypertension is the commonest disease and 5th person is found hypertensive. According to the world health statistics report, in India 51% Men & 39.7% Women above 25 years of age suffer from hypertension. Every year, because of unwholesome diet and sedentary lifestyle there is increasing rate in the patients of high blood pressure. Hypertension is a major risk factor for stroke, MI, Vascular disease and CKD.

Definition:

1. Hypertension is defined as Systolic blood pressure (SBP) of 140mmhg (or) more and Diastolic blood pressure (DBP) of 90mmhg (or) more (or) taking antihypertensive medication.

2. High blood pressure is a trait as opposed to a specific disease and represents a quantitative rather than a qualitative derivation from the harm. It is the lateral pressure exerted by the blood on the vessel walls while flowing through it.

Aetiology:

- Hereditary
- Obesity
- Excessive alcohol Intake
- Excess salt intake Sleep apnea

- Secondary to disease (e.g., polycystic kidney disease or chronic glomerulo nephritis, adrenal disease,
- Cushing's syndrome and coarctation of aorta etc.)
- Certain medication (e.g., NSAIDS, steroids, throat lozenges and peptic ulcer medicines)

Factors affecting hypertension - Hypertension is elevated pressure of blood in arteries. The prevalence of hypertension depends on both the racial composition of the population studied and the criteria used to define the condition. The increase in blood pressure depends upon –

Age, Sex, Physical activities, Mental activities, Family history, Diet

Criteria for classification of blood pressure

- Normal- Systolic < 120 mmHg, Diastolic < 80 mmHg
- Prehypertension – Systolic 120-139mmHg, Diastolic 80-89mmHg
- Stage-1- Systolic 140-159mmHg, Diastolic 90-99mmHg
- Stage-2 - Systolic 160mmHg or more, Diastolic 100mmHg or more

Classification

1. Primary or essential hypertension
2. Secondary hypertension

Primary hypertension- It is also called Essential hypertension or idiopathic hypertension. There is no known cause, however many of the lifestyle factors contribute to this condition. About 90–95% of cases of hypertension are categorized as primary hypertension with no obvious underlying cause. This is found in most people who have crossed the middle age. It cannot be permanently cured, but it controlled with the proper drugs and measures. The measures include sharp reduction of obesity and reduction of dietary salt. Following factors are important in the etiology of essential hypertension-

- Hereditary factor
- Environmental factors- overcrowding, pollution, competition in job.
- Age and sex factor
- Alcohol and smoking
- Increase values serum cholesterol.

- Obesity
- Psycho-social factors- anxiety, tension.
- Dietary factor- more salt intake.

Secondary hypertension –When hypertension is caused by another condition or disease process, it is called secondary hypertension. This is also called malignant hypertension. Incidence of the Secondary hypertension is comparatively very low. This is very danger and need to remedy urgently. Fewer than 10% of patients have secondary hypertension. The possible causes of secondary hypertension may be such as-

1. Renal –
 - Acute nephritis
 - Interstitial nephritis and pyelonephritis
 - Polycystic kidneys
 - Renal artery stenosis
 - Diabetic nephropathy
2. Endocrine-
 - Pheochromocytoma
 - Thyrotoxicosis
 - Cushing’s syndrome
 - Myxedema
3. Exogenous – administration of steroids, non-steroidal, anti-inflammatory drugs
4. Neurological –
 - Raised intracranial tension.
 - lead encephalopathy
5. Pregnancy induced hypertension- Toxemias of pregnancy like preeclampsia, eclampsia
6. Cardiovascular hypertension –
 - Co-arctation of aorta
 - Aortic regurgitation
 - Atherosclerosis
7. Drugs –
 - Glucocorticoids
 - Cocaine
 - OCP etc
8. Miscellaneous –
 - Polycythemia
 - Obstructive sleep apnea
 - Hypocalcaemia

Symptoms –The clinical feature may be due to –

1. Elevated blood pressure itself

2. Target organ involvement
3. Underlying disease as in secondary hypertension

1. Due to hypertension
 - Headache
 - Dizziness
 - Epistaxis
2. Due to the affection of target organs -
 - I. CVS –Dyspnoea, Angina, chest pain, Palpitation
 - II. Kidneys – Hematuria, Nocturnal, Polyuria
 - III. CNS -Transient ischemic attacks with focal neurological deficit
 - Hypertensive encephalopathy
 - Dizziness, tinnitus, and syncope
 - IV. Retina – Blurred vision or sudden blindness

Concept of Hypertension in Ayurveda Samhitas

The purpose of Ayurveda is to maintain health and to treat diseases, in order to achieve the four *Purushartha* and thereby the ultimate goal of distraction from the worldly things.

There is no direct reference to Hypertension in Ayurveda classics by name as well as by its pathophysiological views. Many conceptual and clinical works have been carried out on Hypertension to evaluate the perfect diagnosis and mode of treatment on the basis of Ayurveda principles. Various Ayurveda Scholars have coined different nomenclatures like *Uccharak-tachapa*, *Raktagata Vata*, *Raktavrita Vata*, *Pra-naavruta Vyana*, *Vyanavrita Prana*, *Shleshmavrita Vyana* etc.

We get the detailed explanation of Hypertension in the contemporary sciences whereas in Ayurveda though the condition is mentioned in various contexts, it is difficult in identifying the condition with a known disease entity.

Many conceptual studies have been done to correlate hypertension in Ayurveda. Certain scholars have attempted to correlate hypertension with *Dhamani Prapurnata*, *Dhamini Pratichaya*, *Dhamani Upalepa*, *Raktagata Vata*, *Siragata Vata*, *VyanabalaVaishamy*, *Rudhira Mada*, *Uccha Rakta Chapa Avruta Vata Roga*, *Shonita Dusti* etc.^[1]

Ayurveda acharya Yadunandan Upadhyaya compared Hypertension with *Raktagata Vata*. The disease *Raktagatavata* is mentioned under the category of

Vata vyadhi. It is considered *Tridoshajavyadhi*. Some other acharyas compared hypertension with *Vyana Bala Vikriti*. Attempt has also been made to compare the terms like *Dhamani pratichaya* and *Dhamani katinya* with Atherosclerosis and Arteriosclerosis which are the known pathological associates of hypertension.

All these concepts concluded that hypertension is a result of *Rakta dushti* with Tridosha involvement in which *Vata* is prominent. *Rasa* and *Rakta dhatu* are main *Dushya* and *Mana* also involved in pathology of this disease, as it is a psychosomatic disease. Blood Pressure is the combination of many physiological activities. Detailed description of physiology of blood pressure is not found in *Ayurveda* literature. But Acharyas has described the circulation of *Rasa Rakta* throughout body with the help of *vyanavayu*.^[2]

Concept of blood pressure regulation in ayurveda: Hridaya:

There are references about *Hridaya*, its shape, seat and functions in our classics. *Hridaya* is similar to *pundarika (kamala)* which is *adhomukha* or *kumbhikaphala*.^[3] It lies in *Urah Pradesha*.

According to *Sushruta*, formation of *Hridaya* of a foetus occurs by the *Sara* of *Kapha* and *Asruk*.^[4] Therefore both *Kapha* & *Asruk* should be in its normal state to maintain the normal function of heart. *Kapha* in its normal state believed as *Bala*.^[5]

It is the seat of *Chetana*,^[6] therefore the energy of it itself originating. *Acharya charaka* has told that *Dashadhamani*, *Prana*, *Apana*, *Mana*, *Buddhi* and *Chetana* are attached to the *Hridaya*.^[7] *Hridaya* is the origin of *Rasavahasrotas* and *Pranavahasrotas*^[8] and the main seat of the *Rasa* also; hence, it is the root for all the physiological activity of the body.

Physiology of the heart can be explained by its *Vyutpatti* -

The three *Dhatus Hri, Da and Ya* combines to form the word *Hridaya* that shows the three main functions of heart viz. *Aharana* (receives) *Dana* (gives) and *Ayana* (movement). (*Shatapatha* Br. 14/8/4/1.)

Aharana - Receiving *Rakta* from all over the body.

Dana - Expulsion of *Rakta* from the *Hridaya* to all body tissues.

Ayana (*Gati*) - Related with the contraction & relaxation of the heart.

Factors regulating normal blood pressure.

Prana vayu: *Pranavayu* is situated in *Murdha*^[9] and performs the functions like *hridaya dharana*, *buddhi*, *chitta*, *indriya dharana*.^[10] From the location and the above said functions elicits that *prana vayu* is responsible for higher brain functions. Here *hridaya dharana* could be viewed as neural stimulation of vasomotor centre in the medulla oblongata that controls the functions of the heart. Hence it is clear that *hridaya dharana* function specifies influence of *Prana vayu* and the *Doshas* located in *Hridaya* like-*Vyana vayu*, *Sadhaka pitta* on heart functions.

Vyana vayu: *Vyana vata* is situated in *Hridaya* and it travels all over the body.^[11] Its functions are *Gati* (movements), *Prasarna* (extension), *Akunchana* (flexion), *Rasasamavahna*, *Sveda-Asriksravana*, *Dhatu tarpana*.^[12] *Nyaya chandrika* commentary explains *Rasadisamvahana* is *rasa- Raktasamvahana*. *Prasarana*, *Akunchana* could be viewed with respect to contraction and relaxation of heart as well as vessels. *Gati* may be assumed as the force of blood flow. So, it is clearly evident that *Vyana vayu* in a normal status performs contraction and relaxation of the heart and propels the blood from the heart to the body tissues and maintains the normal blood pressure.

Sadhaka pitta: *Sadhaka pitta* is situated in *Hridaya*. One can achieve *Manoarth* produced by *Hridaya*, only because of *Sadhaka Pitta*; hence, it has been named as *Sadhaka*.^[13] It helps to keep away *Kapha* and *Tama*, which hampers *Chetana* to do its normal functions and makes *manas* free from the covering of *Tama*. *Mana* becomes more efficient, in turn, enhances *Budhi*, *Medha*, *Abhimana* etc.^[14] eventually helps "Atma" to achieve its goal. Thus, it is clear that *Sadhaka Pitta* performs higher functions of brain. For the maintenance of good health, it plays an important part by influencing *Manas*.

Avalambakakapha: Heart has been described as the seat of *Avalambaka Kapha*^[15] and does *Avalambana* of *Hridaya* with *Ahara Rasa* and *Rasadhatu* together with its own potency. It supports the *Trik sthana* (the region where neck and shoulder joints are located).

Manas and ojas: Ojas is chief among the seat of life.^[16] Hridaya is the seat of para ojas. From Hridaya, ojas circulates all over the body.^[17]

Manas is considered as the controller of all psychological states as well as Indriyas. In Charaka Samhita it is quoted that Dukha of Manas as one of the causes for diseases of Hridaya, Dhamani and Ojas, hence it should be prevented.^[18] Chinta, Shoka, Krodha, Harsha, Lobha, Bhaya and Moha are some factors which cause vitiation of Dosha and Manas these vitiated Dosha reach Hridaya and cause Manova-hasrotovikara.^[19] So there is a relation between Manas, Hridaya and Ojas. Many pathological conditions of Hridaya lead to the vitiation of their Asraya (Prana vata, Vyana vata and Ojas) and vice versa. Thus, it is clear that vitiated Mana will cause vitiation of Vata, also the vice versa producing pathologies like that of impairing the normal blood pressure.

Hypertension related diseases in ayurveda

In Ayurveda hypertension is considered based on the Doshadushyavivechana. Various luminaries have given their opinion to coin a name of Disease and to understand it in better way, some of them are Dhamani pratichaya, Raktagatavata, Siragatavata, Pittavrittavata, Raktavrittavata, Pittavrittaudana, Pran avrittaudana, VyanabalaVaishamy

Nidana-Samprapti

Most of the mechanisms associated with secondary hypertension are crystal clear and completely understood. However, those associated with essential hypertension are far less understood.

The pathogenesis of hypertension takes place at both physical and psychic level one at a time or simultaneously depending upon the Dosha Dooshyasamoorchana. Agnidushti results in Ama formation and subsequent Dhatu dushti (Rasa and Rakta) This leads to Kha-vaigunya i.e., obstructive pathology in channels. The Ama production results in Shrotovarodha (obstruction) and thus partially blocks the normal Rasa Rakta circulation which further vitiates Vyanavayu. This obstructed Vyanavayu leads to forcible blood flow in the blood vessels causing increased resistance, hereby increasing blood pressure.

Samprapti

Tridoshaprakopaknidansevana-- Manah Kshobha-- Vriddhi of Kapha and Meda-- Sihanamsamshraya in dhamani— Margavrodha-- Vyana vayuprakopa (Vataprakopa)--Rakta dushti due to Vyanvayu-- Miyhyagati of Rakta- Samvahana--Raktagatavata (Uccharakatchap)

Sampraptighataka

- Dosha- Vatapardhanatridosha
- Doosha - Rakta, Meda
- Shrotas- Raktvaha, Rasavaha, Manovaha
- Adhithana- Dhamani
- Shrotodushtiprakara- Atipravritti, Sanga, Vimargagamana
- Udbhavasthana- Amashaya
- Swaroota- Chirkari
- Sadhyaashyadya- Krichrasadhya

Dhamani Pratichaya- According to Charaka, Dhamani Pratichaya is a KaphajaNanatmajaVyadhi.^[20]

Acharya Chakrapanidatta has explained Dhamani pratichaya as Dhamani Upalepa

Raktagatavata- Raktagatavata is one of the Vatavyadhi. Acharya Charaka has mentioned the Lakshanas like Teevraruja, Santapa, Vaivarnya, Krishatha, Aruchi, Bhuktasyastambha.^[21] Almost all the symptoms which are mentioned by Charaka are similar to Vagbhata but he has mentioned Raga and Bhrama.^[22] Vagbhata has considered Bhrama as one of the main symptom and it is one of the main symptoms of hypertension.

Siragatavata

Siragatavata comes under Vatavyadhi, when there will be Vataprakopa in sira. The Lakshanas of Siragatavata are Manda Ruja, Shopha, Kampa and Spandana due to Shosha.^[23] According to Sushruta the Lakshanas are Shula, Sira Akunchana and Purana.^[24]

Pittavrutavata

Pittavrutavata comes under Vata vyadhi, when there will be Pittavrutavata it shows clinical manifestation such as Daha, Trishna, Shola, Bhrama and Tama.^[25] These are the symptoms which is present in Hypertension.

Raktavrutavata

When *Vata* gets obstructed by *Rakta*, it causes burning pain between *Twak*, *Mamsa* and *Swayathu* with *Raga* and *Mandala*.^[26]

Pittavrittaudana

The *Pittavrittaudana laxanas* are *Murcha*, *Daha*, *Shola*, *Daha* in *Nabhi* and *Uru Pradesha*, *Ojo bramsha*^[27] are resemblance with the symptoms of hypertension.

Pranaavrutaudana

When *Pranavayu* is overlapped by *Udanavayu*, it causes *Shiro Graha*, *Pratishyaya*, *Nishwasa*, *Uch-wasasamgraha* (obstruction to inspiration and expiration) *Hridroga* and *Mukhashosha*.^[28]

VyanabalaVaishamy^[29]

Central Council of Research in *Ayurveda* and *Siddha* has given the name for essential hypertension is *Vyanabala Vaishamy*. They had explained the *Nidana*, *Purvaroop*, *Samprapti* and *Chikitsa* for the same as follows.

Vata is a unique *Dosa*, which regulates and is responsible for the movement of other *Dosa*. It can be vitiated by 1) *Dhatu kshaya* and 2) *Avarana*.

The disease *VyanabalaVaishamy* seems to be resulted from *Vaishamy* of *Vyana vata*. The *Rasa Rakta Dhatu*, through which the body gets its nutrition, circulates throughout the body with the help of *Vyana vata* through twenty-four *Dhamani*, any derangement in the *Vyana vata* causes alteration in the circulation of *Raktadhatu*. *Vaishamy* refers to *Vikriti*, in which they are able to produce the disease. *Vaishamy* means *Vridhhi* or *Hrasa*. Therefore, *VyanabalaVaishamy* may either be considered as an increased function or decreased function of *Vyana vata*. *Acharya Charaka* mentioned that the decreased *Dosha* is not able to manifest even its own symptoms. Hence, hyper functioning of *Vyana vata* is considered under *VyanabalaVaishamy*, which produces increased force in the wall of the blood vessels to produce hypertension.

Complications of hypertension

1. CNS - Uncontrolled high blood pressure may affect the ability of the person to think, remember and learn. Problems with memory or understanding concepts are more common in people with

uncontrolled high blood pressure, Transient ischaemic attack, Cerebrovascular accidents, Subarachnoid hemorrhage, and Hypertensive encephalopathy.

2. Ophthalmic– hypertensive retinopathy Hypertension damages the very small blood vessels in the retina of eyes and can lead to vision loss.
3. Cardiovascular –High blood pressure can cause hardening and thickening of arteries (atherosclerosis), which can lead to the heart attack, stroke or other cardio-vascular complications, coronary artery disease, left ventricular failure, Aortic aneurism- High blood pressure can be cause of weaken and bulging the blood vessels, forming an aneurysm, Aortic dissection, Cardiac muscle thickens because of the pumping of blood against the higher pressure in blood vessels. The thickened muscle may have a hard time pumping enough blood to the body's needs, which can lead to heart failure.
4. Renal – Proteinuria, Progressive renal failure

DISCUSSION

Improper lifestyle and food habits, psychological stress factors etc., with or without genetic predisposition provokes and vitiates all the *Tridoshas* to trigger the pathogenesis of hypertension.

Anya Dosha Avarana and *Anyonya Avarana* are the mechanisms of pathogenesis.

With the help of recent advancements in medical science, the diagnosis Hypertension made possible at an early stage and thus effective management can be offered at this stage itself to avoid risk of damage to vital organs. Thus, hypertension can be understood as a psycho-somatic hemodynamic condition where *Vata Pradhana Tridoshas* are vitiated affecting the *Rasa-Rakta Dhatus* as *Dooshyas* with both *Sarva Shareera & Manas* as its *Adhithana*.

Management by ayurvedic approach

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 *Vyanavayu*

1. **Nidana parivarjana** Avoidance of causative factors or Avoidance of etiological factors of a disease is known as *Nidanaparivarjana*.

The following causative factors of hypertension should be strictly avoided.

- 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
 - Lifestyle 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
2. **Shamanoushadhis**
 3. **Yoga, pranayama and meditation**
 4. **Apathya**
 - Avoid meat, eggs, salt, pickles, tea and coffee.
 - Regular exercise at least 30 minutes daily
 - Avoid alcohol and smoking.
 - Intake of dietary saturated fat and cholesterol

CONCLUSION

The disease Hypertension is the abnormality of *Rakta Dhatu* popularly known as *Shonita Dushti*.

In the condition of *Avarana*, first the *Avaraka* should be treated followed by *Avruta Dosha*. So, the treatment modalities follow this rule also i.e; by *Virechana Karma Pitta, Rakta, Kapha Dosha* will be eliminated followed by *Basti* for *Avruta dosha (Vata)*. So, these treatment modalities help in prevention of Hypertension if they are followed according to *Ritucharya* and even help prevention of further prog-

nosis of Hypertension. The adopted treatment modalities are acting on the moola itself so these can offer more reliable results. Hypertension is mainly a *Tridoshajavyadhi* having the dominancy of *Vata Dosha, Rasa, Rakta* and *Manas* are the chief *Dushyas* of the disease. It is primarily a disease of *Raktava-hasrotas*. The disease Hypertension mostly correlates with the *Raktashritavikaras*. Estimating the danger posed by constant hypertension over time on vital organs like brain, heart & kidney it has become a must now to protect the arteries by leading a healthy and active life within the premises drawn by *Dinacharya & Ritucharya* in *Ayurveda*. *Yoga* and *Vyayama* has become a part of our day-to-day life, *Ayurveda* also offers medication to counterattack hypertension and stabilize the body by flushing out the oxidants & modulating body's immune system. Along with combating high blood pressure situations these medications can also protect and regenerate cells of the vital organs against constant arterial pressure.

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