Hypertension in light of Ayurveda - A Review Article

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ABSTRACT

Hypertension is most prevalent lifestyle disease in the world today, hypertension poses a challenge to the medical community because it is incurable yet manageable with continuous medication. India is known as the hypertension capital of the world. Due to its chronic nature and associated elevated risk of cardiovascular illnesses, hypertension presents an important issue for the public. It can be said that hypertension is a silent killer because many of its patients go undetected for a long time or are only discovered by accident. A better understanding of the applied physiology and etiopathogenesis of hypertension in the light of Ayurvedic principles is being attempted to fill this gap. In the mild and moderate levels, hypertension cannot be classified as a disease in Ayurveda if there are no specific symptoms. It seems to be an early stage of pathogenesis and a risk factor for the onset of conditions affecting the kidneys, eyes, heart, brain, and other organs. Although essential hypertension is not directly mentioned in Ayurvedic scriptures, disease can be explained using Ayurvedic principles. The cause of hypertension is Raktadushti, which also involves the Tridosha, with a strong vata and pittadosha influence. Here, a real attempt is undertaken to determine the Ayurvedic etiopathogenesis of essential hypertension. The present article is an attempt to throw some light on clinical understanding of Essential Hypertension (EHT) in terms of Ayurveda based clinical symptomatology of the patient along with insight on pathology as per Ayurveda.

Key words: Essential Hypertension, Ayurveda, Raktadushti, Tridosha.

INTRODUCTION

The 21st century has been called the stress-and anxiety-filled era. Individuals are too busy to reflect on themselves, thus they are growing more stressed and strained and less concerned about their well-being. Therefore, a number of medical and mental problems, including hypertension, are brought on by these anomalies in health and mental stress. India is known as the world's center for hypertension. Because it is a chronic illness that increases the risk of cardiovascular illnesses, hypertension poses a significant public health concern due to its high prevalence. A 2008 World Health Organization survey states that over 40% of those over 25 have hypertension.¹ In India, hypertension is directly to blame for 24% of deaths from coronary heart disease (CHD) and 57% of deaths from stroke.² It is the strongest risk factor for conditions affecting the heart, brain, kidneys, and peripheral arteries, which can be fatal if left untreated.³ Because the majority of patients (85%) have no symptoms, hypertension is a silent killer.⁴ The precise underlying causes of 95% of cases of hypertension remain unknown,⁵ while environmental and genetic variables are thought to be responsible.⁶ The disease known as hypertension, or high or rising blood pressure, is characterized by a persistently elevated pressure in the blood arteries. Clinically, hypertension is defined as a diastolic pressure that is higher than 90 mmHg and a systolic pressure that is...
maintained at 150 mmHg or higher. Both primary (critical) and secondary hypertension are recognized subtypes. Primary or essential hypertension, which describes blood pressure for which no scientific explanation can be found, is the term applied to 90 - 95% of cases. The remaining 5 - 10% of cases referred to as secondary hypertension, are caused by various illnesses affecting the kidneys, heart, arteries, or endocrine system. Hypertension has been described in detail in modern medical science with its etiology, pathogenesis, signs, symptoms and treatment. There may be no such clearcut description of hypertension seen in our classics however Acharya Charaka said that each disorder is not to be named each time

विकारनामाकुशलो न जिज्ञायत कदाचार|न हि सर्वविकारणां
नामोःस्तिसिंहु स्वच्छत:|]
स एव कुपितो दोषः समुत्तमविशेषतः| स्थानान्तरतत्त्वेत्र
जनयत्यामयायाम हौन।]]
तत्साधिकारकृत्तीरिधियान्तराणि च| समुत्तमविशेषांबा
बुद्धवा कर्म समाचरेतल।| (Ch.Su 18/44-46)

Disease and its symptoms alter periodically because of the way that man, his surroundings, his meals, and his ailments have all been evolving. As a result, certain diseases go away and others develop. Acharya Charaka stated that as the appearance of a disease varies according to its etiology, a Vaidya should not feel guilty if he is unable to cure the disease, especially if it is something new. He told his followers that the basic ideas of Ayurveda could be used to explain any illness. After the Sphygmomanometer was discovered, hypertension was officially recognized, but its existence was first noted in the list of symptoms. Thus by understanding the Dosha state, site of appearance and its signs and symptoms, here is the conceptual study to understand etiopathogenesis of essential hypertension in terms of Ayurveda principle of Vikalpa i.e., combinations and permutations of Doshas.

AIM AND OBJECTIVES

To find out the factors involved in hypertension as per Ayurvedic perspective and to explain hypertension in terms of Ayurveda. Also find out etiopathogenesis of essential hypertension in terms of Ayurveda. This research paper is a sincere effort to understand hypertension in terms of Ayurveda, which will be beneficial for treatment as well as preventive purpose.

MATERIALS AND METHODS

Classic Ayurveda literature, contemporary literature, available research updates, and scientific information available on the internet, among other sources, were searched and evaluated to explore signs and symptoms similar to hypertension from an Ayurveda perspective.

LITERATURE REVIEW

Nomenclature

In this modern era there are several references available for the disease hypertension with worldwide acceptance but in Ayurveda experts have suggested different names to demonstrate the phenomenon like Raktagata Vata, Siragata Vata, Avrita Vata, Dhamani Prapurana, Rakta Vikshepa, Vyana Prakopa, Raktamada, Uchcharakotchapa, Vyana Atibala etc. According to Acharya Charaka, sometimes it is neither possible nor it is necessary to identify a disease by a name. An Ayurvedic physician should attempt to construct the Samprapti of a given clinical condition based on the signs-symptoms and investigative findings in each case and should plan the management accordingly. The disease hypertension is abnormality of Rakta Dhatu popularly known as Shonita Dushti because Lakshanas are similar to that of hypertension are - Shiroruk, Klama, Anidra, Bhrama, Buddh Sammoha, Kampa which akin to the manifestation of hypertension. Mada, Murcha, Sanyasa equally true in relation to malignant hypertension (Charaka Samhita, Sutrasthana 24/11-17)

Concept of Blood Pressure in Ayurveda

There isn’t a thorough explanation of the heart in Ayurvedic texts. The ancient Acharyas have provided a simple definition of the passage of Rasa Rakta through
the body with the help of Vyanavayu. Raktadhatu is Drava (liquid) Dhatu. It therefore naturally has the ability to flow. In order to keep the flow of blood up to the end tissue, more force (Nodana, Abhignhata, Dhamana, Sarana) is needed in addition to its inherent flowing characteristic, which is supplied by the heart’s contractions and relaxations as well as the artery’s pulsations. The specific force generated by blood circulation is referred to as blood pressure.

Three Doshas in Ayurveda, Vata, Pitta, and Kapha; seven Dhatus (Rasa, Rakta, etc.); and Malas (Mutra, Purisha, etc.) are said to be the fundamental causes of all bodily activities. So, to understand the blood pressure in terms of Ayurveda, consideration of Srotasa by which it travels, Hridaya, Oja and functions of Mana are necessary. The circulatory system indicates Rasa Rakta Samvahana is multidirectional, and its dynamics change depending on the bodily part and Saptadhatu’s requirements. Rasadhatu, which is a product of digestion and is extremely micro in nature, circulates throughout the body in three directions as a result of Acharya Sushruta’s attempt to develop the idea of circulation based on direction.

Circulation takes place from Hridaya in 3 directional ways which are Shabda (Tirvyagamitva), Archi (Urdhwagamitwa), Jala (Adhogamitwa) Santanavat.[9] Which are mainly related to intensity of kinetic force (cardiac output). The subject of these Gati (directional ways) is Vatadosha. Blood pressure might become high or low if there is any variation in the direction and kinetic force of Vatadosha. These circumstances could be changed by obstruction of their natural directions and kinetics leading to hypertension.

Hridaya

It is believed that Hridaya is the source of Rasavaha and Raktavaha Srotasa, which contracts and relaxes and makes sure Rasa-Rakta circulates with the aid of Vyana Vayu.[10] Since Hridaya is a seat of Prana as well, its self-originating power, or Chetana, is carried out by Vyanavayu at some point in the body and provides the arteries with the ability to pulse. The heart’s Vyutpatti provides an explanation of its physiology. The three letters Hri, Da, and Ya which together make up the phrase Hridaya represent three fundamental characteristics: Aharana (gets), Dana (gives), and Ayana (moving).[11]

Aharana: The body’s Rasa-Rakta is transported to the right atrium by the superior and inferior vena cava.

Dana: Through the Arch of Aorta and its branches, Rasa-Rakta is expelled from the left ventricle and into the body.

Ayana/Gati: both Aharana and Dana use the heart’s continuous contraction-relaxation mechanism.

Blood pressure is directly affected when pathology in the Rasadhatu or Hridaya arises because it affects the Rasa-Vikshepana Kriya (circulation of the Rasa-Rakta Dhatu) at the whole body level. Further, Atichinta is stated as the direct cause of Rasavaha Srotodushhti in Ayurvedic scriptures.[12] The Vishaya of Mana is Chintya. One could refer to Atichinta as a vitiated mental condition. Since Rasavaha Srotas and Mana are derived from Hridaya.

The previously mentioned factors impair Hridaya’s Rasa-Samvahana function. Oja maintains the heart and the channel that connects to it healthy by avoiding things that could make you unpleasant (worries). Stable condition Mana plays an important role in the regulation of blood pressure. Dhamanis because they pulsate, as Srotamsi because they permit oozing and Siras because they maintain a continuous flow of blood (Rasa - Rakta).[13] The Dhamanis are stated to have their origin in the heart and end in the Srotamsi (capillaries) which in turn unite to form Siras (veins). As a result, Hridaya, Dhamanis, Srotamsi, and Siras form a single circulatory unit that controls the body’s appropriate blood flow and nutrient delivery. Spandana of Hridaya is controlled by Mastishkagata Pranavayu and Avalambakakapha.

Vyanavayu

Location: Hridaya, Entire body

Features: Gati (movements), Prasarna (extension), Akunchana (flexion), Unmesha-Nimesha (blinking).[14]

Rasasamavahna, Sveda-Asrik, Sravana, Dhatu Tarpana[15]
Here, phrase *Gati* can be taken as the motion of the heart, which is concerned inside the context of blood pressure. The contraction and dilatation of the vessels also governed by way of Vyanavayu via *Hridaya*. So, it shows the involvement of Vyanavayu on the regulation of blood pressure.

**Sadhaka Pitta**

**Location: Hridaya**

**Features:** Responsible for *Buddhi*, *Medha*, *Utsaha*, *Abhimana*. *Shourya, Bhaya, Krodha, Harsha, Moha* Sadhaka Pitta allows to preserve away *Kapha* and *Tama*, which hampers *Chetana* to do its ordinary capabilities and makes *Mana* free from such *Avarana* of *Tama*. So, *Mana* becomes efficient, in turn and enhances *Buddhi, Medha, Abhimana*, and so on., sooner or later helps *Aatma* to achieve its goal. It is difficult to give an explanation for *Sadhaka Pitta* in phrases of present-day physiology, but features of adrenaline do possess a few similarities in addition to that of *Sadhaka Pitta*. In cases of fear, anger, and such different emotions, the adrenal gland is stimulated and increases the secretion of adrenaline. Functions like fear, gallantry etc. of *Sadhaka Pitta* referred by *Acharya Chakrapani*, may be correlated with that of adrenaline. Worry, fear, anger, happiness etc. affects heart rate and cardiac output. Which in turn impacts blood pressure. Hence, *Sadhaka Pitta* may be taken into consideration as an essential factor in the regular physiology of blood pressure.

**Avalambaka Kapha**

**Location: Uraha Pradesha (with Hridaya)**

The contribution of *Avalambaka kapha* is to make *Avalambana of Hridaya* with *Ahara Rasa* and *Rasa Dhatu* together, with its personal efficiency. The regular rhythmicity, conductivity, excitability, contractility, tone, and refractory duration of cardiac muscle tissue can be correlated with *Avalambana Karma* of *Hridaya* by using *Avalambaka Kapha*. Therefore, it keeps the heart in healthy state and ceases to complement its operating capacity of non-stop pumping motion. Consequently, it is able to be stated that *Avalambaka Kapha* has a few positions on regulation of Blood pressure.

**Impact of Oja on blood pressure**

*Hridaya* is the main site of *Oja*, from wherein it is circulated in all around the body[22] and as mentioned earlier, *Oja* remains as *Bala* of *Hridaya* to make use of *Rasa-Rakta Samhanana*. In the pathogenesis of hypertension, heart is the foremost affected organ. So, on the premise of *Ashraya-Ashrayibhava: Oja* gets affected in hypertension. Furthermore, symptoms of *Oja-Kshaya* and *Vyapad* defined in Ayurvedic texts like *Shrama, Moha, Murcha* etc., are also observed in HTN. This indicates role of *Oja* on the regulation of blood pressure and its pathogenesis.

**Rasadhatu**

The *Niruki* of *Rasadhatus* itself shows its property of continuously flowing. Though, *Rasadhatu* is circulated at some stage in the whole body, its primary site is thought to be *Hridaya*. For this reason, *Vikshepana* and *Aakshepan Karma* (i.e., contraction and relaxation) of the *Hridaya* also affects the circulation of *Rasa Dhatu*. In Ayurvedic texts, over much worrying has been mentioned as direct cause of *Rasavaha Srotodushti*. As *Hridaya* is root of *Rasavaha Srotasas* that influences *Hridaya* also and hampers its *Rasa-Samvahana* functions. Thus, fluctuation within the blood takes place, which causes HTN.

**Raktdhatu**

Primary characteristic of *Rakta* is *Jeevan*. So, it’s been cited as a *Jiva* (life). While *Rasa-Rakta* continues to be of their normalcy, the depending organs i.e., *Sira*, *Dhamani*, *Hridaya* and so on, stay normal and perform their functions normally. Any abnormality of *Rasa-Rakta Dhatu* impacts the normal circulation of *Rasa-Rakta*, which ultimately results in the abnormality of blood pressure by making additional pressure or less pressure on the *Vahinies* (arteries). Consequently, it can be believed that *Rasa-Rakta Dhatu* are also accountable for maintaining normal blood pressure.

**Impact of Manasika Bhava on hypertension**

Hypertension also taken into consideration as a psychosomatic sickness. The *Manasa Bhavas* plays a critical role in causing of high blood pressure. In
Ayurveda, Prajnaparadha and Asatmyaindriyartha Sanyoga are considered as root causes for every disorder, which indicate involvement of psyche. The two Mano Doshas like Raja and Tama are concerned in high blood pressure. Raja is considered Pravarttaka and Tama as Avartaka, when they get vitiated they induces signs and symptoms like Bhrama, Tandra, Tamodarshana etc. Those signs are typically determined within the patients of EHT. In modern science additionally stress, anxiety, worrying, anger, fear etc. are said as the favourable factors for HTN.

Chinta, Bhaya, Shoka and Krodha; these factors can be included in stress. Each and every factor has the property to vitiate different Doshas.

- Chinta : Vata Prakopa
- Shoka : Vata Prakopa
- Bhaya : Vata Prakopa
- Krodha : Pitta Prakopa

By means of above descriptions it can be concluded that specially Hridaya and its depending components i.e., Prana & Vyanavayu, Sadhaka Pitta, Avalambakakapha, Oja, Rasa-Rakta Dhatus and regular function of Mana collectively assist to hold the physiology of the blood pressure.

Nidan Panchaka

Nidan (Aetiology)

As mentioned earlier essential hypertension is the name given to the type where in no specific cause may be found. The precise aetiology of the increase in Blood pressure isn’t always yet clear. Although, strongly cautioned predisposing factors can be classified as:

1. Genetic factors
2. Environmental factors
3. Psychological factors

1. Genetic factors

The role of heredity in the aetiology of essential hypertension has long been suspected. The evidence in support are the familial aggregation, occurrence of hypertension in twins, epidemiologic data, experimental animal studies and identification of hypertension susceptibility gene (angiotensinogen gene). This genetic factor of the development of high BP might not itself always cause hypertension. Instead, there can be a genetic predisposition to develop raised pressure in reaction to various environmental factors.[30]

Sthaulya and Prameha have been clearly mentioned as having Beeja Dosha as etiological factor by Acharya Charaka.[31] These two Santarpanottha Vyadhis are very much prone to hypertension. In Raktapradosha Vikaras, Viruddha Ahara is one of the etiological factors having individual etiological measure in the manifestation of Santana Dosha[32] and it also can coincide with genetic predisposition (Beeja Dosha).

2. Environmental factors

Numerous environmental factors, including as age, race, sexual activity, salt intake, obesity, occupation, alcohol consumption, etc., can have an impact on the development of EHT. Currently, it is thought that a variety of variables contribute to essential hypertension. Here are a few of these:

a) Age

The earlier in life that hypertension is diagnosed and untreated, the shorter the life expectancy. Usually, it happens between the ages of 35 and 60. The age-related rate of rise in blood pressure is constantly high for systolic than diastolic.

Systolic tends to rise till 70 to 80 years, whereas diastolic has a tendency to stay constant or decline after 40 years of age, as an outcome, the risk of isolated systolic hypertension increases regularly with advancing age and is a common type of hypertension in elderly.[33]

Vata Dosha increases in old age.[34] Physiological aggravation of Vata with its Ruksha, Khara, Daruna, Sheeta Guna etc.[35] are the reasons for Sankocha and Kathinya of the blood vessels. Also, Chala Guna of Vyana Vayu (in old age) causes forcible Rasa-Rakta Samvahana which leads to forcible cardiac output and ultimately results in increase in blood pressure. Thus, causes increase in blood pressure.[36]
b) Family\textsuperscript{[27]}

According to studies, the probability of hypertension in a relative's family is three to eight times higher in families with a history of hypertensive patients than in the general population.

c) Race\textsuperscript{[38]}

Some racial groups - such as the Chinese, Eskimos, and Negros in Africa - seem to be comparatively insensitive to hypertension, whereas others have a high frequency of it. The difference could not be racial in nature, but rather the result of lifestyle, nutrition, and environment. The environment is most likely a more significant factor.

d) Salt Consumption\textsuperscript{[39]}

A diet high in salt (sodium) is a major contributor to elevated blood pressure. The highest incidence of high blood pressure is found in those who consume more salt in their diet. For example, Japanese people who consume more salt (sodium glutamate in soy sauce) are more likely to suffer hypertension. Furthermore, blood pressure often decreases with a decrease in salt intake.

In Charaka Samhita, immoderate use of Lavana is defined as the root cause of Shonitaja Roga\textsuperscript{[40]} and this ultimately results inside the blood volume lead Rakta is also vitiated.\textsuperscript{[41]} Furthermore, Acharya Charaka has mentioned that Lavana should be consumed in limited quantity.\textsuperscript{[42]} If taken in excessive amount it causes fatigue lassitude and weakness\textsuperscript{[43]}, which are the symptoms, usually found in essential hypertension. Vagbhata has described that Atilavana intake leads to increase in Abhiphanchi, Sukshma, Ushna and Vyavayi Gunas in body which results in Pitta and Shonita vitiation along with increase in quantity of Rakta.\textsuperscript{[44]} Lavana Rasa formed with jala and Agni Mahabhoota and one of function described as Kledana which can be compared with retention of sodium ions in tissue and increased quantity of Rakta. Salts more than 10gm/day leads to renal retention of salt and water which in turns increase the quantity of plasma and extra vascular fluid volume which keeps the circulatory volume higher than it should be excreting excess fluid pressure on walls of blood vessels walls. Walls react to this stress by thickening and narrowing, leaving less space for fluid raising resistance and requiring higher pressure to move blood to the organs. Heart has to pump against high pressure system that leads to high blood pressure.

e) Habit

High blood pressure can also be caused by drinking alcohol and smoking cigarettes. Excessive alcohol use (more than six units per day) has been shown in studies to cause patients' blood pressure to increase. Both nicotine and carbon monoxide, which are released when tobacco is burned, are potent vasoconstrictors. In addition, nicotine increases catecholamine production, which is indicative of elevated blood stress.\textsuperscript{[45]} Usana, Tikshna, Sukshma, Vishada, Ruksha, Ashukari, Vyavayi, Vikasi are ten qualities of Madhya which are exactly opposite to the qualities of Oja.\textsuperscript{[46]} Ushana, Tikshna Guna provoke Pitta Dosha and Shonita Dush. Laghu Guna of Madhya aggravate Vata Dosha. Ultimately Oja Kshaya occur and Hridaya gets involved being the seat of Oja. Hridayashirita Vyanavayu, Sadhaka Pitta, Avalambaka Kapha are also get affected. Avalambak Kapha weakens the function of Upachaya of Hridaya Mamsapeshi, resulting weak pumping action of heart which results in increase end diastolic volume. Also vitiates the Vyana Vayu Vriddhi resulting aggravated contractility of heart to compensate the extra volume which ultimately leads into increased arterial blood pressure.

f) Vegetarian diet

Across all age groups, vegetarians have lower blood pressure than non-vegetarians, while the reason for this difference is unknown. This has given rise to the theory that a diet heavy in animal fats may cause hypertension in and of itself. Another possibility is that the high fiber content of a vegetarian diet controls weight, acting as a buffer against high blood pressure.\textsuperscript{[47]} It has been stated that Mamsa is the reason of Shonitaja-Roga.\textsuperscript{[48]} There are several similarities between the symptoms of Essential Hypertension and Shonitaja-Roga. Therefore, it is
possible to say that Mamsa (non-vegetarian) plays a part in the pathophysiology of EHT.

g) Obesity

Being overweight is linked to a higher risk of hypertension, particularly central obesity correlates with increased blood pressure than overall body mass.[49] The excessive consumption of Madhura Rasa in the aetio-pathogenesis of Sthoulya leads to Jatharagni-Vaisheymoya and Medo-Dhatvagnimandya, which in turn produces Ama and Apakva-Medo-vidrddhi (Snigdha-Guru Ahara). This Apakva Ama when deposits in Rasavaha-srotasas may leads to Dhamani-Praticharya (Atherosclerosis).[50,51] Which is a responsible component of EHT. Additionally, srotorodha is caused by Snigdha, Pralip, Picchil, and Guns of Ama, and the outcome is Prakopa of Vyana-vayu. This Apakva Medodhatu itself also obstructs the pathway of Vata.[50] This vitiated Vata (in particular Vyana-Vayu) and causes rise in BP.

h) Ati Snigdhabhojana (fatty food)

Excessive consumption of Snigdha and Guruhara combined with daytime sleep is the explanation given for the etiopathogenesis of Shonita Dusti. When Ati Snigdha, Guru Ahara produces Jatharagni Vaigunya and Medodhatvagnimandhya, Ama (Apakwa Rasadhatu) and Apakva Medoviddhi are produced. When deposits of this Apakva Meda and Rasa occur in Rasavaha Srotas, it may cause Dhama Pratichaya (atherosclerosis), which may be the cause of high blood pressure.

i) Vega-Vidharana

In Ayurveda, suppression of natural urges has unique importance in the manifestation of mainly Vata Vyadhis. As hypertension is the outcome of Vata dosha involvement, suppression of natural urges which aggravates Vatadosha. Acharya Vagbhata has also implied that all the diseases may manifest by the suppression of natural urges.[53] Hridroga is inferred to be a complication of hypertension by modern science simultaneously. Thus, here substantial theory of Udvarta can be taken as an etiological factor of hypertension by taking direct and indirect implications from different places.

j) Raktapradoshaja Nidana

Unwholesome, hot and sharp wine excessive food, Kulattha, Masha, Nispava and Til oil. Pindalu, Mulaka and all green vegetables. Meat of aquatic, marshy, Prasaha and the animals living in holes, Curd, sour whey (Mastu), vinegar, Sura and Sauvira. Rotten, putrefied food and which has mutually contradictory qualities (Viruddha). Sleeping during day time after taking liquid, unctuous and heavy food, excessive anger, excessive exposure to the sun and fire. Suppression of the urges, avoidance of bloodletting (in Sharada).[54]

k) Neurogenic factors

In most cases, sympathectomy does not result in a permanent reduction in hypertension, but neurogenic factors may also be responsible for the vasoconstriction that raises blood pressure. Thus, this problem has not been seen as a significant contributor to high blood pressure. There is definitely evidence of widespread vasoconstriction in the kidneys and elsewhere in the EHT. This most likely causes hypertension. But sometimes, the reason behind this arteriolar constrictions remains unknown.[55]

Psychological factors

It is evident that psychological variables such as tension, anger, and stress may also be important in the genesis of hypertension. For example, acute mental stress produced by sporting out the excessive occurrence of EHT and rise in BP with age found in westernized societies has been attributed to psychological stress.[56] In Ayurveda, from these Manasika Bhavas, vitiation of Mana through Raja and Tama Dosha takes place, which is located in Hridya. Furthermore, Aacharya Dalhana has implied that the functions of Sadhaka Pitta can be associated with Mana and Hridya.[57] Thus, an increase in blood pressure occurs when Rasa-Rakta-Vikshepana impairs the functioning of Hridya. Stress and strain in the mind can raise blood pressure by stimulating the vasomotor center and hypothalamic. Extended or recurrent stress may lead to the development of chronically elevated blood pressure. It’s likely that as stress, tension, and
strain have increased in the modern day, high blood pressure is becoming more common.\cite{68}

**Purvarupa**

अव्यक्तक लक्षणयों तथा आकर्षणमगति स्मृतिम् || (Ch.chi.28/19)

The premonitory symptoms appearing before the appearances of the disease are known as Purvarupa.

On the basis of observations of the patients of Essential Hypertension, it is said to be Vata Pitta Pradhana Tridoshaja Vyadhi and Purvarupa of the Vata Vyadhi is said to be Avyakta. Most of the hypertensive patients are asymptomatic or present with subjective symptoms like headache, vertigo etc. Many patients are diagnosed at routine check-up or other health problem. So the premonitory symptoms of EHT are indistinct.\cite{59}

**Rupa**

प्रादूर्भविलक्षणोऽष्टपलिक्षितम् | (Ch.Ni. 1/9)

The science of Ayurveda investigates symptoms and signs based on Panchagavyanendriya pariksha. The measurements of blood pressure primarily rely on the Darshana, Sparshana, and Shravana parikshas. But when patient feels unhappiness or pain in mind or body it is called as Vedana and it is always the indicator of sansthana (Symptoms) and in 50% of hypertensive patient’s symptomatology (sansthan) is not found. However, 50% of patients have particular clinical characteristics.

- **Shirah Shoola (Headache)**

Headache is popularly taken into consideration a symptom of hypertension which happens commonly within the morning hours after awakening.\cite{60} Acharya Sushruta told that Shoola can’t occur without the vitiation of Vata Dosha.\cite{61} Acharya Charaka has covered Shirah-shoola in 80 types of Nanatmaja-\cite{62} Further, Acharya Charaka while explaining Samanaya Samprapti of Shiroroga mentioned that Prakupita Vatadi Dosha causes Dusti of Rakta, localizing in Shira, produce Shiroroga, which includes Shirah Shoola additionally.\cite{63} This way because of Vata Dusti, Shirah Shoola might also occur.

- **Nidra-Nasha (Insomnia)**

Insomnia is because of disturbed mental factors like mental stress, strain, anxiety and many others. They affect the body and thoughts by numerous psychosomatic mechanisms, which can be associated with regulation of sleep and immediately have an effect on the sleep centre. So, insomnia or disturbed sleep is usually found within the patient suffering from EHT.\cite{64} According to Ayurveda Vitiata Vata and Pitta and Manah Santapa are liable for Nidranasha.\cite{65} Acharya Charaka has mentioned it under Nanatmaja Vikara of Pitta.\cite{66} Laghu Guna of Vayu is usually reason for Nidranasha. Underneath the symptoms of Vata-Pitta Vridhhi, Acharya Sushruta has mentioned both Nidra-Alpata and Nidranasha.\cite{67}

- **Bhrama (Giddiness)**

Giddiness in hypertensive patients might be due to ischemia of labyrinth, malfunctioning of vasomotor system or transient ischemia of the cerebrum.\cite{68}

Acharya Sushruta has stated that Bhrama occurs as a result of vitiating Raja, Pitta and Vata\cite{69}. The Chala Guna of Vayu turns into dominant because of inflated Raja Dosha that makes affected person to sense him like revolving.\cite{70}

- **Tamo Darshana (Flashes earlier than eyes)**

Acharya Charaka has described Tamodarshana in Rakta Pradoshaja Vyadhi; hence Tamadarshan occurs because of Srotorodha in Rakata Vahini of Shira.\cite{71}

- **Daurbalya (Generalized weakness)**

General fatigability has been given under the subjective signs and symptoms related to essential hypertension.\cite{72} Daurbalya has been described in Shonitaja Vyadhi.\cite{73} Impairment of Dhatu formation due to Rasa-Rakta Dusti by using vitiating Vata Dosha also affects the formation of Oja (Prakrita Bala), which produces Ati-Daurbalya.

- **Hridayadravata (Palpitation)**

Palpitations have been described below symptoms related to Essential Hypertension.\cite{74} According to Acharya Gagandhara\cite{75}, Hridayadravata means elevated Gati of Hridaya. Furthermore, even as describing the symptoms of Rasakshaya, Acharya Charaka has noted
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Hridayam-Tamyati. Acharya Gangadhra has commented on Tamyati. Right here, Vyana Vayu is aggravated with its Chala Guna resulting in Hridadravata. 

- **Swasa-Kastata (Breathlessness)**

Swasa-Kastata is diseased state of Pranavaha Srotasa. Increased Kapha when obstructs the Srotasa, Prana Vayu gets vitiated, which ultimately results in Swas-Kricchata. Right here within the context, same Rasa produced via Agni-Vaishamya, which gives rise to Mala-Rupa Kapha and its Sanga in Pranavaha Srotasa can be the reason of Swasa Kastata.

- **Akshiroga (Redness of eyes)**

Akshiroga is defined among Shonitajaroga in Vidhishoniteeya Adhyaya. Also, Acharya Sushruta mentioned that redness of eyes is due to Rakta Vridddhi.

- **Klama**

The tiredness of body and mind without doing any physical and mental exertion is called as Klama. Klama is common symptom in the maximum number of EHT patients. Acharya Charaka listed the symptom under Raktapradosha Vikaras. Vatadoshaprakopa results in the vitiation of Rasa and Raktadhatus which causes Klama.

Clinical Features of Shonitajavyadhi with their Dosha predominance

<table>
<thead>
<tr>
<th>SN</th>
<th>Clinical Feature</th>
<th>Dosha Predominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Akshiroga</td>
<td>Pitta</td>
</tr>
<tr>
<td>2</td>
<td>Raktapitta</td>
<td>Pitta</td>
</tr>
<tr>
<td>3</td>
<td>Raktameha</td>
<td>Pitta</td>
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<td>4</td>
<td>Vatashonita</td>
<td>Vata</td>
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<td>5</td>
<td>Pipasa</td>
<td>Vata, Pitta</td>
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<td>6</td>
<td>Gurugatrala</td>
<td>Kapha</td>
</tr>
<tr>
<td>7</td>
<td>Santapa</td>
<td>Pitta</td>
</tr>
<tr>
<td>8</td>
<td>Daurbalya</td>
<td>Vata</td>
</tr>
</tbody>
</table>

9. Shirashoola Vata, Pitta
10. Klama Pitta, Vata
11. Arati Pitta
12. Krodha-prachurta Pitta
13. Buddhisanmoh Vata, Kapha
14. Sweda Pitta
15. Mada Pitta
16. Kampa Vata
17. Tandra Kapha
18. Tomodarshan Vata, Pitta
19. Bhrom Vata, Pitta

**Samprapti**

Overuse of salt and alcohol vitiate Sadhak Pitta and Shonita. Sedentary life style vitiate Avalambak Kapha and psychological stress vitiate Prana Vayu, Raja Tama Bhava. Prana Vayu has influenced on Hridaya vitiates Hridaya and its components like Sadhak Pitta, Avalambaka Kapha, Oja. Shonita is also involved as it is located in Hridaya. Prakupita Avalambakakapha induces exaggerated contractility of the heart while aggravated Vyana Vayu leads increased Gati, the force of ejection of blood from Hridaya. These events result into forceful expulsion of blood through Dhamanis, ultimately leading into increased resistance in vessels ensuing High blood pressure. At same time because of Aharaja, Viharaja and Manasa Hetu there is Jathargnimandhya which produce Ama (Apkvaanarasa), as consequence of Rasa Raktadi Dushi with Apkava Rasa Raktradivrudhdi can takes place leading to increase viscosity and fluidity of blood. This gives rise to hemodynamic changes where heat has to pump with more pressure. Obesity has been claimed for its role in manifestation of hypertension. Siras (which are Adhishhana of hypertension) are originated from Medodhatu. Vitiated Medo Dhatu causes Srotasavarodha. Ruksha Gun Vridddhi causes hardening of blood vessels and reduction in elasticity.
of vessels results in reduced lumen of blood vessels (Sira & Dhamani).

*Nidana Sevana*

↓

*Vata Pradhana Tridosha Prakopa*

↓

Since Prana Vata has influence on *Hridaya*

↓

Vitiates *Hridaya* and its residing components like Vyana Vata, Sadhaka Pitta, Avalambaka Kapha and Shonita.

↓

*Prakupita Avalambaka Kapha* induces exaggerated contractility of the Heart.

↓

Aggravated Vyana Vata leads increased *Gati* (the force of ejection of blood from Heart)

↓

These events lead into forceful expulsion of blood through *Dhamanis*

↓

Ultimately leading to increased resistance in vessels

↓

Hypertension

**Samprapti Ghataka**

- *Dosha* - Vata (All five types; mainly Vyana Vayu) Pitta (Sadhaka & Pachaka) Kapha (Avalambaka)
- *Dushya* - Rasa, Rakta, Meda
- *Agni* - Jatharagni, Dhatvagni
- *Ama* - Jatharagni, Dhatwagni-Mandya-Janya
- *Srotasa* - Rasavaha, Raktavaha, Manovaha, Medovaha
- *Srotodushti* - Ati-Pravritti, Sanga Type, Siragranthi
- *Udbhava Sthana* - Ama-pakwashaya
- *Sanchara Sthana* - Rosayani (Dhamanis)

- *Rogamarga* - Bahya, Madhyama (Including Tri-Maha-Marma - Hridaya, Shira, Basti)

**CONCLUSION**

In Ayurvedic classics, there is no direct description found regarding Essential hypertension. So the treatment should be based on the *Dosha-Dushya* involvement. *Acharya* has described *Hridaya* and process of *Rasa-Rakta Vikshepana* control mainly by *Prana* and Vyana *Vayu* which is very closely related to the circulatory system in modern science. It has been screened as Essential Hypertension is a *Vata-Pitta Pradhan Raktrapadosha Vyadhi*, being greatly influenced by morbid state of *Mana* i.e., a psychosomatic disorder, which originated by involving different factors like *Dosha*, *Dushya*, *Agni*, Srotas etc. It’s a disease which involves two *Roga-Marga* which are - *Madhayama-Rogamarga* which involves *Hridaya, Murdha and Bahya* - *Rogamarga* which involves *Shira, Dhamani* and *Rakta*. Hence, it’s a *Yapya Vyadhi*. It also involves *Dhatus* i.e., *Rasa, Rakta, Meda* and many others. It Influences or associated with *Marma*, as like *Hridaya* and *Shira*.

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