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Essential Hypertension - An Ayurvedic Review

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ABSTRACT

Essential hypertension is high blood pressure for which there is no clearly defined aetiology. According to oxford textbook of medicine 5th edition, in 2000 it was estimated that 25% of the world adult population were hypertensive and predicted that this would rise to 29% by 2025. By the age of 60, more than one half of adults in most regions of the world will be hypertensive. There is continuous relationship between blood pressure and cardiovascular risk from blood pressure values as low as 115/75mm of Hg. In Ayurveda there is no specific terminology mentioned or explanation has been found regarding essential hypertension. But most of the Ayurveda experts believe that the main pathogenesis occurs in blood vessels and involves all the *Doshas*, including *Manavahasrotas* involvement. Presently the disease is treated empirically in Ayurveda clinics, so there is the need to understand it rationally in terms of Ayurveda so it can be treated accordingly with better results and prognosis. The *Nidana* can be explained under three factors including *bijadoshas*, environmental, and *Manasika Doshas*. It can be described as the disease with *Avyakta Purvarupa* and *Rupa* as *Shirashoola*, *Nidranasha*, *Bhrama*, *Klama* etc. The disease can be concluded as *Vatapradhana Tridoshaja Vyadhi* with involvement of *Mahamarmas*.

Key words: Essential Hypertension, *Vatapradhana Tridoshaja*, *Vatavyadhi*.

INTRODUCTION

Hypertension is one of the major cause of disability and death all over the world. Hypertension causes heart attacks, strokes, kidney failures and other disorder if it is neglected and remains untreated. In many cases, hypertension does not cause any symptoms until it causes complications such as heart attack and stroke and plays a role of silent killer in the body.

People with *Pitta* and *Vata* predominant constitution

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and *Pitta* and *Vata* imbalance, are more prone to hypertension than any other. Unprocessed anger, frustration, irritability, anxiety and fear leads to mal-adaptation of the endocrine system, which then leads to conditions like hypertension. Treatment is based on bringing these imbalances back to normal. In the treatment of hypertension; nutrition, exercise, breathing exercises (*Pranayama*), Yoga, meditation, behavioral modification along with various herbs and minerals are prescribed.

So far as Ayurvedic description is concerned, no specific term is found for essential hypertension. In all the opinions different view have been adopted, but no one has denied the fact that in essential hypertension, the main pathogenesis occurs is in blood vessels. It is a psychosomatic and *Vatapradhana Tridoshaja* disorder.

Nidana (Etiology)

The exact aetiology of the rise in blood pressure is not yet clear. Although, strongly suggested predisposing factors can be classified in group as follows,

1. *Bija Doshaja* (Genetic Factors)

2. Environmental
3. *Manasika* (Psychological Factors)

Bija Doshaja (Genetic Factors)

The importance of genetic factors in the pathogenesis of essential hypertension is indicated by the similarity of blood pressure values between close (first degree) relatives, such as between siblings and between parents and children.

Acharya Charaka has also described the genetic influences in production of disease. At the time of conception, if the *Bija* (sperm and ovum), *Bija Bhaga* (chromosomes) or *Bijabhaga Avayava* (genes) get vitiated; it is likely to travel in subsequent generations.^[1] *Dalhana* has also commented that *Bijadusti* does not mean whole *Dusti*, but there may be a *Dusti* of a part of *Bija* that is the organ developing from that particular part are also defective or abnormal.^[2] While classifying the diseases *Acharya Sushruta* has mentioned *Adibala Pravrita Vyadhi* and is said to be originated due to deformity of *Shukra-Shonita* of the parents at the time of conception.^[3]

From the above discussion, it can be concluded that *Shukradusti* because of vitiated *Vyana* and *Apanavayu*,^[4] may be considered to give rise to the inherited disease and essential hypertension may be one of them.

Environmental Factors

A number of environmental factors have been implicated in the development of essential hypertension, including age, race, sex, salt intake, obesity, occupation, alcohol intake etc.

Age

Old age is *Vata Dosha Pradhana* age, physiological aggravation of *Vata* with its *Ruksha, Khara, Daruna, Shita Gunas* etc. may cause *Sankocha* and *Kathinya* of the vessels. In the senile people, perfusion of nutrition to the *Dhatus* also hampers.^{[5],[6]} This results in cessation of normal functioning of *Dhatus, Indriyas*, etc., leads to provocation of *Vata Dosha* aiding in the process of reduction in the lumen of the arteries - raising the blood pressure. *Chalaguna* of *Vyanavayu*,

increases in old age and may make forcible *Rasa-Rakta Samvahana* (forcible cardiac output) resulting in essential hypertension.

Race

Clues into the etiology of Hypertension may also be obtained from comparison of different racial groups. Most studies of blood pressure in black and white people have reported a higher average blood pressure in blacks, and consequently, higher prevalence of Hypertension. By contrast, however, blacks living in rural area have low blood pressure and no rise with advancing age.

Gender

Below the age of about 45 women tend to have slightly lower blood pressure than men. They also have less coronary heart diseases and strokes. These differences in early life may be due to endocrinological events associated with the child bearing years. After the age of about fifty years, blood pressure rise in women to become similar to those seen in men. At the same time the relative absence of Hypertension in cardiovascular disease in women before the menopause raised the possibility that endogenous estrogens are in some way protective.

Obesity

In etiopathogenesis of *Sthaulya*, excessive use of *Madhura, Snigdha, Guru Ahara* causes *Jatharagni Vaigunya* and *Medodhatvagnimandya* leads to production of *Ama* and *Apakva Medovridhi*. This *Apakva Ama* when deposits in *Rasavaha Srotasa* may lead to *Dhamani Pratichaya* (Atherosclerosis),^{[7],[8],[9]} which may be a responsible factor of essential hypertension. Moreover, *Snigdha, Pralepi, Pichhila, Guna* of *Ama*, cause *Srotorodha*, results as *Prakopa* of *Vyanavayu*. The *Apakva Medodhatu* itself also obstructs the pathway of *Vata*.^[10] This vitiated *Vata* (mainly *Vyana*) may raise the blood pressure.

Salt

In *Charaka Samhita*, excessive use of *Lavana* is described as the cause of *Shonitaja Roga*^[11] and it

causes increase in the blood.^[12] Same in essential hypertension, *Rakta* is also vitiated. Moreover, *Acharya Charaka* has also mentioned that *Lavana* should not be consumed in excess and for longer duration. When excessively used, it produces fatigue, lassitude and weakness of the body,^[13] which are the symptoms, usually found in the patients of essential hypertension.

Alcohol

The *Gunas* of alcohol like *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi* etc. are exactly opposite to the *Gunas* of *Oja*,^{[14],[15]} which also provoke *Vata-Pitta Dosh*. Being the seat of *Oja*, *Hridaya* also gets involved. Destruction of *Oja* would disrupt the normalcy of *Prana* and *Vyanavayu*, *Sadhaka Pitta* and *Avalambakakapha*, which are the *Ashrita* (situated in) of *Hridaya*.

Acharya Charaka has also described *Pradusta*, *Bahu* (excessive) *Ushna*, *Tikshna* (hot and sharp) *Madyapana* and *Surapana* as a causative factor of *Shonita Dusti*. In brief, *Raktadusti* along with *Vata* and *Pitta Prakopa* takes place due to *Madyapana*, a conductive factor for essential hypertension.

Vegetarian Diet

Mamsa has been mentioned among the causes of "*Shonitaja Roga*".^[11] Some of the symptoms of *Shonitaja Roga* are similar to those of Essential Hypertension. So it can be said that intake of *Mamsa Sevana* (non-veg. diet) might have some role in the pathogenesis of essential hypertension.

Smoking

Tobacco is derived from the leaves of its plants (*Nicotiana tabacum*), which having *Madaka* and *Pitta Vardhaka* effects. It also creates *Mada* and *Bhrama* (*YR-Kundashakudi Varga*). It effects both the central and peripheral nervous systems, which may contribute as a risk factor of essential hypertension. Moreover, it contains nicotine which is potent vasoconstrictor causing elevated blood pressure.

Manasika Bhavas (psychological factors)

As per Ayurveda, by these *Manasika Bhavas*, Vitiating of *Mana* via *Raja* and *Tama* takes place, which is

located in *Hridaya*. Moreover, *Dalhana* has clearly mentioned that *Mana* and *Hridaya* correlates with function of *Sadhakapitta*.^[16] So, hampered function of *Rasa-Rakta Vikshepana* of *Hridaya*, being the cause for rise in blood pressure.

Purvarupa (Pre-Symptoms)

Though, essential hypertension is said to be *Vatapradhana Tridoshaja Vyadhi*, it can be considered under the broad heading of *Vata Vyadhi* and *Purvarupa* of the *Vatavyadhi* is said to be *Avyakta*. In this way the *Purvarupa* of essential hypertension are also *Avyakta* (obscure).

Rupa (Symptoms)

Elevated blood pressure is usually asymptomatic until the organ damage occurs. However, higher level of blood pressure may be associated with symptoms even in the absence of the obvious target organ damage. Usually the patient goes with one other complaint to the hospital and unexpectedly gets diagnosed as hypertensive patients.

The circulation throughout the body of nourishing elements like *Rasa*, *Rakta* etc. depends on normal function of *Vata*, particularly *Vyanavayu*.^[17] By virtue of its *Ruksha*, *Khara*, *Shita Gunas* vitiated *Vyanavayu* causes *Sankocha* of *Vahinis* and by its *Ruksha* and *Daruna Gunas* it dries up of the inner layer and makes *Upalepana* of *Malarupa Kapha*; enhances the process of *Kathinya*, resulting in reduction of vascular lumen, which further obstructs the normal path way of *Vyanavayu*. Obstructed *Vyana* may leads to forcible blood flow in the vessels leading to essential hypertension.

Shirahshoola (Headache)

In hypertension usually throbbing type of headache in occipital region and radiating to vertical or in frontal region occurs mainly in morning hours and remains for whole day.

Acharya Sushruta has stated that any type of *Shoola* cannot occur without the vitiating of *Vata*.^[18] *Charaka* has included *Shirahshoola* in 80 types of *Nanatmaja Vatavyadhi*. Further, *Charaka* while explaining *Samanya Samprapti* of *Shiro Roga*, mentioned that

Prakupita Vatadi Dosha cause *Dusti* of *Rakta*, localizing in *Shira*, produce *Shiroroga*, which includes *Shirah Shoola* also. In this way due to *Vatadusti*, *Shirah Shoola* may occur.

Nidranasha (Insomnia)

Vitiated *Vata* and *Pitta* and *Manasa Santapa* are responsible for *Nidranasha*.^[19] Charaka has mentioned it under *Nanatmaja Vikara* of *Vata*, hence *Laghu Guna* of *Vayu* generally causes *Nidranasha*. Under the symptoms of *Vata-Pitta Vriddhi*, *Acharya Sushruta* has mentioned both *Nidralpata* and *Nidranasha*.^[20]

Insomnia is due to disturbed psychological factors like stress, strain, anxiety etc. They affect the body and mind by several psychosomatic mechanisms, which are closely related with regulation of sleep and directly affect the sleep center. So, insomnia or disturbed sleep is usually found in the patient of essential hypertension.

Bhrama (Giddiness)

Giddiness in hypertensive patients might be due to ischemia of labyrinth, malfunctioning of vasomotor system or transient ischemia of the cerebrum. *Bhrama* has been mentioned as *Nanatmaja Vikara* of *Vata*.^[21]

Acharya Sushruta has mentioned *Bhrama* as a result of vitiated *Raja*, *Pitta* and *Vata*.^[22] According to *Dhalana*, *Chalaguna* of *Vayu* becomes dominant due to inflated *Rajadosha*, makes patient to feel him like revolving.^[23]

Tamodarshana (Flashes before eyes)

Acharya Charaka has described *Tamodarshana* in *Rakta Pradoshaja Vyadhi*, hence it appears due to *Srotorodha* in *Raktavahinis* of *Shira*.^[24] Visual disturbances may be due to transient cerebral ischemia or strokes.

Ati Daurbalya (Weakness)

Atidaurbalya has also described in *ShonitajaVyadhi*.^[24] Impairment of *Dhatu* formation due to *Rasa-Rakta Dusti* by vitiated *Vata Dosha* also affects the formation of *Oja (Prakrita Bala)*, which produces *Ati*

Daurbalya. It may results in a reduced capillary pressure to cell tissues, as a result they are not well nourished.

Klama (Easy Fatigability)

Without any physical or mental work, tiredness of the body and mind is called *Klama*.^[25] *Charaka* has mentioned *Klama* under *Raktaja Roga* hence due to *Dusti* of *Rakta* it is manifested.^[26]

Hridayadravata (Palpitation)

According to *Acharya Gangadhara*, *Hridayadrava* means increased *Gati* of *Hridaya*.^[27] Moreover, while describing the symptoms of *Rasakshaya*, *Acharya Charaka* has mentioned '*HridayamTamyati*'.^[28] In case of *Dhatukshaya*, *Vata* is always vitiated. Here, *Vyanavayu* is aggravated with its *Chala Guna* resulting in *Hridayadravata*. A history of recurrent episodes of tachycardia may be due to intrinsic cardiac disease, anxiety or fear.

Svaskrichhata (Breathlessness)

Svaskrichhata is pathological state of *Pranavaha Srotasa*. *Kapha* when obstructs the *Srotasa*, *Pranavayu* gets vitiated, resulting in *Svaskrichhata*.^[29] Here in this context, *Sama Rasa* produced by *Agnivaishamy*, which gives rise to *Malarupakapha* and its *Sanga* in *Pranavaha Srotasa* may be the reason of *Svaskrichhata*. Breathlessness on exertion more likely to be a complicating factor with coexistent coronary heart disease. Paroxysmal nocturnal dyspnoea may occasionally be due to severe Hypertension alone.

Akshiraga (Redness of eyes)

Akshiroga is described among *Shonitajaroga* in *Vidhishoniteeya Adhyaya*. *Sushruta* has also mentioned that redness of eyes is due to *Raktavridhi*.^[30]

Prabhuta Mutrata and Ratri Mutrata (Polyuria and Nocturia)

Polyuria can occur with intrinsic renal disease, which may itself cause hypertension or may follow renal damage secondary to raised blood pressure. Nocturia is one of the most frequent consequences of blood

pressure elevation resulting from reduction in urine concentrating capacity.

Samprapti - (Pathogenesis of essential hypertension)

Essential hypertension is a psychosomatic disorder, which is originated by involving different factors like *Dosha, Dushya, Agni, Srotasa* etc., which are being explained here in detail.

1. Dosha

In the etiopathogenesis of essential hypertension, due to *Nidana Sevana* i.e. *Aharaja, Viharaja, Manasika* etc., *Sharirika* and *Manasika Doshas* are provoked.

Manobhavas like *Bhaya, Chinta, Shoka, Kama* etc. causes *prakopa* of *Vata*,^[31] particularly lead to vitiation of *Pranavayu*. Being imbibed in *Murdha* (Brain), from where it executes its function; it has a direct relationship with the *Manasa Bhava* like *Krodha, Bhaya, Chinta* etc. *Pranavayu* is controller of all other form of *Vata* physiologically. So *Prakopa* of this *Pranavayu* leads to derangement of *Vyana* and *Apana* also.

As in normal state, *Vyanavayu* perform its *Rasa-Rakta Vikshepana Karma* normally. But when it vitiates, *Dhamani Sankocha* occurs due to its *Ruksha, Shita* and *Khara Gunas*, resulting in the reduction of *Srotovivara* (lumen of the channels). Due to this narrowed pathway, *Avarodha* (obstruction) occurs in *Rasa-Rakta-Vikshepana Karma*, causing forcefully function of *Vyanavayu* with increase its *Chalaguna*, which makes the pressure to rise at the wall of *Dhamanis*.

Apanavayu, by its *Pratilomagati* causes *Sanga* of *Mala* after getting vitiated by intensified *Pranavayu*. Retention of sodium is the main cause among the causes of essential hypertension.

Vata, Pitta (Sadhaka) is also provoked by such *Manasika Bhavas* like *Krodha, Shoka, Bhaya* etc.^{[31],[33],[34]} According to *Dalhana*, *Mana* and *Hridaya* correlates with the functions of *Sadhakapitta*.^[35] As *Hridaya* is location of *Sadhaka Pitta*, it is also affected on the basis of *Ashraya-Ashrayi Bhava*, causing impaired function of *Rasa-Rakta Vikshepana*. Moreover, *Avalambaka Kapha* situated in *Hridaya*,

may also affect the function of *Rasa-Rakta Vikshepana* causing excessive *Upalepana Karma* in *Vahinies*. Thus, obstructed *Rasa-Rakta Vikshepana Karma* leads to rise in the blood pressure.

Raja and *Tama* are two *Manasika Doshas* as per Ayurveda. Due to *Manasika Nidana Sevana (Chinta, Bhaya, Shoka, Krodha* etc.), *Raja* and *Tama* are provoked with their *Chala* and *Guru* properties respectively (*Sankhya Karika* 13), which may hamper the functions of *Manasa* and produce *Manasika* manifestations of the disease. The vitiation of *Raja* and *Tama* also results in vitiation of *Sharirika Dosha*. Thus, both *Sharirika* and *Manasika Dosha* in conjunction produce psychosomatic disorders viz. essential hypertension.

2. Dushya

Rasa, Rakta, Mana, Hridaya and *Oja* are main *Dushya*, affected in the etiopathogenesis of essential hypertension. The *Manasika Bhavas* affect *Chinta, Kama, Bhaya, Krodha, Shoka, Udvega* etc. make direct effect on *Mana*.^[36] These obnoxious states of *Mana* affects *Hridaya* also.^[37] Moreover, *Hridaya* is also affected by *Dusti* of *Mana* on the basis of *Ashraya Ashrayi Bhava*.^[38] ill feeling of *Mana (Manasika Bhava)* like *Shoka, Krodha* etc. affect the *Oja*.^[39]

Rasa and *Rakta* are circulated throughout the body by the *Rasa-Rakta Vikshepana Karma* of *Hridaya*. So, vitiation of all the *Dushyas* including *Rasa* and *Rakta*, hamper this *Vikshepana Karma*, leads to essential hypertension and its related manifestation (*Hridayadrava* - Palpitation, Tachycardia etc.).

3. Agni

It has been clearly mentioned by *Acharya Charaka* that, in such psychic conditions like - *Kama, Krodha, Lobha, Moha* etc., in spite of taking *Mithya Ahara, Agnivaishamy* occurs due to *Udvegata* of *Manasa*.^[40] So, in essential hypertension, due to *Agni Vaishamy*, its related manifestations occur.

4. Srotasa

Including *Manovaha Srotasa, Rasavaha* and *Raktavaha Srotasa* are main affected *Srotasa* in the

etiopathogenesis of essential hypertension. In Ayurvedic scriptures, *Manovaha Srotasa* is mentioned in the description of *Manasa Roga*. *Chinta, Kama, Bhaya, Krodha, Shoka, Udvega* etc. make direct effect on *Mana*.^[41] These obnoxious states of *Mana* produce *Manovikara* with affecting *Manovaha Srotasa*, on the basis of *Ashraya-ashrayi Bhaava*.

Manasa Bhava affect *Rasavaha* and *Raktavaha Srotasa* also as excessive worry is a cause of *Rasavaha Srotodushti* and *Krodha* is a cause of *Raktadusti* leads to *Raktavaha Srotodushti* on basis of *Ashraya-ashrayi Bhava*.^[41] Due to *Srotodushti*, *Rasa-Rakta Parivahana* may get obstructed (*Avarodhita*), which may towards to essential hypertension.

5. Udbhava Sthana

Hridaya is the origin of essential hypertension, because it is seat of *Mana*, *Oja*, affected *Doshas* - *Vata* (*Prana, Vyana*), *Pitta* (*Sadhaka*), *Kapha* (*Avalambaka*), part of *Manovaha Srotasa*, root of *Rasavaha Srotasa* and main organ of *Rasa-Rakta Vikshepana Karma*. So, considering these points, *Hridaya* can be taken as its *Udbhava Sthana* of essential hypertension.

6. Vyakti Sthana

Essential hypertension is considered under the group of psychosomatic disorders, by which *Psyche-Manasa* and *Soma - Sharira* both are affected. That's why *Vyaktisthana* of essential hypertension may be considered *Sarva Sharira* with *Mana*.

So it can be concluded that Essential Hypertension can be correlated with *Dushti* of *Vata* (*Vyana* and *Pranavayu*), *Pitta* (*Sadhaka*) and *Manovaha Srotasa* involving *Hridaya, Rasayani, Oja* and process of *Rasa Vikshepana*. It is due to disturbed psychological factors like *Chinta* (worry), *Udvega* (Stress), *Krodha* (Anger) etc., producing Hypertensive state.

Sadhya-Asadhya (Prognosis)

To classify the disease essential hypertension, in terms of *Sadhya-Asadhya* category, *Samprapti* of the disease is considered. Essential Hypertension is a *Vatapradhana Tridoshaja Vyadhi* with vitiated *Doshas*

being held up in the *Madhyama Rogamarga*. Along with this, involvement of all the 3 *Mahamarmas* (*Shira, Hridaya, Basti*) is evident from the etiopathogenesis of the disease. The disease is known to run a chronic course.

CONCLUSION

Essential Hypertension is *Vatapradhana Tridoshaja Vyadhi*. All *Vatavyadhi* after certain period of time become *Durupkrama* or *Kricchrasadhya* and *Tridoshaja Vata Vyadhi* is *Pratyakhyeya* according to *Agnivesha*. It is *Yapya* as per the involvement of three *Maharma* and *Madhyama Rogamarga*. Essential hypertension when it is benign and present without complications and is treated at an early state is *Yapya*. After the disease gets associated with complications or it is malignant and present for longer duration, it is *Pratyakhyeya*. This is supported by the clinical findings that patients are free from symptoms as long as medicines are administered. The extent of end organ damage is related principally to the duration of essential hypertension and its severity. Thus by detecting essential hypertension at an early stage and treating it effectively, prognosis can be improved.

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