



Review Article

A REVIEW ON THE CONCEPTUAL UNDERSTANDING OF HYPERTENSION IN AYURVEDA

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ABSTRACT

Due to rapid modernization there are changes in the life style in terms of habits and food intake, due to which there is alteration in the metabolism leading to various metabolic disorders. Hypertension is considered to be one among them. Ayurveda emphasis completely on *Dosha-Dushya vivechana* rather than one entity like *Nidanas*. There are no direct references in our classical texts explaining about Hypertension. Thus one should understand the concept of Hypertension in Ayurveda based on functions of *Doshas* and *Dhatu* like *Vyana Vata, Pranavata, Rasa-Rakta-Medo dhatu* mechanism. As many research works have been conducted on this to understand this condition in detail, it can be comparable to *Uccha Raktachaapa, Vyana bala Vaishamy, Dhamani Upalepa* etc. As there are different versions of explanation available on this condition in terms of physiological and pathological aspects, a review is done in this article by compiling different versions explained by Acharyas in the Samhitas and different authors in the contemporary and Ayurveda text books for better understanding of the concept, which is fruitful in the line of management. The concept of *Vyana vayu* in relation to *Gatavata, Hridaya* in relation *Dhamani upalepa* the mechanism of occurrence is detailed in the article.

INTRODUCTION

In the present era of rapid modernization, life of every individual is stressful. Stress has become a part of every human life within the family, in business organizations or enterprises and in every social or economic activity. Right from the time of birth till the last breath drawn, an individual has to go through various stressful situations. Thus the present era can be appropriately called the 'era of anxiety and stress'. Some individuals who are not able to adapt themselves to the stress of day to day life become prone to psychosomatic illness. One among them is hypertension which is overwhelmingly increasing day by day.

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.

The term Essential Hypertension is reserved for about 95% of hypertensive individuals in whom no immediately evident underlying renal or adrenal cause can be found for the raised blood pressure. It is one of the most troublesome and problematic diseases for the patients as well as the physicians, due to its silent nature and deadly complications. It can only be detected on routine medical check-ups or when the patient goes to a hospital with its dangerous complications like stroke, angina, myocardial infarction etc.

Ayurveda is not only a heritage of Indian civilization but also a full-fledged science, consisting of all medical and allied branches essential to lead a healthy life. 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 worldly things.

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Hypertension is an instrumental disease which is a recent diagnostic invention of modern science. Hence there is no direct reference of 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 *Uchharaktachapa*, *Uchharaktabhara*, *Raktagata Vata*, *Raktavrita Vata*, *Pranavrita Vyana*, *Vyanavrita Prana*, *Shleshmavrita Vyana* etc and CCRAS has coined the term *Vyanabala Vaishmya* and the description of hypertension is difficult to find though.

In *Charaka Samhita* stated as whatever knowledge is there in this *Samhita* is everywhere and at the same time what is not there in this book is not found elsewhere (CS.Si.12/54). The physician should not get disheartened for not knowing the name of a disease as our ancient *Acharyas* have given clear guidelines to view and manage such diseases when not mentioned directly (CS.Su.18/44). It is more important to understand the possible pathogenesis in terms of the factors involved like *Dosha*, *Dushya* etc. Though a direct disease condition is not mentioned in Ayurveda, but there are many references in ancient texts about haemodynamic system including *Hridaya*, *Sira*, *Dhamani*, *Rasa*, *Rakta*, *Ojus*, *Vyanavayu*, *Sadkapitta*, *Avalambaka Kapha*, *Manas* etc which are commonly affected by the high blood pressure.

In modern texts references regarding hypertension are elaborated in detail. Whereas in Ayurveda though the condition is mentioned in various contexts, it is difficulty in identifying the condition with a known disease entity. As *Acharya Charaka* has quoted that the physician can initiate the treatment after assessing the *Hetu*, *Sthana* and *Samprapti* without giving the importance to merely naming a disease.^[1] So any disease can be explained on the bases of principle of Ayurveda. Many conceptual studies have been done to correlate hypertension in Ayurveda. Certain scholars have attempted to correlate hypertension with *Dhamani Prapurnata*, *Dhamini Praticaya*, *Dhamani Upalepa*, *Raktagata Vata*, *Siragata Vata*, *Vyanabala Vaishmya*, *Rudhira Mada*, *Uccha Rakta Chapa*, *Avruta Vata Roga*, *Shonita Dusti* etc.

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 about circulation of *Rasa*, *Rakta* throughout body with the help of *Vyana vayu*.^[2]

In Ayurveda, three *Doshas* – *Vata*, *Pitta* and *Kapha*; seven *Dhatu*s (*Rasa*, *Rakta* etc.), three *Malas* are considered as the root cause of all the functions of the body. So, to understand the blood pressure in terms of Ayurveda, consideration of *Vata (Prana, Vyana)*, *Pitta (Sadhaka)* and *Kapha (Avalambaka) Dhatu*s like *Rasa* and *Rakta*, the *Srotas* by which it travels, *Hridaya*, *Oja* and functions of *Mana* are necessary.

Ayurvedic Concept of Blood Pressure Regulation *Hridaya*

There are references about *Hridaya*, its shape, seat and functions in our classics. *Hridaya* is similar to *pundarika (Kamala)* which is *Adhomukha* or *Kumbhika phala*.^[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* and *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. *Charaka Samhita* has elaborated that *Dasha dhamani*, *Prana*, *Apana*, *Mana*, *Budhi* and *Chetana* are attached to the *Hridaya*.^[7] *Hridaya* is the origin of *Rasavaha srotas* and *Pranavaha srotas*^[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 *Dhatu*s *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 and relaxation of the heart

Circulation

Detail description of the physiology of the heart is not found in Ayurveda literature but the circulation of *Rasa* – *Rakta* throughout the body takes place with the help of *Vyana Vayu* and gives pulsating capacity to the arteries.

Rakta samvahana is clearly explained by Ayurveda classics. In *Bhela Samhita*, it is mentioned that, the *Hridaya* supplies *Rakta* to the body which is carried by *Dasha dhamanis*, four *Dhamanis* will supply superior part of the body, two going obliquely, four *Dhamanis* will supply inferior part of the body and nourishes all the *Dhatu*s. Also the return of *Rakta* to *Hridaya* through *Siras* is evident.^[9]

Concept of *Dhamani* and *Sira*

Dhamani means pulsatile,^[10] which fills and expands. The name indicates its function. *Charaka*

Samhita has mentioned *Hridaya* as the root of *Dhamani*^[11] and *Dhamanis* are mentioned as *Pitruja bhava* which is centrally hollow and harder than *Siras*. *Dhamani* circulates *Rasa-rakta*, propelled out by *Hridaya* and nourishes all the *Dhatus*.^[12]

The vessels in which “*Sarana*” takes place are known as *Sira*.^[13] Like *Dhamanis*, *Sira* is also mentioned as *Pitruja bhava*.^[13] These are the pulsation less vessels. It forms by the *Mridu paka* of *Meda Sneha*.^[14] It is an *Upadhatu* of *Rakta*.^[15]

Srotas

In *Charaka Samhita* it is defined as the structure through which *Sravana* occurs is known as *Srotas*.^[16] *Chakrapani* has described *Srotas* as that in which nutrients of *Dhatus* are transported from one place to other and nourish cells of the body. Waste products produced by them again are transported through *Srotas*. In the context of blood pressure *Rasavaha* and *Raktavaha srotas* are important, as they are related to *Rasa rakta samvahana*.

Concept of Rasa and Rakta

Rasa dhatu is produced from the *Ahara* and *Hridaya* is the seat of *Rasa dhatu*, from *Hridaya* it travels all over the body through twenty four *Dhamanis*; nourishes the entire body. While circulating through various *Ashayas*, it comes in contact with *Dosha*, *Dhatu* and *Mala*. It is *Drava anusari* and its functions are lubricating, vitalizing, nourishing and supporting the body.^[17] It gets red colour under the influence of *ranjaka pitta* after it reaches *Hridaya* with the help of *Samana vayu*.^[18] The *Rasa dhatu* after reaching *Yakrit* and *Pleeha* by the action of *Ranjaka Pitta* on it, ensue the formation of *Shonita*.^[19] *Rakta* which resembles the colour of *Indragopa*, it is in a state neither too thick nor too thin in consistency.^[20] It is present all over the body and it is important for the support of life. It is *Snigdha*, *Guru*, *Chala* and *Swadu*. When it is in *Vidagda Avastha*, it will be like *Pitta*.^[21] It is responsible for *Varna prasadana*, *Bala*, *Sukha* and *Ayu*. It is considered as *Prana* of *Shareera*.^[22]

Factors Regulating Normal Blood Pressure

Vata dosha mainly *Prana vayu*, *Vyana Vayu*, *Sadhaka Pitta*, *Avalambaka Kapha*, *Manas* and *Ojas* have their impact on regulation of blood pressure and function of *Hridaya*.

The word *Vata* is originated from “*Va gati gandhanayo*” which signifies movements. All kinds of motivation or movements in the body originate due to *Vata*. It is termed as “*Prana*” of all living beings.

Prana Vayu

Pranvayu is situated in *Murdha*^[23] and performs the functions like *Hridaya dharana*, *Buddhi*, *Chitta*, *Indriya dharana*.^[24] From the location and the above said functions elicits that *Prana vayu* is responsible for higher brain functions. Here *Hridaya*

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.^[25] Its functions are *Gati* (movements), *Prasarna* (extension), *Akunchana* (flexion), *Rasasamavahna*, *Sveda-asrik sravana*, *Dhatu tarpana*.^[26] *Nyaya chandrika* commentary explains *rasadi samvahana* is *Rasa-rakta samvahana*. *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 *Manoratha* produced by *Hridaya*, only because of *Sadhaka Pitta*; hence, it has been named as *Sadhaka*.^[27] 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*. *Manas* becomes more efficient, in turn, enhances *Budhi*, *Medha*, *Abhimana* etc.^[28] 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*.

Avalambaka Kapha

Heart has been described as the seat of *Avalambaka Kapha*^[29] 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. ^[30] *Hridaya* is the seat of *Para ojas*. From *Hridaya*, *Ojas* circulates all over the body. ^[31]

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.^[32] *Chinta*, *Shoka*, *Krodha*, *Hrasa*, *Lobha*, *Bhaya* and *Moha* are some factors which cause vitiation of *Dosha* and *Manas* these vitiated *Dosha* reach *Hridaya* and cause *Manovaha sroto vikara*.^[33] So there is a relation between *Manas*, *Hridaya* and *Ojas*. Many pathological conditions of *Hridaya* lead to the vitiation of their *Ashraya* (*Prana vata*, *Vyana vata* and *ojas*) and vice versa. Thus it is clear that vitiated *Manas*

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 *Doshadushya vivechana*. 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*
- *Raktagata vata*
- *Siragata vata*
- *Pittavrita vata*
- *Raktavrita vata*
- *Pittavritta udana*
- *Pranavritta udana*
- *Vyanabala Vaishamyia*

Dhamani Pratichaya

According to *Charaka Samhita*, *Dhamani pratichaya* is a *Kaphaja nanatmaja vyadhi*.^[34] *Acharya Chakrapanidatta* has explained *Dhamani pratichaya* as *Dhamani upalepa*. This is correlated with Hypertension by *Vaidya A.D. Athwale* from Maharashtra School of *Vaidya*.

Raktagata vata

Raktagata vata is one of the *Vatavyadhi*. *Charaka Samhita* has mentioned the *Lakshanas* like *Teevra ruja*, *Santapa*, *Vaivarnya*, *Krishatha*, *Aruchi*, *Bhuktasya Stambha*.^[35] Almost all the symptoms which are mentioned by *Charaka Samhita* are similar to *Vagbhata* but he has mentioned *Raga* and *Bhrama*.^[36] *Vagbhata* has considered *Bhrama* as one of the main symptom and it is one of the main symptoms of hypertension.

Siragata vata

Siragata vata comes under *Vatavyadhi*, when there will be *Vataprakopa* in *Sira*. The *Lakshanas* of *Siragata vata* are *Manda Ruja*, *Shopha*, *Kampa* and *Spandana* due to *shosha*.^[37] According to *Sushruta* the *Lakshanas* are *Shula*, *Sira Akunchana* and *Purana*.^[38]

Pittavrutavata

Pittavrutavata comes under *Vata vyadhi*, when there will be *Pittavrutta vata* it shows clinical manifestation such as *Daha*, *Trishna*, *Shola*, *Bhrama* and *Tama*.^[39] 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*.^[40]

Pittavritta udana

The *Pittavritta udana lakshanas* are *Murcha*, *Daha*, *Shola*, *Daha* in *Nabhi* and *Uru Pradesha*,

Ojobramsha^[41] are resemblance with the symptoms of hypertension.

Pranavritta udana

When *Pranavayu* is overlapped by *Udana vayu*, it causes *Shirograha*, *Pratishyaya*, *Nishwasa*, *Uchhasa samgraha* (obstruction to inspiration and expiration) *Hidroga* and *Mukhashosha*.^[42]

Vyanabala Vaishamyia^[43]

Central Council of Researches in Ayurveda and Siddha has given the name for essential hypertension is *Vyanabala Vaishamyia*. They had explained the *Nidana*, *Purva roopa*, *Samprapti* and *Chikitsa* for the same as follows;

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

The disease *Vyanabala Vaishamyia* seems to be resulted from *Vaishamyia* 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*. *Vaishamyia* refers to *Vikriti*, in which they are able to produce the disease. *Vaishamyia* means *Vridhhi* or *Hrasa*. Therefore *Vyanabala Vaishamyia* may either be considered as increased function or decreased function of *Vyana vayu*. *Charaka Samhita* mentioned that, the decreased *Dosha* is not able to manifest even its own symptoms. Hence, hyper functioning of *Vyana vata* is considered under *Vyanabala Vaishamyia*, which produces increased force in the wall of the blood vessels to produce hypertension.

Nidana- *Tikta*, *Rookshanna*, *Sheetanna*, *Alpaanna*, *Laghuanna*, *Virudhahara*, *Vishamashana*, *Adhyashana*, *Shushka bhojana*, *Ativyayama*, *Vishamopachara*, *Langhana*, *Vega vidharana*, *Divya Swapna*, *Marmabhighata*, *Yuddha*, *Ativyavaya*, *Grishma ritu*, *Chinta*, *Shoka*, *Bhaya*, *Krodha*.

Other Predisposing Factors

Obesity: *Acharya Sushruta* described that *Medo roga* leads to *Vata vikara*; while commenting on this *Dalhana* explained that *Vata vikara* is produced due to *Medo avruta marga*.

Excessive Alcohol Intake (Madya): In the chapter of *Madhatyaya roga* of *Charaka Samhita* quoted that when *Madya* is taken in large quantity, it will affect the *Ojas*, further it affects *Hrudaya*, *Mana*, *Buddhi*, *Indriyas* and *Atma*. *Madya* affects *Dosha*, *Dhatu* and *Srotomula* of *Rasvahasrotas* leading to hypertension.

Excessive Salt Intake (Ati lavana): In *Charaka Samhita* it has explained that excessive consumption of *Lavana Rasa* leads to *Rakta Vridhhi*. It should be taken as *Rakta prakopa hetu*, which is one of the important *dushya* in the etiopathogenesis of hypertension. Again

in *Vimanasthana*, Acharya explains that *Lavana rasa* when taken for long duration leads to *Dosha sanchaya*. Similarly in *Astanga Samgraha*, *Lavana* is said to increase *Shareera kleda*.

Smoking: *Ati dhumapana* causes dryness of throat, hemorrhage, giddiness, syncope and loss of function of *Indriya*. It is another *Vata prakopa nidana*, which leads to obstruction of vessels leading to increased peripheral resistance commonly associated with hypertension.

Prodromal features of *Vyanabala Vaishamyia (Purvarupa)*

CCRAS considered hypertension as *Vyanabala Vaishamyia* which is a *Vata* predominant disease and there are no prodromal symptoms of *Vata vyadhi* mentioned in Ayurvedic classics. In *Charaka Samhita* it has mentioned that when *Purvarupa* are not mentioned, weak manifestations of *Rupa* should be considered as *Purvarupa*.

Symptomatology (*Rupa*)

Complete appearance of the disease occurs after *Doshadushya sammurcchana* and signs/symptoms present at this stage are called *Rupa* or it is *Vyakta avastha* of *Doshadushya sammurcchana*. According to Acharya *Sushruta*, it is the fifth *Kriyakala* of the manifestation of the disease.

Pathogenesis (*Samprapti*)

To know the *Samprapti* of Hypertension, it is necessary to know about the *Nidana* of the disease because the three chief events leading to the disease are as follows:

1. *Dosha prakopa*
2. *Dhatu shaithilya*
3. *Kha vaigunya*

These three factors can be understood for the pathogenesis of *Vyanabala Vaishamyia* with the following concepts such as:

Agantuja Hetu: *Yuddha*, *Patana* (trauma), *Abhichara* and *Abhishanga* (such as *Kama*, *Krodha*, *Chinta*, *shoka*, *Bhaya* etc.) and *Aghata*. All these factors lead to vitiation of *Vata dosha*, particularly *Pranavata* being seated in *Murdha* (brain) from where it executes its

functions and has direct relationship with *Manovikara*. *Prakopa* of *Pranavata* leads to the further vitiation of *Vyanavata* that ultimately leads to increased *Gati* of *Hridaya* and hence it result in rise of blood pressure. Similarly vitiation of *Apana Vata* by its *Pratilomagati* leads to *Sanga* of *Mala* that will ultimately cause *Mutravaha srotodusti* and that is the major cause in the pathogenesis of hypertension.

Nija Hetu: *Mithya ahara* and *Vihara* and other *Tridosha prakopaka nidana* cause the vitiation of *Tridosha (Vata, Pitta and Kapha)*, especially *Vata vrudhi* in their respective habitats. This vitiated *Vata* hampers the normal functions of *Agni* resulting in *Agnivaishamyia*, leads to production of *Ama* which subsequently causes the *Rasagnimandhya*. Continuous indulgence in etiological factors leads to disease of *Rasa Raktavaha srotas*, which leads to *Khavaigunya* subsequently *Doshadushya sammurcchana*. This *Amarasa*, when accumulates in *Rasavahi srotas* leads to excess in functions of *Vyanavayu*, as *Vyanavayu* has to work against *Avarodha* produced by *Ama*. So, it can be understood that *Vatadosha prakopa* is mainly due to *Sangatmaka vikrti* of *Rasavaha srotas*.

Manasika Hetu: *Chinta* and *Shoka* indirectly lead to vitiation of *tridosha* mainly *Pitta* and *Vata*, which may affect the *Hridaya* and the influence the blood pressure.

Samprapti Ghataka

<i>Dosha</i>	<i>Vata (Vyana vayu) pradhana Tridosha</i>
<i>Dushya</i>	<i>Rasa and rakta</i>
<i>Srotas</i>	<i>Rasa, Rakta and Manovaha</i>
<i>Sroto dusti</i>	<i>Sanga, Vimarga gamana</i>
<i>Udbhava sthana</i>	<i>Amashaya samuthana</i>
<i>Agni</i>	<i>Jataragni vaishamyia</i>
<i>Adhisthana</i>	<i>Sarva srotas</i>
<i>Sanchara sthana</i>	<i>Dhamani</i>
<i>Swarupa</i>	<i>Chirakari</i>
<i>Prabhava</i>	<i>Kastasadhya</i>

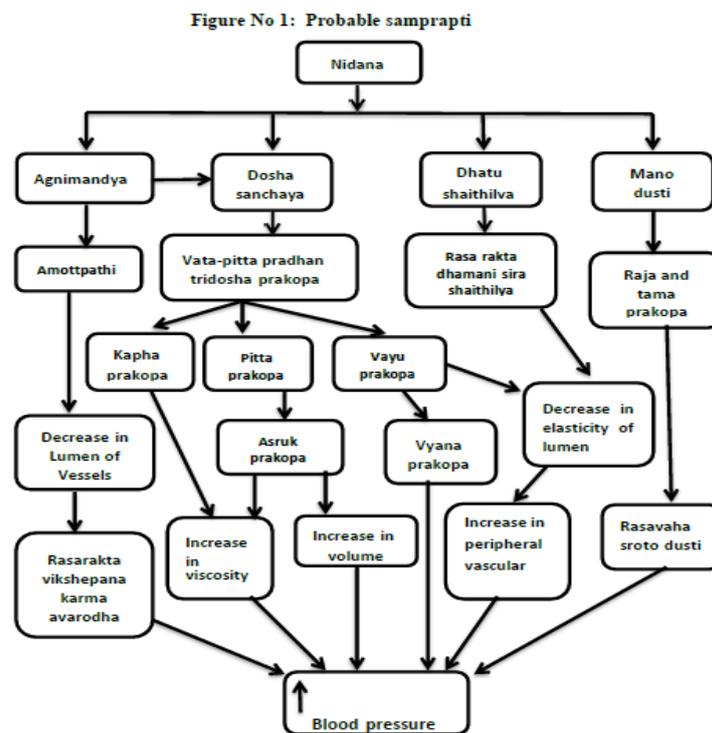


Figure 1: Probable Samprapti

DISCUSSION

Hypertension is correlated with *Vyanabala vaishamyā*. The disease *Vyanabala vaishamyā* seems to be produced from the vitiation of *Vyana vata*, one among the five types of *Vata*. *Vata* is a unique *Dosha*, differ from other two *Doshas* in many ways, *Pitta* and *Kapha* cannot be movable on its own and *Vata* is responsible for their movement and regulates their functions. In the pathological state also it has double way of vitiation due to *Dhatu kshaya* and due to *Margavarana*.

Vyana vata is responsible for circulation of *Rasa rakta dhatu*. Alteration in the circulation either due to obstruction of the channels or due to the increase of *Vyana vata* which produces increased force on the wall of the channels during the movement of *Rasa raktadhatu* and further leads to hypertension.

The circulation of *Rasa rakta* in body is the primary responsibility of *Vyana vata*, but heart being the site of *Sadhaka pitta* and *Avalambaka kapha*, the two *Doshas* also play significant role in the maintenance of blood pressure. The important factors for maintenance of cardiac output are heart rate, contractibility and blood volume. The heart rate and contractibility depend on the internal auto regulation of *Vyana vata*, *Sadhaka pitta* and *Avalambaka kapha* with the help of *Ojas*.

So understanding the etiology and pathology of hypertension knowledge of *Tridoshaja*, *Rasa*, *Rakta dhatu*, *Raktabhisarana*, *Hridaya*, *Dhamani*, *Rasa – Rakta vaha srotas*, *Ojas*, *Manas* are important.

As we know hypertension is multi factorial diseases, some other *Nidanas* also found in this present study like family history of hypertension, excessive *Katu amla lavana rasa pradhana ahara* etc.

Considering the *Nidana* for *Vyanabala vaishamyā* all *Dhatukshaya janya* and *Margavaroda janya nidanas* are considered for better understanding the pathology of *Vyanabala vaishamyā*.

Alteration in the circulation of *Rasa rakta dhatu* may occur due to

1. The obstruction of the channels either by the constriction or by the increased hardness of the blood vessels or due to loss of elasticity of the blood vessels
2. Aggravation of *Vyana vata* which increases *Rukshata* and *Kathinata* in vessel wall producing *sankocha* of the blood vessels.
3. Sometimes *Upachaya* inside the blood vessels reduces the inter passage of channels and causes *Sankochana* of passage.

So *Nidanas* for *Vyanabala vaishamyā* considered as *Nija* and *Agantuja hetus* for vitiation of *Vata dosha*. *Acharya Sushruta* described that *Medoroga* leads to *Vatavikaras*, excessive *Madhyapana* leads to *Ojo kshaya* further it affects *Hridaya*, *Mana*, *Indriya* etc may affect *Dosha*, *Dathu* and *Srotomula* of *Rasavahi srotas* leading to Hypertension.

Atilavana ahara leads to *Rakta dushti*, *Dosha sanchaya* and increases *Sharirika kleda*. *Ati dhumapana* causes *Bhrama*, *Indriya vikruti* and *Vata prakopa*

causes obstruction of vessels leading to increased peripheral resistance commonly associated with hypertension.

Explaining the *Samprapti* of *Vyanabala Vaishamy* by different way;

1. *Dhatukshayajanya nidanas* of *Vata dosha* causes *Rukshata* and *Kathinata* in the walls of blood vessel, producing *Sankocha* of blood vessels and further leads to hypertension.
2. The *Nidanas* also hampered the *Prakruta gati* of *Vata dosha* which is required for proper circulation of *Rasa rakta dhatu* which in turn causes hypertension.
3. *Margavarodha janya nidanas* of *Vata dosha* reduces the internal passage of channels and causes *Sankocha* of passage which further leads to hypertension.
4. *Agantuja karanas* like *Krodha*, *Chinta* leads to vitiation of *Vyana vayu* which ultimately leads to increased *Gati* of *Hridaya*. Hence it results in rise of blood pressure.

There is no specific *Lakshanas* mentioned for *Vyanabala Vaishamy*, even though some important symptoms are being mentioned like headache, giddiness, palpitation etc.

Headache: *Acharya Sushruta* has stated “*Vata drute nasty ruja*” that means any type of *Shoola* cannot occur without the vitiation of *Vata*. *Charaka Samhita* has included *Shirashoola* in 80 types of *Nanatmaja vatavyadhi*.

Further, in *Charaka Samhita* while explaining *Samanya samprapti* of *Shiro roga* mentions that *Prakupita vatadi dosha* causes *Dushti* of *Rakta* and then by localizing in *Shira* produce *Shiroroga* which includes *Shirashoola* also. In this way in *Shirashoola*, *Vata dushti* may be considered as a prime factor.

Giddiness/Bhrama: It may be symptom of hypertension. *Bhrama* is one of 80 types of *Nantmaja* diseases of *Vata*. *Vata* with excessive *Rajo guna* causes *Bhrama*. *Nidanas* like *Katu rasa pradhana ahara*, *Alpanidra*, *Chinta* are responsible for *Bhrama*.

Hriddrava/Palpitation: In *Charaka Samhita* it is included *Hrid dravata* due to *Rasakshaya*. Any *Dhatu kshaya* leads to *Vata prakopa*. *Nidanas* like *Katu*, *Lavana*, *Rasapradhana ahara*, *Alpanidra*, *Chinta* leads to *Rasa kshaya*, *Ojokshaya* which in turn causes vitiation of *Vata dosha* and further *Hridravata*.

Perspiration: *Ati sweda lakshanas* are observed mainly in *Medoroga*. When *Upastambhita nidanas* of *Vatadosha* are responsible for vitiation of *Vata* then may *Atisweda lakshana* can observe.

Klama/fatigue: The *Vata prakopa nidanas* leads to *Dhatu kshaya* and mainly *Rasa kshaya* causes *Klama*.

Blurring of vision/Tamo darshana: Feeling of black spots in front of eyes is called *Tamodarshana*. *Charaka*

Samhita has described *Tamodarshana* in *Rakta pradoshaja vikaras*; hence it appears due to *Srotorodha* in *Raktavahini sira*.

CONCLUSION

Thus, the present literary reveal that there is no direct description of hypertension in Ayurveda. But on the basis of theoretical ground Ayurveda have been tried to correlate the hypertension with *Raktagata vata*, *Pittavruta vata*, *Siragatvata*, *Dhamani pratichaya*, *Vyanabala vaishamy* etc.

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