Understanding Essential Hypertension through Ayurveda – A Review

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ABSTRACT
Hypertension is called a silent killer because it rarely provides symptoms before it damages the heart, brain or kidney. It is an important public health challenge in both economically developing and developed countries. Ayurvedic texts don’t provide any direct reference regarding essential hypertension (EHT), but the disease can be explained on the base of Ayurvedic principles viz. Dosha, Dushya, Srotas etc. The present study was undertaken to evaluate the factors responsible EHT along with its Samprapti as per Ayurvedic line of thinking and to explain the disease in terms of Ayurveda. It was found that EHT is a psychosomatic and Tridoshaja disease having the dominancy of Vata Dosha. It is mainly a disease of Raktavaha Srotas in which Rasa, Rakta and Manas are the Pradhan Dushyas.

Key words: Essential hypertension, Ayurveda, Dosha, Rakta.

INTRODUCTION
Hypertension is called a silent killer because it rarely provides symptoms before it damages the heart, brain or kidney. [1] It is estimated that 600 million people are affected worldwide with hypertension. By the year 2025, approximately 1 in 3 adults aged over 20 years, totally 1.56 billion people worldwide, will have hypertension. [2] The disease essential hypertension (EHT) is neither denoted in Samhita nor in any Samgraha granthas. The term hypertension was coined after the invention of sphygmomanometer, however before that about its existence, one can trace the pathway on the tract of symptomatology. Ayurveda is such a science which has specific principles on the basis of which it has developed. Its diagnostic approach is based on the involvement of Dosha, Dushya, Srotas etc. for particular disease. There is no any disease in Ayurveda which completely resembles with hypertension but under certain headings the nomenclature is possible by taking the support of sign and symptoms.

Many scholars have tried to give the appropriate answer to the disease but still no theory is complete and acceptable. Most of the scholars have explained plenty of theories which are based on a single angle of thinking like Siragta Vata [3] Raktagata Vata [4], Avritta Vataroga [5], etc., but hypertension can’t be correlated completely with above mentioned diseases. So, it is a great problem to find a disease similar to hypertension in Ayurveda.

AIMS AND OBJECTIVES:
1. To find out the factors involved in hypertension as per Ayurvedic line of thinking
2. To explain disease hypertension in terms of Ayurveda

LITERATURE REVIEW:
Historical review:
There are many references in ancient texts about hemodynamic system including Hriday (heart), Sira and Dhamani (blood vessels) which are commonly affected by the high blood pressure. In
Rigveda references indicating the knowledge of Hriday are present. [6] In Samhita, references concerned to Hriday, Sira and Dhamani are found. [7] According to Charaka ‘Vikshepana’ (circulation) of Rasa Dhatu is the Karma of Vyan Vayu [8] and Hriday. [9] Further Sushruta has described the circulation process in detail.[10] Chakrapani opined that circulation is a continuous process and during the circulation with Rasa Dhatu, Rakta and other liquid Dhatus also circulate all over the body. [11]

As the science advanced the Ayurvedic scholars also tried to find out the cause and the name of the disease – hypertension. Some of them are: [12]

<table>
<thead>
<tr>
<th>Concept</th>
<th>Name of the scholars</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhamani Prapurana</td>
<td>Saraswati G.N.</td>
<td>1935</td>
</tr>
<tr>
<td>Raktagata Vata</td>
<td>Upadhyaya Y.N.</td>
<td>1950</td>
</tr>
<tr>
<td>Siragata Vata</td>
<td>Chaturvedi G.N.</td>
<td>1962</td>
</tr>
<tr>
<td>Avrittta Vataroga</td>
<td>Sharma R.K.</td>
<td>1966</td>
</tr>
<tr>
<td>Vyan Vata</td>
<td>Triguna B.</td>
<td>1974</td>
</tr>
<tr>
<td>Dhamani Pratichay</td>
<td>Athawale A.D.</td>
<td>1977</td>
</tr>
<tr>
<td>Raktagata</td>
<td>Sharma P.V.</td>
<td>1993</td>
</tr>
</tbody>
</table>

According to Acharya Charaka, In case of an unknown disease, the physician should try to understand the nature of the disease through Dosha, the site of manifestation, etiological factors and then should initiate the treatment. [13] So, it becomes necessary to study the factors which are involved in hypertension.

Factors involved in essential hypertension:

**Dosha:**

**Prana Vayu:**

In modern science, the functions of nervous system have been described similar to description of the Prakriti Prana vayu. ‘Hridayadrika’ function of Prana vayu can be correlated with the heart rate controlling function of brain originated nerves. [14] Furthermore, in spite of situated in brain (medulla), vasomotor center controls the blood pressure by the vasoconstrictor and vasodilator nerves; similarly Prana vayu also controls the regulation of blood pressure by controlling Vyana vayu which has been believed to function like constriction – dilatation of the vessels. So any pathology of Prana vayu can cause abnormality of heart as well as vessels.

**Vyana Vayu:**

Vyana Vayu is said to be responsible for various kinds of movements in the body. [15] With the help of Vyana Vayu, heart contracts and circulates the blood (Rasa Rata Dhatu) continuously all over the body. The contraction and dilatation of the vessels are also governed by Vyana vayu through the heart. So, it suggests the involvement of Vyana vayu on regulation of blood pressure.

**Samana Vayu:**

According to Sharangadhara after the digestion process ‘Samana’ helps in the transportation of Rasa in to the heart and from heart it circulates in the whole body. [16] Therefore, conclusion can be made that Samana may have an important role in the circulation.

**Apana Vayu:**

Mutra and Purisha have been considered as Mala in Ayurveda, which can produce disease if not excreted at regular intervals. It is clear that there is some effect of excretion of Mutra on regulation of the body fluid. Vitiation of Apana vayu hampers the excretion of the Mutra, so the body fluid level becomes imbalanced, which may affect the maintenance of normal blood pressure. From the above fact it can be concluded that Apana vayu also plays a role in regulation of normal blood pressure.

**Sadhaka Pitta:**

It is difficult to explain Sadhaka pitta in terms of modern physiology; however functions of adrenaline do possess some similarity with that of Sadhaka pitta. [17] In cases of fear, anger and such other feelings, the adrenal gland is stimulated and increases the secretion of adrenaline; which in turn affects the heart rate and cardiac output, and ultimately raises the blood pressure. Thus, Sadhaka pitta can be considered as an important factor in the normal physiology of blood pressure.

**Avalambaka Kapha:**

The normal rhythmicity, conductivity, excitability, contractility, tone and refractory period of cardiac muscles can be correlated with Avalambaka karma of Hridaya by Avalambaka kapha. [18] Thus, it keeps heart in a healthy state and enhances its working capacity of continuous pumping action. Therefore, it can be said that Avalambaka kapha has some role on regulation of blood pressure.

**Dushya:**

In circulatory system Rakta, Rasa and Sanjnya are the common entities which circulate all over the body and Doshas vitiate in their Srotasas after particular Nidana Sevana to manifest Mada, Murchha and Sanynasa [19] which are the complications of essential hypertension. Some scholars also opined that Meda is also one of the factor which gets vitiated in EHT but this fact is not supported by other scholars. Therefore it can
be concluded that in essential hypertension Rakta, Rasa and Manas are the important factors.

**Agni:**
The Agni is the important factor in the pathogenesis of all the diseases. In EHT the Agni vitiation is occurring at 2 levels
1. Jatharagni Mandya
2. Dhatwagni Mandya - Rakta Dhatu
The psychological factors interfere in the digestive power of Agni along with the Atimatrashana (excessive diet), Viruddhashana (intake of food having opposite properties), Adhyashana (intake before the digestion of previous food) which are the main culprits found in EHT.

**Manas:**
Hypertension is considered as a psychosomatic disorder also. In Ayurveda Prajinaparadha and Asatmyaindriyartha samyoga are consider as the root causes for every disease, which indicate the involvement of psyche. Manas Bhavas like Chinta (worry), Krodha (anger), Bhaya (fear) etc. play an important role in the etiopathogenesis, progression and prognosis of disease as well as response to the treatment of the disease – hypertension. This fact reveals that Manas is also involved in EHT and the disease should be considered as psychosomatic.

**Srotas:**
In the context of blood pressure Rasavaha and Raktavaha Srotasas are important as they are related with ‘Rasa-Rata Samvahana’. Also essential hypertension is a psychosomatic disorder, so role of Manas is also very important in this case. Hence, it can be said that Rasavaha, Raktavaha and Manovaha are the Srotasas which are affected in hypertension.

**SAMPRAPTI (PATHOGENESIS OF HYPERTENSION IN AYURVEDA):**
The pathogenesis of hypertension takes place at both physical and psychic level one at a time or simultaneously depending upon the Dosha Dushya Sammurchhana. At physical level, due to etiological factors, the Vata Pradhana Tridosha gets vitiated. Simultaneously due to the Dhatwaisamhanyakara properties of etiological factors, Agnidushti, Dhatudushti (Rasa and Rakta) and Ama production occurs leading to Khavaigunya. The Ama production results into Strotorodha (Rasvaha and Ratavaha) and thus blocks the normal circulation of Vyana Vayu resulting into Margavarodha. This obstructed Vyana Vayu leads to forcible blood flow in the blood vessels causing increased resistance. This further guides the already vitiated Doshas to get aggravated and produce symptoms of hypertension.

The above said Samprapti is schematically represented as follows

**Samprapti Ghataka (Factors in pathogenesis):**
- **Dosha** - Vata (Prana, Vyana, Apana) - Pitta (Sadhaka) - Kapha (Avalambaka)
- **Dushya** - Rasa, Rakta, Manas
- **Agni** - Jatharagni Mandhya
- **Janita Ama,** Rasa, Rakta Dhatvagni

**CO-RELATION WITH AYURVEDIC DISEASES:**
EHT can be co-related with many diseases mentioned earlier. Comparison of these diseases on the basis of symptomatology is given as below:
Raktagata Vata: [21]
The symptoms like Santapa (irritability), Aruchi (anorexia), Bhrama (giddiness) are found commonly in Raktagata Vata and EHT

Siragata Vata: [22]
The symptoms of Siragata Vata like Manda shotha (mild oedema), Sira Purnata (increased volume in blood vessels) and Sira Spandan (increased pulsation in the blood vessels) etc. can be correlated with EHT

Raktavriddhi: [23]
The symptoms of Raktavriddhi like Raktapitta (bleeding disorders), Tamapravesha (fainting), Raktnetra (redness of eyes), and Sirapurnata are found identical with EHT.

Avritta Vata: [24]
The symptoms of Pittavritta Vata viz. Daha (burning sensation), Bhrama, Tama etc. are said to be present in EHT. Bhrama, Avasada (exhaust), Daurbalya (fatigue) etc. symptoms of Pittavritta Udana and Shwasa (dyspnoea), Hridroga (cardiac disorder) etc. symptoms of Pranavritta Udana and Shwasa (dyspnoea), Hridroga (cardiac disorder) etc. symptoms of Pranavritta Udana are found similar to EHT. Furthermore the symptoms like Shotha and mandala are also said to be present in EHT.

Raktashrita Vikara:
The list of Ratkarshrita Vikaras quoted at Vidhisonitiya Adhyaya of Charaka Samhita consists 41 diseases. If one concentrates on these symptoms the surprising similarity between the symptoms of EHT and Raktashrita vikaras can be observed. Sinking

This can be grouped as follows

<table>
<thead>
<tr>
<th>S. No</th>
<th>Symptoms of Raktadushhti</th>
<th>Symptoms of EHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shirashila</td>
<td>Headache</td>
</tr>
<tr>
<td>2</td>
<td>Tamodarshana</td>
<td>Fainting / Blackouts</td>
</tr>
<tr>
<td>3</td>
<td>Tandra</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>4</td>
<td>Gurugatrata</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Atidaurbalya</td>
<td>Fatigue</td>
</tr>
<tr>
<td>6</td>
<td>Klama</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Krodhpracharusata</td>
<td>Anger</td>
</tr>
<tr>
<td>8</td>
<td>Buddhisammohoa</td>
<td>Decreased memory power</td>
</tr>
<tr>
<td>9</td>
<td>Mada</td>
<td>Irritability</td>
</tr>
<tr>
<td>10</td>
<td>Santapa</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Agnisado</td>
<td>Anorexia</td>
</tr>
<tr>
<td>12</td>
<td>Aruchi</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Tikramodgara</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Akshiraga</td>
<td>Retinal hemorrhage</td>
</tr>
<tr>
<td>15</td>
<td>Pramilaka</td>
<td>Blurringvision</td>
</tr>
</tbody>
</table>

CONCLUSION
Hypertension is mainly a Tridoshaja Vyadhi having the dominancy of Vata Dosha. Rasa, Rakta and Manas are the chief Dushyas of the disease. It is primarily a disease of Raktavaha Srotas. The disease essential hypertension mostly correlates with the Raktashrita vikaras.

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9. Ibid. 7, sutrasthana 30/10: 185.
11. Ibid. 8.
13. Ibid.7, sutrasthana, 18/46: 108.
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15. Ibid. 14.
22. Ibid. 7, Chiitsasthana, 28/36: 617.
23. Ibid. 14, Sutrasthana, 19/6: 149.