CONCEPTUAL STUDY OF EFFICACY OF RAKTADABASHAMAK GHANA VATI IN THE MANAGEMENT OF ESSENTIAL HYPERTENSION: A REVIEW

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ABSTRACT
Hypertension is one of the most challenging diseases in current era. The prevalence rate in whole world is increasing day by day. The standard drug therapy used in modern science has its own adverse effects on long term usage, which makes other treatment systems an important alternative to the conventional treatment. In Ayurvedic literature various drugs are described which have the properties that can control blood pressure effectively. Keeping this view in mind a hypothetical compound has been made containing jatamansi, gokshur mulia, Ayurveda has a role in the treatment of HTN in modern medical science, the physicians should not be ashamed of this fact. This work is just based on finding facts through fundamental studies to provide a basis for application of Raktadabashamak Ghana vati in the management of essential hypertension.

Keywords: Ajuna, Brahmi, Essential hypertension, Gokshur, Hypertension, Jatamansi, Raktadabashamak Ghana vati, Tagara, Vacha

INTRODUCTION
The current era has been described as the age of anxiety and stress. This stress and strain of day to day life and sedentary lifestyle plus unhealthy food habits has given rise to various lifestyle related disorders of which hypertension is of utmost significance. Hypertension or high blood pressure, sometimes called arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure above 140/90 mmHg is mainly considered as hypertension1. It is common, asymptomatic, readily detectable, usually easily treatable, and it often leads to common complications as cardiovascular disorders, cerebrovascular accidents, etc.In. In India overall prevalence have been found 29.8% [27.6% in rural parts & 33.8% in urban parts]. ICMR & AIIMS study had declared India as Nation of hypertension1. This increasing prevalence of hypertension is attributed to population growth, ageing and behavioral risk factors such as unhealthy diet, increased intake of salt, excessive use of alcohol, smoking, physical inactivity, excess weight & exposure to persistent stress. Although there has been widespread dissemination of knowledge of HTN then also it is poorly treated in most of the population including India due to lack of awareness which leads to no or late diagnosis and if diagnosed most patients are on irregular treatment. Along with these factors the lifelong treatment of HTN in modern medical science has its own side effects. Thus, to attain and maintain good health, here comes the role of Ayurveda.

On the basis of etiology, hypertension is classified into 2 types2:
1) Primary hypertension — it is also called as essential hypertension. There is no specific underlying cause of this type. It is present in more than 95% of cases. Various systems attributable in these type of patients are peripheral and central adrenergic, renal, hormonal, and vascular. Genetic predisposition, increased salt sensitivity (60% of hypertensives), environmental factors, heavy consumption of alcohol, smoking, lack of exercise and stress play an important role in this type. 2) Secondary hypertension – it is mainly due to consequence of a specific disease or any sort of abnormality such as renal disease, endocrine diseases, due to intake of certain drugs, etc.

Regulation of normal Blood pressure
The magnitude of the arterial pressure depends on two fundamental hemodynamic variables: cardiac output and total peripheral resistance. Two mechanisms which are considered in essential hypertension are: Renal retention of excess sodium (resetting of pressure natriuresis) and Vasoconstriction and vascular hypertrophy (due to increased release of vasoconstrictor agents e.g., rennin, catecholamines, endothelin; or increased sensitivity of vascular smooth muscle to constricting agents)3. Hormones like epinephrine, nor epinephrine, vasopressin, ADH also increase blood pressure by either heart rate or vasoconstriction or by increasing the blood volume4. 

Ayurvedic view
Hypertension being an instrumental based disease, Ayurvedic texts provides no straight reference. Acharya Charaka has given a guideline to understand a new clinical entity he said - naming of disease is not essential, importance lies in the removal of disease, thus the physician should not be ashamed of this fact and try to comprehend responsible doshas and treat them accordingly7. Understanding EHT from the perspective of tridoshas principle of Ayurveda it is found that it is a vata pradhan tridosha vyadhi. Vittiated Vata Dosha is considered as the main reason because dhatu (rasa) gati or vikshepana is done by vayu itself8.
Pitta and kapha compliment the effect of vitiated vata and add to progression of disease. Considering the psychosomatic aspect of hypertension it can be said that manas Dosha Raja and Tama are also important factors in EHT since chinta, bhaya, krodha etc manas bhavas are aetiological factors in EHT. Dushyas Rasa, Rakta (whole blood) dhatu play important role in pathogenesis of the hypertension. The symptomatology quoted under Raktapradahaja Rogas by Acharya Charaka almost coincides with signs and symptoms of essential hypertension among those Andira, Shirahasshoola, Bhrama, Buddhisharumoha, Klama, Arati, Krodhaprachurata, and Akshiraga are the common symptoms. Thus Rakta dushti is the common factor which always gets involved in EHT.

Table 1: pharmacological properties and actions of proposed drugs According to Ayurvedic literatures

<table>
<thead>
<tr>
<th>Drug</th>
<th>Rasa (taste)</th>
<th>Guna (property)</th>
<th>Virya (potency)</th>
<th>Pipaak (metabolism)</th>
<th>Specific action</th>
<th>Action on Doshas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jatamansi (Nordostachys jatamansi)</td>
<td>Tikta, Kashiya</td>
<td>Laghu &amp; Snigdha</td>
<td>Shita</td>
<td>Katu</td>
<td>Manasdosa-har</td>
<td>Tridoshishamak</td>
</tr>
<tr>
<td>Gokshur (Tribulus terrestris)</td>
<td>Madhur</td>
<td>Guru &amp; Snigdha</td>
<td>Shita</td>
<td>Madhur</td>
<td>Mutral</td>
<td>Vaaptishashakam</td>
</tr>
<tr>
<td>Arjuna (Terminalia arjuna)</td>
<td>Kashiya</td>
<td>Laghu</td>
<td>Shita</td>
<td>Katu</td>
<td>Hridya</td>
<td>Kaphapitishashakam</td>
</tr>
<tr>
<td>Brahmi (Bacopa monnieri)</td>
<td>Tikta</td>
<td>Laghu</td>
<td>Ushna</td>
<td>Katu</td>
<td>Medhya</td>
<td>Kaphavaatshamak</td>
</tr>
<tr>
<td>Vacha (Acorus calamus)</td>
<td>Tikta, Katu</td>
<td>Laghu, Tikshna</td>
<td>Ushna</td>
<td>Katu</td>
<td>Medhya</td>
<td>Kaphavaatshamak</td>
</tr>
<tr>
<td>Tagara (Valeriana walltchii)</td>
<td>Tikta, Katu</td>
<td>Kashiya</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
<td>Kaphavaatshamak</td>
</tr>
</tbody>
</table>

Jatamansi is medhya (brain tonic) and vaatnadishamak (sympatholytic) due to these actions it relaxes brain and nervous system and causes vasodilation, its chemical constituent Jatamansone is useful in cardiac arrhythmias. Various clinical studies have shown its anti-hypertensive effect. Gokshur is well known for its mutral (diuretic) effect apart from this it also used in Hridroga (cardiovascular disorders) in Ayurveda. Clinical studies have shown its anti-hypertensive, anti-depressant and anxiolytic activities. Arjuna has been said as Hridya (cardio tonic) in Ayurvedic texts. It provides strength to cardiac muscles and stroke volume which in turn decreases heart rate, the flavonoids components present in the bark of Arjuna tree have anti-oxidant properties, so Arjuna bark powder is beneficial in ischemic heart diseases associated with oxidative stress. Studies have proven its cardio protective effects. It also shows anti-coagulant property which can be used in coronary artery diseases and thus can reduce hypertension of cardiac origin.

Brahmi in Ayurvedic medicine system is used as a powerful medhya (brain tonic) drug as well as a memory enhancer. It is bala (provide strength) to vaatnadisannathan (nervine tonic). Brahmi extract bacosides have shown anxiolytic, anti-depressant, anti-stress and anti-oxidant action. Vacha is also used as medhya drug in Ayurvedic medicine moreover, due to its tikshna guna (sharp) it has a lekhanya action which is beneficial in high lipid profile. Studies have shown its blood pressure lowering and vascular modulator effects.

Tagara is mainly used in Ayurvedic medicine to treat nervousness, insomnia and heart palpitations, shiro rogas (headaches) and rakta vikaras (blood disorders). Valerenic acid present in the herb has been shown to inhibit the breakdown of neurotransmitter GABA which results in sedation. Studies have also shown its anti-hypertensive, anxiolytic effect.

CONCLUSION

The formulation of drugs selected above for Raktadashashamak Ghana Vati is very effective in treating hypertension as this vati manages all the systems which are pathologically involved in essential hypertension. On reviewing Table 1. It can be seen that this formulation has vaat pradhan tridoshshamak action hence it is useful in essential hypertension which is a vaat pradhan tridoshaja vyadh. Jatamansi relaxes brain and nervous system therefore can be very useful in stress induced hypertension and insomnia, which is a common symptom in hypertension. Gokshura due to its diuretic action thus; it is beneficial in hypertension associated with salt and water retention. Arjuna is very beneficial as a cardio protective and increases stroke volume which decreases heart rate and decreases blood pressure. Brahmi is a medhya (brain tonic) drug and due to its anxiolytic and anti-depressant action has an anti-hypertensive effect as anxiety and depression are significant contributory factors in essential hypertension. Vacha due to its tikshna guna has hypolipidemic action reduces blood pressure as high cholesterol significantly increases blood pressure by increasing peripheral resistance. Tagara also has anxiolytic and anti-hypertensive effects. Also it manages a headache which is associated symptom with hypertension. Thus, all the drugs used in this hypothetical compound have anti-hypertensive effects due to different mechanisms which can effectively reduce essential hypertension.

Considering all the physiological and pathological factors of essential hypertension in both Ayurvedic and modern perspective, a combination drug named as Raktadashashamak Ghana vati which has vaat shakam (neural regulation of blood pressure), ekhanyaa (regulates high cholesterol), medhya (stress reliever), hridya (cardio tonic) and mutral (diuretic) properties is very effective in treating hypertension. Currently the drug is under clinical trial in Rishikul Ayurvedic College, Haridwar, Uttarakhand. It has been tried in 20 patients and showed very good results in cases of mild to moderate hypertension.
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