ASSESSMENT OF A HERBAL FORMULATION IN THE MANAGEMENT OF ESSENTIAL HYPERTENSION

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ABSTRACT

Hypertension is one of the major causes of cardiovascular morbidity and mortality worldwide. It is a global health problem affecting the people of different ethnicity and ages around the world. An estimated 1.13 billion people worldwide have hypertension, most (two-thirds) living in low and middle income country¹. According to WHO (2015) the overall prevalence of hypertension in India was 24.2% and 22% among the men and women respectively. Hypertension is called a silent killer, non-communicable chronic disease because it rarely exhibits symptoms before it damages vital organs like kidney, brain or heart. In Ayurveda there is not a single disease which resembles with hypertension but physician should understand the disease through dosha, dushya, samprapti and initiate the treatment. A lot of potent modern antihypertensive drugs are available but none of them are free from untoward side-effects. In this research paper a holistic approach is made and a herbal formulation in the form of ghanvati is prepared. Proper planning, preparation and medication using that ghanvati as per Ayurvedic guidelines will be observed with respect to its clinical effect on essential hypertension.

Keywords: Essential hypertension, Ghanvati

INTRODUCTION

Hypertension is a major cause for the morbidity and mortality worldwide and is one of the major public health challenges. It is an asymptomatic medical condition in which systemic arterial blood pressure is elevated beyond the normal value. According to 2010 guidelines of ‘European Society of Cardiology’ and the ‘European Society of Hypertension’ hypertension is defined as office SBP values ≥140mm of Hg and DBP values ≥90 mm of Hg². Prevalence of hypertension is increasing globally and currently more than 1 billion people have hypertension. Non communicable disease risk factor collaboration reported that number of adults with high blood pressure increased from 594 million in 1975 to 1.13 billion in 2015³. It is estimated that by 2025, the global targets for non communicable diseases is to reduce the prevalence of hypertension by 25%⁴.

As mentioned earlier hypertension is silent killer because it typically has no warning signs and symptoms and many people do not know they have it. A small amount of people may experience symptoms such as dullness, headache, vomiting, dizzy spells and more.
frequently nose bleeds. These symptoms usually do not occur until blood pressure levels have reached a severe or life threatening stage.

Etiology and types:
In majority of patients with high hypertension, the cause is unknown and is classified as primary or essential hypertension. A small portion of patients have a specific cause of their high blood pressure, which is classified as secondary hypertension. Less than 10% of patients with high blood pressure have secondary hypertension and most common cause is associated with kidney impairment such as chronic kidney disease or renovascular disease.

The classification of hypertension in adults (18 years and older) is based on the average of two or more properly measured blood pressure readings from two or more clinical visits. Blood pressure is classified into one of the 4 categories; normal, prehypertension, stage 1 and stage 2 hypertension.

In Ayurveda there is no description of a single disease which can exactly resemble with hypertension. It can be assumed very close to the following entity:
1. Raktgatavata
2. Pittavrittavata

Hypertension is a vata dominant tridoshaj vyadhi and it’s pathophysiology is explained in terms of dosha, dushya and mala with their kshaya, vriddhi and prakopa conditions. Therefore to alleviate the side effects of antihypertensive drugs an approach has been made in this paper.

AIM AND OBJECTIVES
1) To assess the efficacy of a herbal formulation in the management of essential hypertension.
2) To find out an effective, low cost and safe remedy to resist the essential hypertension.

IMPORTANCE OF PRESENT STUDY
1) Due to changing life style and food habits etc. there is increased incidence of hypertension in practice so an effort is made to find a solution for it through Ayurveda.
2) An attempt is made to clinically evaluate the efficacy of prepared ghanvati in the management of essential hypertension.

MATERIAL AND METHODS
• Selection of sample:
Patients were selected randomly irrespective of their sex, religion, occupation etc.
• Source of patients:
10 Clinically diagnosed patients of essential hypertension, registered in OPD/IPD of Pt. Khushilal Sharma Govt. hospital, Bhopal, who fulfill inclusion criteria, were selected.
• Drug and dose:
Drugs namely Sarpagandha, Jatamansi, Sankhpushpi, Arjuna and Ashwagandha were taken in ratio 1:1:2:2:2 by weight respectively and ghanvati is prepared by classical method.
• Plan of study:
Modern medication of patients taking allopathy medicine was stopped during the study period. 500 mg of ghanvati is given twice a day before meal.
• Duration of study: 30 days

INCLUSION CRITERIA OF PATIENTS
1) Patients of either sex between the age of 40 years to 65 years.
2) Patient having elevated blood pressure with or without clinical symptoms as described in ayurvedic and modern medicine.

Patients having elevated blood pressure either systolic or diastolic or both are included as mentioned below:
- SBP ≤ 159 mmHg & ≥140 mmHg
- DBP ≤ 99 mmHg & ≥90mmHg

EXCLUSION CRITERIA OF PATIENTS
1) Patients having Renal or Hepatic disease.
2) Complicated hypertensive case e.g. cardiovascular disease.
3) Pregnant women should be excluded.
4) Diabetic patients with uncontrolled sugar condition.
5) Patients having chronic systemic illness.
6) Patients not willing for written consent

CRITERIA FOR WITHDRAWAL
1) During the course of trial if any serious condition or any serious disease is found in patient.
2) Patients herself/himself want to withdraw from the clinical trial.
PARAMETERS FOR ASSESSMENT
1. Systolic blood pressure
2. Diastolic blood pressure

The assessment was done on the basis of change in above mentioned objective parameters. The change in systolic and diastolic blood pressure was observed on every 7th, 15th and 30th day.

PATIENT WISE OBSERVATIONS DURING THE STUDY

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>Sex</th>
<th>BT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SBP</td>
<td>DBP</td>
</tr>
<tr>
<td>1.</td>
<td>40</td>
<td>M</td>
<td>142</td>
<td>96</td>
</tr>
<tr>
<td>2.</td>
<td>65</td>
<td>M</td>
<td>141</td>
<td>90</td>
</tr>
<tr>
<td>3.</td>
<td>55</td>
<td>F</td>
<td>140</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>51</td>
<td>M</td>
<td>140</td>
<td>96</td>
</tr>
<tr>
<td>5.</td>
<td>61</td>
<td>M</td>
<td>142</td>
<td>98</td>
</tr>
<tr>
<td>6.</td>
<td>62</td>
<td>F</td>
<td>159</td>
<td>96</td>
</tr>
<tr>
<td>7.</td>
<td>65</td>
<td>M</td>
<td>158</td>
<td>100</td>
</tr>
<tr>
<td>8.</td>
<td>63</td>
<td>M</td>
<td>143</td>
<td>90</td>
</tr>
<tr>
<td>9.</td>
<td>50</td>
<td>M</td>
<td>150</td>
<td>90</td>
</tr>
<tr>
<td>10.</td>
<td>60</td>
<td>F</td>
<td>149</td>
<td>90</td>
</tr>
</tbody>
</table>

(Age taken in Year and Blood pressure in mmHg)

RESULT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean</th>
<th>MD</th>
<th>%Relief</th>
<th>SD</th>
<th>SE</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic BP</td>
<td>146.40</td>
<td>123.00</td>
<td>23.400</td>
<td>15.98%</td>
<td>9.477</td>
<td>2.997</td>
</tr>
<tr>
<td>Dystolic BP</td>
<td>94.600</td>
<td>79.200</td>
<td>15.400</td>
<td>16.27%</td>
<td>5.967</td>
<td>1.887</td>
</tr>
</tbody>
</table>

Interpretation:
Effect of herbal formulation on blood pressure (stage 1) reveals that before treatment mean score on systolic BP was 146.40 with SD ±7.260 which was bought down to 123.00 with SD±11.595 after treatment, which showed significant result given at 95% CI and P-value <0.0001.

Effect of herbal formulation on dystolic BP reveals that before treatment mean score on BP was 94.600 with SD±4.222 which was bought down to 79.200 with SD±6.877 after treatment, which shows extremely significant result given at 95% CI and P-value<0.0001.

DISCUSSION

DISCUSSION ON SAMPRAPTI

According to classical literature of Ayurveda, Vata is prominent dosha in this disease, circulating rakta (rasa-rakta complex) is main dushya. Pitta lakshans are also seen because of association of rakta with pitta (ashraya – ashriya bhava). Ageing is one of the main factors for essential hypertension, vata is stated as dominant in old age and signs of premature ageing are mentioned under pitta prakriti. Agnidushti is principle source of every disease which results in agnishambha results in ama formation. Agnishambha gives rasa raktadushti as a result more and more vikruta kapha is produced as kapha is mala of rasa dhatu. Excessive production of vikruta kapha increases viscosity gives rise to atherosclerosis or dhamni uplepa which is factor for hypertension and comes under kaphaja nanatmaja vikara. Atherosclerosis and aggravated vata gives repeated spasm resulting in increased peripheral resistance to circulating fluid. Hence hypertension can be assigned as tridoshaj vyadhi with predominance of vata and pitta.
DISCUSSION ON MODE OF ACTION OF COMBINATION

Prominent rasa of Sarpagandha, Jatamansi and Ashwagandha is tikta which will act on rakta, rasa dhatu and their srotas. It reduces the ama and thereby viscosity of rasa decreases which results in proper rasa rakta vikshepana process. Their ushna veerya property causes amapachan and vata shamak karma. Both (Sarpagandha and Jatamansi) have effect of nidrajan and raktabhar shamak.

Whereas Sankhpushpi possess tikta rasa which has aampachana and shrotoshodhana property which decreases blood viscosity and check atherosclerotic changes. Prominent snighda guna in Sankhpushpi has vatashamak property and normal rakt rasa samvahana. Prominent madhura vipaka and sheet veerya possess pittashamaka and check raktadushti due to aashrayaaashriya bhava. Sankhpushpi has rasayana, medhya, sangyasthpana, basti shodhaka and mridurechaka property that helps in vasodilation and lowers the BP.

Arjuna twak has kashaya rasa, rukshaguna, sheeta veerya and katu vipaka. Due to kashaya, ruksha and laghu guna, kaphanasht karma is done. Rasayana, shleshma upshoshaka and lekhana property of drugs are helpful to check the atherosclerotic changes. Hence samprapti vighatana by a combination of rasayana, medhya, hridya. rakta shodhaka and shleshma upshoshaka property may be helpful in finding management of the HTN without any hazard to body that rises in long duration of modern therapy.

CONCLUSION

The present study shows that herbal formulations may work effectively in the management of essential hypertension. Though this study is a pilot study with limited number of patients in a fix stipulated time, it shows the significant results in managing systolic BP and in dystolic BP. In order to establish the antihypertensive effect of this drug a broad spectrum study is required to establish its effect as per modern view and with scientific approach.

REFERENCES

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ABBREVIATIONS

HTN: Hypertension
SBP: Systolic blood pressure
DSP: Diastolic blood pressure
AT: After treatment
BT: Before treatment
SD: Standard deviation
MD: Mean difference
SE: Standard error
CI: Confidence interval

Source of Support: Nil
Conflict Of Interest: None Declared