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## Research Article

### EFFECT OF BRAHMYADI COMPOUND (BRAHMI, SHANKHAPUSHPI, JATAMAMSI, JYOTISHMATI, VACHA) ASHWAGANDHA CHURNA AND SHILAJATU VATI IN ESSENTIAL HYPERTENSION: AN OBSERVATIONAL STUDY

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#### Abstract

Hypertension (HTN) is one among the fiery health problems of the present era. Since it does not cause symptoms usually for many years until a vital organ is damaged. It is identified as the single most important risk factor in both coronary heart disease and cerebrovascular accidents. It may also directly lead to congestive heart failure and renal failure. The lifelong and palliative treatment of HTN in western medicine induces many side effects. Therefore to attain and to maintain good health, hypertensive patients are looking towards Ayurveda. Therefore, it is an important area for researchers and scholars of Ayurveda to investigate the possibility of managing HTN with drugs which have lesser side effects, especially considering the chronicity and lifelong nature of the disease. The present study was carried out on 50 patients of Essential HTN with brahmyadi compound, ashwagandha churna and shilajatu vati for a period of one month with milk as anupana. Observation was done before the treatment. 3 mid test assessments were done on 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day. Post test assessment was done on 30<sup>th</sup> day. Intervention revealed that 22 had marked improvement, 18 had moderate improvement, 7 had mild improvement and no improvement was noticed in 3 individuals.

**Keywords:** Essential hypertension, Brahmyadi compound.

## INTRODUCTION

HTN being a chronic illness constitutes an important public health challenge because of its prevalence and concomitant increase in the risk of cardiovascular diseases. In India 14 % of people suffer from hypertension<sup>1</sup> and majority of them have essential hypertension. It is estimated that 1 billion people are affected worldwide<sup>2</sup>. As most of the patients suffering from abnormally elevated blood pressure (BP) are asymptomatic; diagnosis is either missed or delayed. Being imperative to the health and longevity of man, the study of HTN continues to be one of the most intellectually stimulating challenges. In spite of increasing public awareness and rapidly expanding array of antihypertensive medications, HTN remains one of the most frequent risk factors for cardiovascular / cerebrovascular morbidity and mortality.<sup>3</sup> Modern style of living might have given man all comforts that he has craved for, but in the mean time it has a darker side too, and one of them is the increase in the incidence of life style disorders, to mention few are Obesity, Diabetes and HTN<sup>4</sup>. HTN is classified as either primary (essential) HTN or secondary HTN, about 90–95 % of cases are categorized as "primary HTN" which means high blood pressure (HBP) with no obvious underlying medical cause.<sup>5</sup> The remaining 5–10 % of cases (secondary HTN) are caused by other conditions that affect the other system such as kidneys, arteries, heart or endocrine system. Though direct references regarding HTN are not available in classical literature of Ayurveda, attempts are made to explain HTN

according to the Dosha and Dhātu involvement. Many academicians have postulated their views regarding understanding of HTN in Ayurvedic terms, though none of these names are universally accepted by the fraternity of Ayurveda. Following is the list of terms referred to essential HTN coined by many of the academicians.<sup>6</sup>

Raktagata Vata, Rakta Vikshepa, Siragata Vata, Avrita Vata, Raktachapa, Rakta Sampida, Vyana Bala, Dhamani Prapurnata, Rasa Bhara, Rakta Vriddhi, Dhamani Praticchaya, Rudhira Mada, Raktavata.

#### Aim and Objective

To evaluate the combined effect of Brahmyadi compound (Brahmi, Shankhapushpi, Jyotishmati, Jatamamsi, Vacha 1 Part each), Tab Shilajatu and Ashwagandha churna, in the management of Essential HTN

## MATERIAL AND METHODS

### Drug

Patients were selected from the O.P.D and I.P.D of Government Ayurveda Medical College and Hospital, Mysore, India. A total of 73 patients between the age group of 30 to 70 years, fulfilling the criteria for the diagnosis of the disease were registered for the study. Out of these, 23 patients dropped out of study and 50 completed the intervention. Data were collected as per the Performa of the case sheet. The study was an observational with pre and post test design.

**Ethical Clearance No:** 2504201105

### **Diagnostic Criteria**

#### **Primary Criteria**

The 7<sup>th</sup> report of Joint National committee on prevention, detection, evaluation and intervention of HBP were considered as the standard for the diagnosis of HTN2. (Table 1)

#### **Secondary Criteria**

Headache, Palpitation, Chest pain, Insomnia, Fatigue, giddiness

#### **Inclusion Criteria**

Patients of either sex between the age group of 30-70 years either treated or freshly detected cases of Essential HTN were selected.

Patient with Pre HTN and HTN stage 1 with or without symptoms were included for the study.

#### **Exclusion Criteria**

Patients suffering from any other systemic disorders which interfere with the course of the disease and intervention were excluded.

#### **Statistical Methods**

Descriptive statistics, Chi-square test, Contingency coefficient analysis, repeated measure ANOVA, Paired samples t-test using SPSS for windows software.

#### **Investigations**

Patients were subjected to routine investigations of blood, urine etc to exclude any other systemic disorders.

#### **Intervention**

- Brahmyadi compound (Brahmi, Shankhapushpi, Jatamamsi, Jyotishmathi, Vacha 1 part each) 5 g t. i. d after food with milk
- Ashwagandha churna 5 g t. i. d after food with milk
- Shilajitu vati 1 bid after food with milk.

**Duration:** 30 days.

Patients were advised for limited usage of salt, restricting the intake of fat rich food, quitting smoking and alcohol and managing stress levels.

#### **Assessment Criteria**

The assessment was done considering systolic, diastolic and mean blood pressure readings in all the 3 postures i.e. supine, sitting and standing at pre-test i. e. 0th day, 3 mid test assessments on 7th, 14th, 21st day respectively and post test on 30th day.

#### **Overall Assessment**

The overall assessment of the intervention was interpreted as reduction in SBP and DBP in the range of;

Marked improvement - SBP 30-40 mm of Hg and DBP up to  $\leq$ 15 mm of Hg

Moderate improvement - SBP 20-29 mm of Hg and DBP 11-14 mm of Hg

Mild improvement - SBP 10-19 mm of Hg and DBP 5-10 mm of Hg

No improvement - Reduction in SBP in the range of 0-9 mm of hg and DBP in the range 0-4 mm of Hg

The mean of both is taken and overall assessment is done.

### **OBSERVATION AND RESULTS**

#### **Pre-Test**

Out of 50 patients 23 fresh patients and 27 treated cases were noted. Fresh cases were observed with frequent measurement of BP and then intervention was started. In treated cases the earlier medication was withdrawn gradually and completely. After complete withdrawal of earlier treatment a flush out period of 7 days was allowed before the intervention was started.

Out of 50 patients, 39 patients were symptomatic and majority of them i.e. 23 patients (46 %) had headache, followed by symptoms like insomnia in 22 patients (44 %), fatigue 20 patients (40 %). 18 patients (32 %) with giddiness, palpitation was found in 11 patients (22 %), and 4 patients (8 %) had chest pain. Epistaxis was observed only in 2 patients (4 %).

In the present study familial predisposition was observed in 42 % of the cases, excessive salt intake was observed in 50 % of cases and the risk factors like smoking, obesity, alcohol was found only in 17 % of cases.

#### **Mid Test**

On 7th Day

In majority of patients no significant difference in BP was recorded in all the 3 postures. Though linear reduction in Blood pressure was observed in few cases, few cases showed slight increase in Blood pressure when compared to previous reading.

#### **14th Day**

Reduction in SBP to an average of 15 mm of Hg and DBP to an average of 10 mm of Hg was noted. Symptoms such as headache, giddiness reduced in few patients.

#### **21st Day**

Reduction in SBP to an average of 20 mm of Hg and DBP to an average of 12 mm of Hg was observed. There was improvement in quality of sleep in individuals who complained of insomnia.

#### **Post Test Observation**

After the intervention there was significant reduction in symptoms such as giddiness, headache, fatigue, insomnia though no much improvement in palpitation and chest pain was observed. Overall assessment of the intervention revealed that out of 50 patients, 22 (44 %) had marked improvement, 18 (36 %) had moderate improvement, 7 (14 %) had mild improvement and no improvement was noticed in 3 (6 %) individuals. Overall, the study revealed that the selected drugs have a significant role to play in the management of Essential hypertension. Reduction in BP was observed markedly with p value 0.000. (Table 2-9).

**Table 1: showing the range of blood pressure stages according to 7<sup>th</sup> report of Joint National committee on prevention, detection, evaluation and intervention of HBP**

Hypertension Stage	Systolic BP	Diastolic BP
Normal	>120	>80
Pre hypertension	120-139	or 80-89
Stage 1 hypertension	140-159	or 90-99
Stage 2 hypertension	≥160	or ≥100

**Table 2: showing descriptive statistics of systolic blood pressure (SBP) in supine posture**

	Mean	Std. Deviation	N
SBP BT	156.9000	5.06268	50
SBP 7 <sup>th</sup> day	146.6000	12.71543	50
SBP 14 <sup>th</sup> day	142.2500	10.29999	50
SBP 21 <sup>st</sup> day	137.6500	11.26727	50
SBP AT	134.2000	11.15669	50

Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	12457.720	4	3114.430	77.130	.000
Error(Change)	6299.080	156	40.379		

**Table 3: showing descriptive statistics of diastolic BP in supine posture**

	Mean	Std. Deviation	N
DBP BT	97.8500	3.90627	50
DBP 7 <sup>th</sup> day	90.9000	7.16043	50
DBP 14 <sup>th</sup> day	87.5500	7.05273	50
DBP 21 <sup>st</sup> day	85.6000	6.59759	50
DBP AT	83.2500	6.00320	50

Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	5146.120	4	1286.530	92.732	.000
Error (Change)	2164.280	156	13.874		

**Table 4: showing descriptive statistics of systolic blood pressure (SBP) in sitting posture**

	Mean	Std. Deviation	N
SBP BT	157.6000	5.53219	50
SBP 7 <sup>th</sup> day	147.3000	13.70420	50
SBP 14 <sup>th</sup> day	143.4500	11.42186	50
SBP 21 <sup>st</sup> day	137.7500	10.73874	50
SBP AT	133.5500	10.01012	50

Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	13775.720	4	3443.930	92.193	.000
Error (Change)	5827.480	156	37.356		

**Table 5: showing descriptive statistics of diastolic BP in sitting posture**

	Mean	Std. Deviation	N
DBP BT	98.3000	4.97275	50
DBP 7 <sup>th</sup> day	90.9500	7.11787	50
DBP 14 <sup>th</sup> day	88.2000	7.17260	50
DBP 21 <sup>st</sup> day	86.2500	6.55059	50
DBP AT	83.2500	5.52268	50

Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	5231.880	4	1307.970	83.130	.000
Error (Change)	2454.520	156	15.734		

**Table 6: showing descriptive statistics of systolic blood pressure (SBP) in standing posture**

	Mean	Std. Deviation	N
SBP BT	157.8500	6.01515	50
SBP 7 <sup>th</sup> day	146.4500	14.13842	50
SBP 14 <sup>th</sup> day	142.9000	11.36752	50
SBP 21 <sup>st</sup> day	137.2500	11.53534	50
SBP AT	132.9000	9.90157	50

Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	14656.120	4	3664.030	82.850	.000
Error (Change)	6899.080	156	44.225		

Table 7: showing descriptive statistics of diastolic BP in standing posture

	Mean	Std. Deviation	N		
DBP BT	98.9000	4.93964	50		
DBP 7 <sup>th</sup> day	90.6000	7.98974	50		
DBP 14 <sup>th</sup> day	87.9500	7.23932	50		
DBP 21 <sup>st</sup> day	86.3000	7.18331	50		
DBP AT	83.9000	5.93901	50		
Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	5342.720	4	1335.680	85.971	.000
Error (Change)	2423.680	156	15.536		

Table 8: showing general linear mode of mean systolic blood pressure

	Mean	Std. Deviation	N		
SBP BT	157.4500	6.01315	50		
SBP 7 <sup>th</sup> day	146.7800	14.15842	50		
SBP 14 <sup>th</sup> day	142.8600	11.36952	50		
SBP 21 <sup>st</sup> day	137.5300	11.54534	50		
SBP AT	133.5500	9.90657	50		
Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	14656.120	4	3664.030	82.850	.000
Error (Change)	6899.080	156	44.225		

Table 9: showing general linear mode of mean diastolic blood pressure

	Mean	Std. Deviation	N		
DBP BT	98.3500	4.94164	50		
DBP 7 <sup>th</sup> day	90.8000	7.99274	50		
DBP 14 <sup>th</sup> day	87.8800	7.24032	50		
DBP 21 <sup>st</sup> day	86.0500	7.18831	50		
DBP AT	83.4600	5.94101	50		
Source	Type III Sum of Squares	df	Mean Square	F	Significance
Change	5231.880	4	1306.970	83.250	.000
Error (Change)	2454.520	156	15.754		

## DISCUSSION

The result of the study revealed that, a combination of brahmyadi compound, ashwagandha churna and shilajatu vati has a definite role in lowering BP, which also showed statistically highly significant results with P value < 0.000. The symptoms such as headache, insomnia, and giddiness were reduced after the intervention, while other symptoms namely fatigue, chest pain and palpitation showed no significant response. After observing the mean blood pressure values, it is seen that systolic BP reduced up to 10 mm Hg while diastolic BP reduced up to 6 mm hg on 7<sup>th</sup> day. On 14<sup>th</sup> day systolic BP reduced up to 14 mm Hg and diastolic BP reduced up to 10 mm Hg. On 21<sup>st</sup> day systolic BP reduced up to 19 mm Hg and diastolic BP reduced up to 12 mm Hg. After treatment systolic BP reduced 22 mm Hg and diastolic BP reduced 15 mm Hg. Freshly detected and untreated cases responded well while treated cases of more than 2 years of history showed lesser improvement. The response was encouraging in majority of the patients where stress played an important role.

## CONCLUSION

In the present clinical trial, it was observed that there was marked reduction in the levels of total BP. Symptoms like headache, insomnia, and giddiness showed marked improvement while not much reduction was observed in other symptoms such as chest pain, fatigue and palpitation. Most of the patients in the study were symptomatic on the contrary to general notion that essential HTN is

asymptomatic. The most commonly observed symptoms in them were headache, insomnia, fatigue, giddiness respectively. Symptoms like palpitation, chest pain were observed more in individuals who had chronic HTN and were already treated. Systolic blood pressure reduced considerably than diastolic blood pressure.

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