

AN AYURVEDIC INTERVENTION IN THE MANAGEMENT OF RESISTANT HYPERTENSION: A CASE STUDY

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<https://doi.org/10.46607/iamj15p6042022>

(Published Online: May 2022)

Open Access

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Article Received: 27/04/2022 - Peer Reviewed: 05/05/2022 - Accepted for Publication: 31/05/2022



ABSTRACT

Now a days Hypertension and its related complications becoming a major cause of death worldwide. Lifetime use of antihypertensive medication can lead to other systemic diseases. In modern medicine antihypertensive drugs lower the high blood pressure but do not eradicate the risk of cardio Cerebro-reno-ophthalmo-vascular involvement. *Ayurvedic* approach to pathogenesis and its management can provide the solution to rising cases of this disease. *An Ayurvedic* holistic approach can minimize the risk factor in a better way by reducing the blood pressure level. To assess the Clinical efficacy of *Ayurvedic* oral medicine in the management of resistant hypertension using clinical symptoms and laboratory investigation. Randomly a case of resistance was selected for the study. *Lahsunadi Vati*, *Chandraprabha Vati*, *Dasamoola Kadha*, *Punarnavadi Kasayam* & *Haritaki Churana* were used as an oral intervention for this study. Clinical symptoms are reduced, and laboratory parameters were significantly changed at the end of treatment. This study opens hope for *Ayurvedic* intervention in the management of resistant hypertension. And needs more study to evaluate the efficacy of these drugs in the broad aspect

Keywords: Resistant Hypertension, *anukta vyadhi*, *Margavarodha*.

INTRODUCTION

Raised BP remains the leading cause of death globally, accounting for 10.4 million deaths per year.¹ When reviewing global figures, an estimated 1.39 billion people had hypertension in 2010.² When blood pressure stays high for a longer duration, it can strain the heart, damage blood vessels, and increases the risk of heart attack, stroke, kidney problems, and even lead to death. In modern medicine antihypertensive drugs lower the high blood pressure but do not eradicate the risk of cardio Cerebro-reno-ophthalmo-vascular involvement, But Ayurvedic holistic approach can minimize the risk factor in a better way by reducing the blood pressure level. Ayurvedic texts mentioned *Anukta vyadhi*³, according to *Charakacharya*, sometimes neither it is possible nor it's necessary to identify a disease by a name (*Anukta Vyadhi*). An Ayurvedic physician should attempt to construct the *Samprapti* (Pathogenesis) of a given clinical condition on the basis of signs, symptoms, acuteness, chronicity, and complication with investigative findings in each case and should plan the management accordingly. HTN may directly not be mentioned in *Ayurvedic* classics, but it might be present from the time, many diseases like *Pakshaghata* (Stroke), *Mutraghata* (Renal failure), and *Hridroga* (heart disease) are very well explained in our texts which are common complications secondary to Hypertension. It proves the existence of this silent killer since the old days. Resistant hypertension is defined as BP >140/90 mm Hg in a patient treated with three or more antihypertensive medications at optimal (or maximally tolerated) doses including a diuretic and after excluding pseudo resistance^(4,5) as well as drug-induced hypertension and secondary hypertension.⁽⁶⁾

CASE STUDY:

A 41-Year-old male patient came to *Kayachikitsa* OPD, GACH with the chief complaint of dizziness for 5 days with no other symptoms. Hypertension was diagnosed 4 years ago when blood pressure was measured on a routine check-up at around 154/108 mm Hg on three occasions and a pulse of 84 bpm. The patient

has initially treated with Amlodipine 5 mg daily for 2 years then shifted to the combination of Telmasertain 40 mg hydrochlorothiazide 12.5 mg. Yet his BP control had fluctuated and remained above 140/100mmhg. His family history was positive for Hypertension, father died 2 years ago due to CVA, mother had HTN and T2DM. His bowel habit was constipated with sticky stool. The physical assessment was unremarkable except for the presence of obesity (5'7" & weight 85kg.) With coated tongue. Other laboratory investigations and vital signs were abnormal as he had hypercholesterolemia for the past 2 years and grade 1 fatty liver for 1 year.

VITALS BEFORE TREATMENT:

- Blood pressure- 154/108mmHg.
- Pulse Rate- 84/ minute
- Temperature- 98.9 F, Afebrile
- Respiratory Rate- 22/ minute
- Others- pallor, oedema, icterus were absent.

Systemic Examination: The rest of the systemic examination did not reveal any significant abnormality.

Dashvidha Pariksha:

1. *Prakriti- Pitta-Kaphaj*
2. *Vikriti-Vata pradhan Tridosaja*
3. *Saar- Twak*
4. *Samhanan- Madhyama*
5. *Satmaya- Vyamishra*
6. *Satva- Madhyam*
7. *Pramaan-Madhyama*
8. *Aahar Sakti-Madhyama*
9. *Vyayaam Shakti- Avara*
10. *Vaya-Prodhavastha*

Methods and materials

After clinical examination and according to HTN guidelines Patient was diagnosed with a case of Resistant Hypertension. We plan our treatment by adding an oral Ayurvedic drug with all 3 combinations of an antihypertensive drug for 1st week, after withdrawing hydrochlorothiazide 12.5 mg. The study was conducted for 1 month.

Table 1: Drug Administration

Sl. No	Drug Name	Dose	Anupana	Time	Day	Specification
1	<i>Lahsunadi vati</i> ⁷	2tab (250mg)	Lukewarm water	BD	30	After food
2	<i>Chandraprabha vati</i> ⁸	2 tabs (250mg)	Lukewarm water	BD	30	After food
3	<i>Dasamoola kadha</i> ⁹	20 ml	Water	BD	30	After food
4	<i>Punarnavadi kasayam</i> ¹⁰	20 ml	Water	BD	30	After food
5	<i>Haritaki churna</i> ¹¹	6 gm	Lukewarm water	OD, At bedtime	30	1 hour ago, before going to bed

Table 2: Pathyaapathya and yogasana advice during treatment^{12,13}

Paithya	Apaithya	Yoga asana
Low salt(<5gm)	Vegadharana	Anulom-bilom pranayam
Low-calorie diet	Alcohol	Sheetali pranayam
Green vegetable, fruits	Smoking	Ujjeyi pranayam
<i>Hridya mahakasaya,</i>	Red meat	Bramari pranayam
<i>Rakta Sali, Mudga, Yush</i>	Cold drinks, spicy foods	Savasana
<i>Lahsun, sunthi, madhu</i>	Fatty food, sedentary lifestyle	Vajrasana
<i>Saindhav lavan</i>	<i>Dadhi</i>	Vrikshasana
Citrus fruits like <i>Dadima, Jambira nimbu</i>	<i>Kshara, tikta, kasaya rasa</i>	Pavanmukta asana
<i>Bramhi, Arjuna, Aswagandha</i>	<i>Kama, Krodha, Divaswapna</i>	Badda konasana

Lahsunadi Vati-

Ingredients have a great role in *Ama pasana*, pressure levels also reduce cholesterol levels and improved digestion and metabolism. Allicin, the main active compound in garlic, research suggests that allicin may prevent the production of angiotensin II, a compound responsible for increasing blood pressure by causing your blood vessels to tighten up or contract by preventing the production of angiotensin II. Allicin also stimulates the production of hydrogen sulphide and nitric oxide, two compounds crucial for regulating blood pressure. Garlic's anti-inflammatory and antioxidant properties may further contribute to garlic's ability to reduce or prevent rises in blood pressure levels.

Chandraprabha Vati: *Chandraprabha Vati* (CV) is a herbo-mineral formulation consisting of 37 ingredients (28 herbs, 3 mineral salts, 2 alkalis, 2 metal ashes, sucrose, and Aspect mineral pitch) which is used as a diuretic in the *Ayurvedic* system of medicine. It contains *Guggulu* and *Shilajit* in a maximum amount (32 parts each), the two best *Srota Sodhak* drugs, and is very useful for *Margavarodha Chikitsa*. Thus, it helps in reducing blood pressure levels.

Dasamoola Kadha: *Dashamoola* is a useful herbal combination of *Laghu panchmoola* and *Bruhat*

Panchmoola. *Laghu Panchamoola* is indicated for *Vata Pitta* disorders and *Bruhat Panchmoola* is indicated in *Vata-Kapha* disorders. A combination of both *Panchmoola* i.e., *Dashamoola* is indicated in *Vata* predominant *Tridosha* disorders. It also acts as one of the best *Sothahara* drugs.

Punarnabha Kasayam: *Punarnava, Nimba, Patola, Sunthi, Guduci, Devadaru* and *Haritaki* are the ingredients. Among them, *punarnava* has a major role in controlling blood pressure. *Liriodendrin, Hypoxanthine, and boeravinone* are active antihypertensive agents of *Punarnava* which acts as *Ca²⁺ channel antagonist*. It also acts as a diuretic by increasing renal blood flow by relaxing the smooth muscles of the arterial wall.

Haritaki Churna: *Haritaki churna* uses as a *Nitya virechana* drug here. With Lukewarm water, it helps in *Vatanulooma karma*. Regulating the action of *Ap-ana Vayu*, prevent constipation and thus also help in controlling Blood pressure level. *Haritaki Churna* purifies the blood thereby making the heart muscles grow stronger. The clean purified blood inhibits the build-up of fat in the artery and helps in maintaining blood pressure, a strong heart and clear arteries.

OBSERVATION**Table 3:** Laboratory investigations

Sl.no	Biochemical parameters	Before Treatment	After treatment
1	Sr cholesterol	137 mg/dl	124 mg/dl
2	Triglyceride	215 mg/dl	155 mg/dl
3	HDL	31mg/dl	48 mg/dl
4	LDL	63 mg/dl	57 mg/dl
5	VLDL	43 mg/dl	31 mg/dl
6	Blood urea	30 mg/dl	-
7	Sr. Creatinine	0.9 mg/dl	-
8	RBS	130 mg/dl	125 mg/dl
9	ECG	Sinus rhythm	-
10	USG	Grade 1 fatty liver	-

Table 4: Vitals during treatmentFor 1st week

Sl.no	Variables	1 st day	2 nd day	3 rd day	4 th day	5 th day	6 th day	7 th day
1	Blood pressure	154/108	148/100	140/92	130/84	130/80	128/80	122/76
2	Pulse rate	78	80	80	81	76	78	82
3	Respiratory rate	19	18	18	20	20	18	20

Table 5: Vitals from 2nd week to 4th week (30days)

Sl.no	Variables	10 th day	15 th day	20 th day	25 th day	30 th day
1	Blood pressure	124/82	126/82	120/78	128/76	122/80
2	Pulse rate	80	78	78	82	80
3	Respiratory rate	18	21	19	18	18

RESULT-

Patient blood pressure was under control for 1 week, after the 1st-week diuretic was withdrawn from an anti-hypertensive drug. After withdrawal also patient blood pressure was controlled. There was not any side effect observed Clinically and laboratorial report. Significant changes were observed in Triglyceride level also found.

DISCUSSION

By compilation of scattered references from Ayurvedic classics, it is concluded that HTN can be *Vata Pradhana* Tridoshaja Vyadhi. These vitiated *Doshas* lead to vitiation of *Rasavaha*, *Raktavaha*, and *Manovaha Srotas*. *Rasa* and *Rakta* are the chief culprits associated with vitiation of psychological factors i.e., *Raja* and *Tama*. The main pathology occurs in *Rasa-Rakta Dhatu*. As the *Adhithana* of the disease is *Hridaya*.

The line of Ayurvedic management is to correction of *Vata Dusti*.

CONCLUSION

Vata is the main causative factor for Hypertension as per Ayurveda. *Vata vaishmya* can occur either due to *Kshaya janya* or due to *margaavarodha*¹⁴. Age, physical appearance & clinical symptoms are more favourable towards *Margavarodha Samprapti* and *Samprapti vighatana* done accordingly. *Lahsunadi Vati*, *Chandraprabha Vati*, *Dasmool Kadha*, *Punarnavadi Kasayam*, and *Haritaki Churna* are useful medicine for Hypertension. As many interventions are used in this case, so it is difficult to understand by which intervention the patient got relief but all work as a black box intervention cardio protective, vasodilator, antioxidant, diuretic, CCB, Purgative, Reno protective, and dyslipidaemia. The patient got significant relief in both clinical and laboratory parameters. As it is only a

single case study it cannot draw a remarkable line for the Ayurvedic approach to hypertension, just open hope for further study. Large scale clinical trial should be done to establish it as a general treatment for Hypertension.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Dulumani Kalita & Ranjan Kr. Kalita: An Ayurvedic Intervention in The Management of Resistant Hypertension: A Case Study. International Ayurvedic Medical Journal {online} 2022 {cited May 2022} Available from: http://www.iamj.in/posts/images/upload/3527_3531.pdf