

# Management of Hypertension Induced Left Ventricular Hypertrophy - A Single Case Study

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## ABSTRACT

Left ventricular hypertrophy (LVH) is a condition in which there is an increase in left ventricular mass, either due to an increase in wall thickness or due to left ventricular cavity enlargement, or both. It's important to treat the causes of LVH early as it can lead to severe problems such as Heart failure, sudden cardiac arrest and ischaemic stroke. On the basis of presentations and ayurvedic principles it is best managed. It can be categorised under Hridroga. It is caused due to imbalance in Tridosha with predominance of Vata and Kapha dosha. Heart is the root of Rasavaha and Pranavaha Srotas and is responsible for circulation. Vitiation of Rasavaha and Pranavaha srotas along with Mamsa dhatu leads to Left ventricular hypertrophy.

**KEYWORDS:** Hypertension, Left Ventricular hypertrophy, Koshtashodhana, Chatushparni

**How to cite this paper:** Dr. Kanchana Sharagar | Dr. Madhava Diggavi "Management of Hypertension Induced Left Ventricular Hypertrophy - A Single Case Study" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-8 | Issue-1, February 2024, pp.516-518, URL: www.ijtsrd.com/papers/ijtsrd63437.pdf



IJTSRD63437

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## INTRODUCTION

Left ventricular hypertrophy is most common in individuals with uncontrolled high blood pressure<sup>1</sup>. LVH is increased myocardial mass of the left ventricle. It's important to treat the causes of LVH early as it can lead to severe problems such as Heart failure, sudden cardiac arrest and ischaemic stroke<sup>2</sup>. In modern medicine, various angiotensin converting enzyme inhibitors as well as angiotensin II receptor blockers are prescribed but these medicines cause side effects as well as don't work on the root cause of the disease. On the basis of presentations and ayurvedic principles it is best managed. It can be categorised under Hridroga. It is caused due to imbalance in Tridoshas with predominance of Vata and Kapha dosha. Heart is the root of Rasavaha and Pranavaha Srotas and is responsible for circulation<sup>3</sup>. Vitiation of Rasavaha and Pranavaha srotas along with sthanika Mamsa dhatu leads to Left ventricular hypertrophy

## MATERIALS AND METHODS

Study design was open labelled incidental prospective unblinded single arm add on single case study.

A male Patient aged about 64 years has visited Kayachikitsa Opd, Taranath Government Ayurvedic Medical College and Hospital, Complaining of Shirashoola, Ubhaya Padashotha (Pitting oedema grade II), Bhrama, Shwasakruchrata in the last 8 months. K/C/O HTN since 6 yrs. on treatment.

## LABORATORY INVESTIGATIONS

HB- 11.4 gm%  
CRP- 40 mm/1<sup>st</sup> hr  
RBS- 120 g/dl

## PERSONAL HISTORY

Appetite-Good  
Bowel-Regular  
Micturition-Regular  
Sleep-Sound  
Food-Mixed diet

**GENERAL EXAMINATION**

Appearance-Normal  
 Built-Moderate  
 Nourishment-Moderate  
 Pallor-Present  
 Icterus-Absent  
 Oedema-Absent  
 Cyanosis-Absent

**VITALS**

Pulse-78/min  
 BP-110/70 mmHg  
 Respiratory rate-18/min  
 Weight-68 kg  
 Height-156 cm

**ROGI PARIKSHA****Asthasthana Pariksha:**

Nadi: Vata pitta  
 Mutra: 4-5 time/day

**OBSERVATION & RESULTS**

Subjective parameters	Before treatment	After treatment (After 60 days)
Shirashoola	+++	0
Padashotha	++	0
Bhrama	++	0
Shwasakruchrata	++	0

Objective parameters	Before treatment	After treatment (Ater 60 days)
Systolic BP	150 mm Hg	110 mm Hg
Diastolic BP	90 mm Hg	70 mm Hg
Total cholesterol	276.4 mg/dl	258.0 mg/dl
Triglycerides	159.1 mg/dl	147.9 mg/dl
HDL	65 mg/dl	54.3 mg/dl
LDL	179.58 mg/dl	174.12 mg/dl
2D echo	Concentric LVH Grade I LVDD	Normal
EF %	60%	70%

**DISCUSSION**

Left ventricular hypertrophy leads to the risk of heart attack and stroke. It is best diagnosed on the basis of investigations like ECG, Echocardiography. Elevated lipid profile is a frequent metabolic abnormality possibly contributing to the development of cardiac hypertrophy in obese patients. Based on the presentations like Shwasakruchrata, Shrama, Shiromandaruja, Hridruja and Shotha it is diagnosed as VataKapha pradhana Tridoshaja Hridroga. Due to the regular and prolonged accumulation of ama in the heart, the proper function may get impaired<sup>4</sup>. The medicines selected are mainly having Deepana, Pachana, Anulomana, Hridya and Balya. As Teekshna Shodhana is not advisable in patients of Hridroga due to the possibilities of acute emergencies, koshtashodhana with Haritakyadi yoga is found effective.

Mala: Irregular 1time/day  
 Jiwha: lipta  
 Shabdha: Prakruta  
 Sparsha: Ruksha  
 Drik: Pandu  
 Akrti: Madhyama

**SYSTEMIC EXAMINATION**

**CNS** is Intact with Higher mental functions,  
**CVS:** S1S2 Heard, no any abnormalities observed,  
**RS:** Air entry bilaterally Equal, no any added sounds observed,  
**P/A:** Soft, Non-tender, No organomegaly.

**STUDY METHODS (INTERVENTION)**

Deepana Pachana and Koshtashodhana, with Haritakyadi yoga 3gms TID with warm water before food for 8 days. Cap. Chatusparni yoga 500 mg BD, before food for 45 days with Dashamooladi kwatha 20ml as anupana

Haritakyadi yoga contains Haritaki, Saindhava lavana, Amalaki, Guda, Vacha, Vidanga, Rajani, Pippali and Shunti are ushna veeryatmaka and Tikta Katu rasatmaka. It has the action of Deepana Pachana which helps in Ama pachana and also useful in Sthoulya chikitsa<sup>5</sup> as obesity is one of the causative factors of hypertension which leads to left ventricular hypertrophy in later stage. Through Vatanulomana it corrects the actions of vata. Chatusparni is a combination of Shalaparni<sup>6</sup>, Prishniparni<sup>7</sup>, Mudgaparni<sup>8</sup>, Mashaparni<sup>9</sup> with Madhura, Tikta rasa, Tridoshahara, Hrudyaya, Balya, Mutrala and Rasayana effects. It also acts as Vedanasthapana, Shothahara, Shwasaghna. Many of the chemical compositions in Chatusparni helps to improve blood flow in the arteries of the heart. That may lead to improvement in symptoms like chest pain or angina. Due to the action of Balya it also improves pumping action of heart. By vasodilatation, anti-arrhythmic activity and

maintenance of HDL and lowering LDL effects reduce the load on heart and improve cardiac muscle and vessel nutrition<sup>10</sup>. Chatushparni is antioxidant, antihypertrophic and cardioprotective in nature which is essential in treating left ventricular hypertrophy along with Hypertension. Dashamooladi kwatha (anubhuta yoga) contains ingredients like Dashamoola, Arjuna, Punarnava, Varuna, Haritaki, Pushkaramoola, Kamala, Shatavari, Ashwagandha, Chitraka, Vacha, Shunti and Devadaru. Dashamoola, Punarnava and Devadaru are having the properties like Vata Kaphahara and Shothaghna. Haritaki and Arjuna acts as cardioprotective in nature. Varuna is Mutrala and Medohara. Chitraka, Vacha and Shunti does the Amapachana and also effective in hyperlipidemia because of Katu rasa and Ushna Veerya. Shatavari and Ashwagandha are Balya in nature which helps to improve the pumping action of heart.

### CONCLUSION

After treatment Echocardiography has shown normal left ventricle along with significant reduction in blood pressure, lipid profile, subjective parameters and significant improvement in Ejection fraction, but there is slight reduction in HDL level which was within the normal limit only.

Left ventricular hypertrophy is a reversible disease. This case study emphasises, the need to develop ayurvedic cardiology. In such conditions symptomatic treatment is the only remedy in modern medicine. In ayurveda many drugs are available to treat different conditions of heart disorders, which are helpful in preventing, treating, relieving the symptoms and also eradicate the root cause. Ayurvedic cardiology speciality practice has good opportunity in research and practice. Multicentric studies and meta-analysis study can be taken up in future. In LVH no Teekshna shodhana is advised. **Koshtashodhana with Haritakyadi yoga followed by chatushparni rasayana found effective in reversing left ventricular hypertrophy.**

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