



## Research Article

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### MANAGEMENT OF RESISTANT HYPERTENSION IN A NON-DIALYSIS CHRONIC KIDNEY DISEASE PATIENT THROUGH PANCHAKARMA: A CASE STUDY

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#### ABSTRACT

A 53 years Male patient diagnosed with Chronic Kidney Disease (CKD) and uncontrolled Hypertension (HTN) on three anti-hypertensive agents attended the OPD of CARIHD. The patient was kept initially on oral Ayurvedic treatment for 8 days. Then he was subjected to Panchakarma procedures. During Panchakarma therapy, it was found that the baseline blood pressure (200/110 mmHg) came down to 160/100 mmHg after Abhyanga and Swedana and subsequently to 150/90 mmHg after Virechana therapy and further reduced to 130/80 mmHg after the administration of *Matravasti*. The patient was discharged after 18 days of treatment with advice to continue allopathic medication as advised and monitor BP regularly. The patient was monitored for another 180 days and found normal blood pressure with a reduction in serum creatinine levels. After analyzing the results, it is concluded that this procedure can be useful in resistant hypertension and in stabilizing and maintaining the blood pressure in a long run. Further study is recommended.

**Keywords:** Panchakarma, Resistant Hypertension, CKD, *Abhyanga* (Oil Massage), *Swedana* (Steam Bath), *Matra Vasti*.

#### INTRODUCTION

Resistant hypertension (RH) is a common clinical problem faced very often by Ayurveda clinicians and specialists. Most of the poor people rely on Ayurveda for the treatment of chronic and complicated diseases<sup>1</sup>.

Resistance hypertension is defined as blood pressure above therapeutic target (140/90 mm of Hg) in spite of concurrent use of three antihypertensive agents of a different class (one must be diuretics) at optimum dose<sup>2</sup>.

The exact prevalence of RH is not known, but several observational studies suggest that RH is seen in about 9-13% of hypertensive patients. CKD is the common cause as well as complication of uncontrolled hypertension. Notably, 65-95% of CKD patients develop hypertension, as the glomerular filtration rate (GFR) declines from 85 to 15 mL/min<sup>3</sup>. Serum creatinine > 1.5 mg/dl was a strong predictor of treatment failure or resistant hypertension. The low success rate of antihypertensive treatment in CKD may be due to multi factorial pathogenesis such as sodium retention, increased activities of the sympathetic nervous system and enhanced activities of the sympathetic nervous system. Nocturnal hypertension is common in CKD<sup>4</sup>.

A normalization of BP is highly required as RH worsening the kidney damage and it is also an independent risk factor for other end-organ damage and cardiovascular events<sup>5</sup>. Impressive reductions in BP for individuals receiving three or more antihypertensive medications should have mineralocorticoid antagonists, an important fourth-line BP agent in the treatment of resistant HTN but has also limitation<sup>6</sup>.

Hypertension as a single disease is not comparable with the nomenclature of diseases mentioned in classical Ayurveda texts. The modern understanding of the pathophysiology of hypertension can lead to making out the pathophysiology in Ayurveda parlance. Hypertension is a disorder of *Vata* in *Rasa* and *Rakta Dhatu* due to *Avarana* or *Sanga* (obstruction of channels by *Ama* or *Mala*)<sup>7</sup>. *Sonita dusti* is the main manifestation of hypertension by some authors<sup>8</sup>. Ayurveda treatment protocol is series of approaches to control *Vata* by *Deepana*, *Pachana*, *Anulomana*, and detoxification procedures like- *Panchakarma*, *Pranayama*, *Asana* etc to restore the equilibrium of body and mind according to individual *Prakruti* (body constitution), *Vikruti* and other idiosyncratic factors<sup>8</sup>. The efficient procedure to control vitiated *Vata* is *Vasti* (enema of herbal decoction and medicated oil).

*Rauwolfia serpentina* is one of the Indian medicinal plants mentioned in Ayurveda is a safe and effective treatment for hypertension<sup>9,10</sup>.

Still, Ayurveda physician has been prescribing it in crude form as it has detoxification action. Other medicinal plants have also the antihypertensive effect on human and experimental animals<sup>11</sup>. Ayurveda treatment for CRF and anti fibrotic herbal medicine has been published by leading journals<sup>12-14</sup>.

Many RH patients with CKD came to Ayurvedic institute as they fed up by the conventional system and cannot afford the treatment for an economic reason. *Boerhavia diffusa* root is said to be the best single herb to control CKD<sup>15</sup>. One of such IPD patient treatment procedure was documented as documentation is vital for Ayurveda practitioners<sup>16</sup>. The consent of the patient was taken for Panchakarma treatment.

## Case Presentation

A Male patient aged about 53 years came to General OPD on 03-01-2017 with the complaint of head reeling and the general weakness of two years duration. He was diagnosed with CKD with resistant hypertension and was taking Calciguard 10 mg (Nifedipine -20 mg per day), Stampress XL 25 mg, Avostatin 40 mg per day (50 mg metoprolol per day), Maxilong 0.3 mg (Moxonidine 0.6 mg per day) and tide (torsemide 10 mg OD) since last three months from a cardiologist. Despite these anti-hypertensive regimens his blood pressure was 200/110 mm Hg. Though he was referred to a nephrologist, he has chosen Ayurveda treatment for his illness.

The base line information of the patient revealed serum sodium 138 mEq/L (135 to 147 mEq/L); potassium 3.4 mEq/L (3.5 to 5 mEq/L); blood urea 92 mg/dL (15 to 40 mg/dL); creatinine 4.5 mg/dL (0.6 to 1.1 mg/dL); calcium 9.8 mg/dL (8.8 to 10 mg/dL); total cholesterol 267 mg/dL (< 200 mg/dL); triglycerides 263 mg/dL (< 150 mg/dL); Hb% - 9.4 gm% and fasting glucose 93 mg/dL (70 to 110 mg/dL). The patient's urine examination revealed albumin +. His ECG revealed Left ventricular hypertrophy. His echo colour Doppler revealed concentric hypertrophy of Left ventricle (LV) with good systolic, LV dysfunction. USG showed CKD with normal abdominal organs with raised parenchymal echogenicity of bilateral kidney.

Thorough history taking and examination of the patient as per Ayurvedic parameters revealed; *Astavidha Pariksha* were *Nadi – Manduka Gati, Mutra - Avila Varna, Mala - Malabaddhata, Jivha - Saama, Sabdda - Samanya, Sparsa - Ruksya, Druk - Samanya, Akrti - Meda Vahula*. He was moderately obese (BMI 34), moderate pitting oedema on feet, puffy face and mild pallor observed.

## Ethical approval and Patient consent

The study is carried out as per international conference of harmonization-good clinical practices guidelines (ICH-GCP) or as per declaration of Helsinki guidelines and the consent of the subject was obtained as per institute norm.

## Treatment plan

As per Ayurveda doctrine, Kidney is made up of *Rakta* and *Meda*. *Vata* is responsible for degeneration and hypertension. *Kapha anubadha* exists as pedal oedema present.

Therefore, first *Deepana* (stomachis), *Pachana* (digestive) along with *Mutrala* (Diuretic), *Hrudya* (cardiotonic) and *Rasayana* (immunomodulators) drug administered for eight days. Though

Blood pressure dropped to 180/100 mmHg but could not be normalized. Therefore, the patient was admitted in IPD for *Panchakarma* procedure. At first, *Sarpagandha Vati* 500 mg two times daily after food with *Punarnavadi Kashaya* 60 ml prescribed to him for 8 days along with *Bahya Snehana* with *Dhanvantara Taila* (external oleation) and *Sarvanga Baspa Swedana* (whole body sudation with medicated steam) for 7 days given. After adequate *Snehan Swedana*, *Virechana* (Laxation) with *Trivrit Churna* 20 gm for one day in the morning with lukewarm water) done for *Vatanulomana*. *Matra Vasti* (*Dhanvantara Taila* was administered for 3 days).

## Patient assessment and treatment outcome

The blood pressure was monitored in supine position of the left hand by the same instrument six hourly but evening 8 pm measurement was taken into account. The patient was advised to take all Allopathic medications except Avostatin along with the procedures. Light diet was advised during the course of procedures.

Before the administration of *Matra Vasti* whole body massage was done by means of Plain *Dhanwantam Taila* and whole body *Bashpa Sweda* (steam bath) for 7 days followed by *Virechana* with *Trivrit Choorna* 20 g on the eighth day.

After *Virechana*, *Matravasti* with *Dawantaram Taila Vastipaka* was given on the 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> day. 60 ml of *Dhawantaram Taila Vastipaka* was administered per anus through glycerine syringe. All the regimens were followed as recommended as per Charaka Samhita during the course of *Matra Vasti*. The BP was reduced to 160/100 mm of Hg after *Bahya Snehana* (external oleation) and *Sarvanga Swedana* (steam bath).

After *Virechana* by *Tivrit Churna* 20 gm OD, the blood pressure was reduced to 150/90 mm of Hg and the blood pressure was reduced to 130/80 mm of Hg after the end of three days of administration of *Matra Vasti* (Table 1).

All the laboratory parameter became normal except the serum creatinine. The patient was discharged on 25/03/2017 with advice to continue Allopathic medication and monitor BP once in a week. The patient was monitored for another 180 days and found normal blood pressure with a reduction of creatinine up to 1.83 (Table 2).

The ultrasound report improved in terms of decrease in parenchymal echogenicity along with bringing down in the size and shape of the kidney to normalcy after six months of follow-up.

**Table 1: Blood pressure monitoring at the end of different Ayurveda procedures**

Treatment day	Ayurveda procedures	Blood pressure in mmHg at 8 am	Blood pressure in mmHg at 8 pm
D0	Nil	180/100	184/110
D8	<i>Snehan +Swedana</i>	160/100	160/100
D11	<i>Virechana</i>	150/90	150/86
D14	<i>Matra Vasti</i>	130/80	130/80

Table 2: Various laboratory parameters of a patient at a different interval

Name of laboratory parameter	D0 (Baseline)	D8	D14	D180 (Follow-up)
Serum urea	92	37	26	30
Serum creatinine	4.5	2.17	2.01	1.83
Total cholesterol	267	240	187	160
Triglyceride	263	207	167	180
Serum sodium	138	114	103	112
Serum potassium	3.4	3.7	3.8	3.5
Serum chloride	110	74	75	75
Hb%	9.4	10.4	10.6	12.6
Blood pressure	180/100	160/100	130/80	130/80

## DISCUSSION

Ayurveda procedures of detoxification have immense therapeutics values in chronic diseases<sup>17</sup>. In this particular case, resistant hypertension may be due to the coexistence of CKD and obesity<sup>18</sup>.

The blood pressure of this case came down after *Abhyanga* (oil massage) and *Swedana* (steam bath) may be due to increasing vascularisation, relaxation of peripheral vessels and enhanced venous return<sup>19-22</sup>.

It also nourishes and pacifying *Vata* and *Kapha Dosa*. *Matra Vasti* has been evaluated in other degenerative diseases also<sup>23</sup>.

The administration of *Matra Vasti* can nullify the *Vata* of *Pakyasaya* (lower portion of the abdomen) which normalizes the function of kidney and blood pressure. Decreased parenchymal echogenicity along with normal size and shape of the kidney may be due to the reversal in renal interstitial fibrosis through anti-inflammatory action, anti-fibrogenesis and stabilizing extracellular matrix as evident from some studies<sup>24-26</sup>.

## CONCLUSION

The *Panchakarma* procedure can be co-prescribed to normalize the blood pressure along with antihypertensive agents in resistant hypertension. It can also stabilize and maintain blood pressure for a long period if proper monitoring and regular practice of *Panchakarma* therapy done in these cases. Further study is recommended to evaluate its role in CKD and other hypertensive cases too.

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