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 CARHD. 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 the long run. Further study is recommended.

Keywords: Panchakarma, Resistant Hypertension, CKD, Abhyanga (Oil Massage), Swedana (Steam Bath), Maitra 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 diseases1.

Resistance hypertension is defined as blood pressure above therapeutic target (140/90 mm Hg) in spite of concurrent use of three antihypertensive agents of a different class (one must be diuretics) at optimum dose2.

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. 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 CKD3.

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 events4. 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 limitation5.

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)6. Sonita dusti is the main manifestation of hypertension by some authors7. 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 Prakriti (body constitution), Vikriti and other idiosyncratic factors8. The efficient procedure to control vitiated Vata is Vasti (enema of herbal decoction and medicated oil).

Rauwolfia serpen Tina is one of the Indian medicinal plants mentioned in Ayurveda is a safe and effective treatment for hypertension9,10. 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 animals11. Ayurveda treatment for CRF and anti fibrotic herbal medicine has been published by leading journals12-14.

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 CKD15. One of such IPD patient treatment procedure was documented as documentation is vital for Ayurveda practitioners16. 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 Calciaguard 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 antihypertensive 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; Asstavidha Pariksheya were Nadi – Manduka Gati, Mutra – Avila Varma, Mala – Malabaddhata, Jivha - Saana, Sabdda - Samanya, Sparsa – Ruksyaa, Druk – Samanya, Akruti - 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. Kaptha 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 normalised. Therefore, the patient was admitted in IPD for Panchakarma procedure. At first, Sarpagandha Vati 500 mg two times daily after food with Punarnnavadi 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 Dhanvantara Taila and whole body Bashpa Sweda (steam bath) for 7 days followed by Virechana with Trivrut Choorna 20 g on the eighth day.

After Virechana, Matravasti with Dawantaram Taila Vastipaka was given on the 9th, 10th and 11th day. 60 ml of Dhanvantara 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 Trivrit 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            | Snehan + Swedana    | 160/100                       | 160/100                      |
| D11           | Virechana           | 150/90                        | 150/86                       |
| D14           | Matra Vasti         | 130/80                        | 130/80                       |
DISCUSSION

Ayurveda procedures of detoxification have immense therapeutics values in chronic diseases\(^1\). In this particular case, resistant hypertension may be due to the coexistence of CKD and obesity\(^2\).

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\(^19\)-\(^22\).

It also nourishes and pacifying Vata and Kapha Dosha. Matra Vasti has been evaluated in other degenerative diseases also\(^23\).

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 intestinal fibrosis through anti-inflammatory action, anti-fibrogenesis and stabilizing extracellular matrix as evident from some studies\(^24\)-\(^26\).

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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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   | 72              |
| Hb%                         | 9.4          | 10.4| 10.6| 11.2            |
| Blood pressure              | 180/100      | 160/100| 130/80| 130/80         |
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