RESEARCH PAPER

Integrative Polyherbal Approach for Hypertensive Urgency Associated with Dyslipidaemia: A Case Report

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ABSTRACT
Background: Hypertensive urgency is characterized by severely elevated blood pressure without evidence of acute target-organ damage and is associated with an increased risk of cardiovascular complications. Obesity, dyslipidaemia, and psychological stress are important contributors to persistent hypertension.
Case Presentation: A 31-year-old obese male (BMI 30.09 kg/m²) presented with persistently elevated blood pressure of 210/150 mmHg despite recent initiation of telmisartan therapy. The patient had a 10-year history of hypertension and associated cardiovascular risk factors, including obesity, dyslipidaemia, sedentary lifestyle and chronic psychological stress. Laboratory investigations revealed elevated total cholesterol (248 mg/dL), triglycerides (448 mg/dL), LDL cholesterol (110.6 mg/dL), and VLDL cholesterol (89.6 mg/dL). Based on clinical evaluation and the absence of clinically evident acute target-organ involvement during evaluation, the condition was considered hypertensive urgency.
Intervention: The patient was managed with an Ayurvedic treatment protocol comprising *Sarpagandha Ghanavati, Pippalimoola Churna, Brahmi, Shankhapushpi, Panchatikta Kwatha*, and *Triphala Guggulu*, along with dietary regulation, salt restriction, physical activity, stress management practices, and lifestyle modifications. The concomitant antihypertensive medication was gradually tapered according to clinical response under close medical supervision.
Outcome: Over a follow-up period of approximately 70 days, blood pressure progressively reduced from 210/150 mmHg to 126/80 mmHg. Significant improvements were also observed in body mass index (30.09 to 27.7 kg/m²), perceived stress score (31 to 20), total cholesterol (248 to 127 mg/dL), triglycerides (448 to 145 mg/dL), LDL (110.6 to 65.4 mg/dL), and VLDL (89.6 to 29 mg/dL). No adverse events or treatment-related complications were reported.
Conclusion: This case suggests that a comprehensive Ayurvedic intervention targeting obesity, dyslipidaemia, stress, and underlying pathogenic mechanisms may contribute to effective management of hypertensive urgency. The observed improvements in blood pressure and cardiovascular risk factors indicate the potential role of Ayurveda as an integrative approach in severe hypertension.
Keywords: Hypertensive urgency, Ayurveda, Obesity, Dyslipidaemia, *Sarpagandha*, *Panchatikta Kwatha*, *Triphala Guggulu*, Case report
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INTRODUCTION

In the current era of rapid modernization and technological advancement, the prevalence of lifestyle disorders has surged, with hypertension being one of the most significant contributors to global health issues. According to the World Health Organization, hypertension is responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India.[1] Despite its silent and asymptomatic nature in many individuals, hypertension is known as a "silent killer" due to its potential to cause severe complications in the brain, heart, kidneys, and blood vessels if left untreated.[2]Hypertensive urgency is characterized by a marked elevation of blood pressure, typically ≥180 mmHg systolic and/or ≥120 mmHg diastolic, in the absence of clinically evident acute target-organ involvement. Although immediate organ injury is not evident, persistently elevated blood pressure significantly increases the risk of cardiovascular, cerebrovascular, and renal complications if left uncontrolled. Patients may present with symptoms such as headache, dizziness, palpitations, anxiety, or may remain asymptomatic despite severe blood pressure elevation. The pathophysiology involves increased peripheral vascular resistance, increased sympathetic nervous system activity, activation of the renin–angiotensin–aldosterone system, endothelial dysfunction, oxidative stress, and chronic low-grade inflammation. Various modifiable risk factors, including obesity, dyslipidaemia, psychological stress, sedentary lifestyle, excessive dietary salt intake, smoking, alcohol consumption, and poor adherence to antihypertensive therapy, contribute to the development and persistence of severe hypertension. Effective management requires prompt blood pressure control along with comprehensive lifestyle modifications to reduce future cardiovascular risk.

Patient Information

A 31-year-old male patient presented to the Outpatient Department (OPD) of the ITRA Jamnagar hospital seeking

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management of persistently elevated blood pressure. The patient had been diagnosed with hypertension 10 years earlier and had received treatment with amlodipine for approximately 5–6 months; however, long-term antihypertensive therapy was not continued thereafter. Owing to persistently elevated blood pressure, the patient had recently initiated treatment with telmisartan for 2–3 days prior to presentation. Despite this, blood pressure remained markedly elevated, he came here for Ayurvedic management.

At the time of presentation, the patient's blood pressure was 210/150 mmHg. The patient had a height of 171 cm and a body weight of 88 kg, corresponding to a Body Mass Index (BMI) of 30.09 kg/m², indicative of obesity. Notably, the patient did not report any classical symptoms commonly associated with severe hypertension. The patient had no positive family history of hypertension, cardiovascular disease, diabetes mellitus, chronic kidney disease, ischemic heart disease, cerebrovascular disease, or any other major systemic illness. However, detailed history revealed the presence of multiple lifestyle-related risk factors, including psychological stress, irregular dietary habits, a sedentary lifestyle, and obesity, which were considered potential contributors to the persistence of hypertension.

Laboratory investigations revealed dyslipidaemia, with serum total cholesterol of 248 mg/dL, triglycerides of 448 mg/dL, low-density lipoprotein (LDL) cholesterol of 110.6 mg/dL, high-density lipoprotein (HDL) cholesterol of 47.6 mg/dL, and very-low-density lipoprotein (VLDL) cholesterol of 89.6 mg/dL. These findings indicated an increased cardiovascular risk profile and were considered important contributory factors in the persistence of elevated blood pressure.

Considering the patient's preference for Ayurvedic management *Ayurveda* treatment was initiated. Blood pressure was monitored regularly throughout the treatment period, and the concomitant antihypertensive medication was gradually tapered according to clinical response under close medical supervision. Based on the markedly elevated blood pressure in the absence of documented acute target-organ damage, the condition was clinically considered as hypertensive urgency.

Detailed history revealed the presence of several *Nidana* that could have contributed to the development and persistence of hypertension. The identified *Aharaja* Nidana included regular consumption of *Snigdha Ahara* (unctuous foods) and *Guru Ahara*. *Viharaja Nidana* comprised a sedentary lifestyle with inadequate physical activity (*Avyayama*). *Manasika Nidana* included chronic psychological stress related to occupational and work-related pressures.

Clinical Findings

On clinical examination, the patient was conscious, oriented, and clinically stable. The pulse rate was 86 beats/min, and blood pressure was markedly elevated at 210/150 mmHg. Anthropometric assessment revealed Body Mass Index (BMI) of 30.09 kg/m², waist circumference was 100 cm, and hip circumference was 106 cm, resulting in a waist-to-hip ratio of 0.94, suggestive of central adiposity and increased cardiometabolic risk. General physical examination did not reveal pallor, icterus, cyanosis, clubbing, lymphadenopathy, or edema. Systemic examination of the respiratory, cardiovascular, and central nervous systems did not reveal any clinically significant abnormalities. Blood pressure measurements were confirmed by repeated recordings during the clinical assessment. No overt clinical evidence suggestive of acute target-organ involvement was observed during the assessment.

***Dashavidha Pariksha* (Ten-fold Ayurvedic Examination)**

Dashavidha Pariksha revealed a *Pitta-Kapha Prakriti* (somatic constitution). The *Vikriti* (morbid state) was found to be *Pravara*, indicating a pronounced disease manifestation. Assessment of *Sara* demonstrated *Mamsa Sara* predominance, while *Samhanana* (compactness of body tissues) and *Satmya* (adaptability) were of Madhyama grade. The patient's *Satva* (psychological strength) was assessed as *Avara*, which was supported by a high perceived stress level (Perceived Stress Scale score: 31). *Pramana* (body measurements and physique) was *Adhika*, consistent with obesity. Evaluation of *Ahara Shakti* revealed *Madhyama Abhyavarana Shakti* (capacity for food intake) and *Pravara Jarana Shakti* (digestive capacity). *Vyayama Shakti* (capacity for physical exertion) was *Avara*, reflecting reduced exercise tolerance and a sedentary lifestyle, patient belonged to *Madhyama Vaya* (middle age).

***Ashtavidha Pariksha* (Eight-fold Ayurvedic Examination)**

Nadi Pariksha revealed *Kapha-Vata* predominance. *Mutra* and *Mala* were found to be within normal limits. *Jihwa* was *Sama* (coated), suggestive of the presence of *Ama*. *Shabda, Sparsha*, and *Drik* examinations were unremarkable. Aakriti was *Sthula* (obese) (BMI - 30.09 kg/m²).

Diagnostic Assessment

The diagnosis was established based on detailed clinical evaluation, *Ashtavidha Pariksha*, *Dashavidha Pariksha*, anthropometric assessment, and laboratory investigations. Clinical assessment revealed the presence of multiple *Nidana* which were considered important contributory factors in the pathogenesis of the disease. At presentation, the patient's blood pressure was 210/150 mmHg. According to the 2023 European Society of Hypertension (ESH) Guidelines, this corresponds to Grade 3 (severe) hypertension.[3] Despite markedly elevated blood pressure (220/120 mmHg), there was no evidence of acute target-organ damage. Neurological examination was unremarkable. ECG showed no acute ischemic changes. Renal function tests and urine examination were normal. Fundus examination revealed no papilledema or features of malignant hypertension. Therefore, the patient was diagnosed with hypertensive urgency.[4] Based on the clinical findings, blood pressure classification, associated cardiovascular risk factors the case was diagnosed as hypertensive urgency and managed according to *Ayurveda* principles.

Timeline

The details of the events for the course of the disease are depicted in Table 1.

Table 1. Timeline of Therapeutic Interventions and Clinical Outcomes

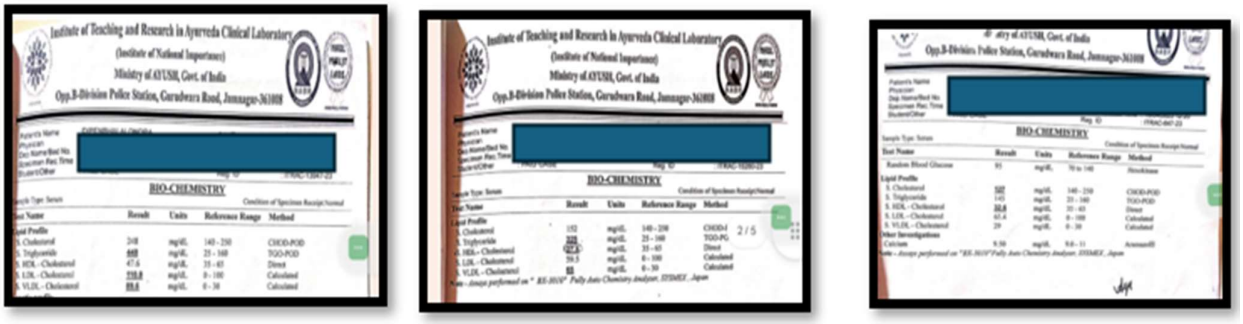
Date	Drugs/Interventions	Diet and Lifestyle Advice	Outcome (Subjective)
Baseline (BT) 25 Jan 2023 Day 0	1. *Sarpagandha Ghanavati* (250 mg) 1 tab BD after meal 2. *Pippalimoola Churna* 3 gm with milk once at night 3. *Brahmi* 2gm+ S*hankhapushpi* 1 gm twice with milk Telmisartan: 40 mg once daily	Light/easily digestible, calorie-restricted diet advised. Salt restriction recommended. Regular sleep schedule, physical activity (brisk walk, Suryanamaskar), stress reduction measures (*Shirobhynaga*) advised.	No specific symptoms reported. Persistently elevated blood pressure.
07 Feb 2023 Day 14	Repeat 1,2,3 4. *Panchatikta Kwatha*- 30ml on empty stomach 5.*Triphala Guggulu* (500 mg)-2-tab empty stomach with *Kwatha* Telmisartan 40 mg once alternate days	Advised continuing dietary regulation, physical activity, and stress management practices.	Patient reported good tolerability to treatment. No new complaints.
21 Feb 2023 Day 28	Repeat 1,4,5 Telmisartan: 20 mg once on alternate days	Advised continuing dietary regulation, physical activity, and stress management practices.	Improvement in overall well-being and reduction in mental stress.
(AT-1) 07 Mar 2023 Day 42	Same treatment continued. Telmisartan: Discontinued	Reinforcement of dietary and lifestyle recommendations.	Patient reported feeling lighter, subjectively improved.
21 Mar 2023 Day 56	Treatment continued with regular monitoring. Telmisartan: Discontinued	Compliance with diet and lifestyle advice maintained.	Improvement in perceived stress, general well-being.
(AT-2) 04 Apr 2023 Day 70	Continuation of treatment protocol. Telmisartan: Discontinued .	Continued adherence advised.	Clinical improvement maintained with satisfactory blood pressure control

Follow up and outcome

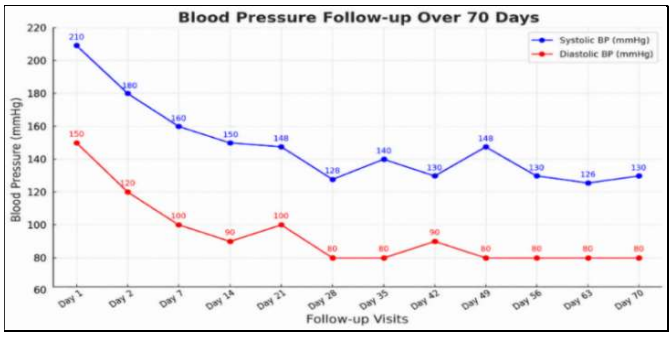
During the treatment period, follow-up consultations were conducted at regular intervals to monitor treatment adherence, clinical status, and blood pressure. Periodic assessments of the lipid profile and perceived stress level were also carried out to evaluate changes in associated cardiovascular risk factors. The patient adhered satisfactorily to the prescribed therapeutic regimen, dietary modifications, and lifestyle recommendations throughout the study period. Progressive clinical improvement was observed during successive follow-up visits, accompanied by better overall well-being and reduced psychological stress. No adverse drug reactions, or treatment-related complications were observed during the entire follow-up period.

Table 2. Changes in Objective Parameters During Follow-up

Parameter	BT (Before Treatment) 25/01/2023	AT-1 (Interim Assessment) 07/03/2023	AT-2(Final Assessment) 04/04/2023
Blood Pressure (mmHg)	210/150	140/80	126/80
Perceived Stress Scale (PSS)	31	28	20
BMI	30.09	28.4	27.7
Cholesterol (mg/dL)	248	152	127
Triglycerides (mg/dL)	448	325	145
S. HDL Cholesterol (mg/dL)	47.6	27.5	32.6
S. LDL Cholesterol (mg/dL)	110.6	59.5	65.4
S. VLDL Cholesterol (mg/dL)	89.6	65	29



Graph: 1: BP Monitoring chart



BP Monitoring chart

DISCUSSION

Ayurveda does not describe hypertension as a distinct disease entity; however, its clinical manifestations can be understood through the derangement of *Vata Dosha*, particularly *Vyana Vata*, in association with *Pitta Dosha, Rakta Dushti*, and *Manasika Nidana* such as *Chinta* (anxiety), *Krodha* (anger), *Bhaya* (fear), and mental stress. Excessive intake of *Lavana Rasa*, *Guru-Snigdha Ahara*, sedentary habits, disturbed sleep, obesity, and psychological stress contribute to *Dosha* imbalance and *Srotodushti*, ultimately resulting in elevated blood pressure. Ayurvedic approach emphasizes *Nidana Parivarjana*, correction of *Dosha* imbalance, improvement of *Agni*, stress reduction, and promotion of healthy lifestyle practices.

From a modern perspective, dyslipidaemia contributes to hypertension through endothelial dysfunction, oxidative stress, vascular inflammation, and arterial stiffness. Elevated levels of LDL cholesterol and triglycerides promote lipid deposition within the vascular endothelium, leading to reduced nitric oxide bioavailability and impaired vasodilatation. Simultaneously, chronic vascular inflammation and oxidative stress increase peripheral vascular resistance and activate the renin–angiotensin–aldosterone system (RAAS), resulting in sustained elevation of blood pressure.

From an Ayurvedic perspective, excessive intake of *Snigdha, Guru, Madhura Ahara* along with *Avyayama* leads to *Kapha-Meda Vriddhi* and *Medovaha Srotodushti*.[5] The accumulation of *Meda* causes *Srotorodha* (microvascular obstruction), which obstructs the normal movement of *Vyana Vata*. Simultaneously, psychological stress causes aggravation of *Raja* and *Vata*. The aggravated *Vyana Vata* circulating through obstructed channels results in *Rakta Dushti*, *Dhamani Pratichaya*, and *Rakta Gati Vriddhi*, ultimately leads to severe hypertension. Various Ayurvedic formulations having *Hridya*, *Medhya*, *Rasayana* and *Rakta-Prasadana* properties used in hypertension. Along with dietary regulation, Yoga, Pranayama, and lifestyle modifications, these interventions may contribute to improved cardiovascular health and blood pressure regulation.

According to the principle described by *Charaka*, physiological factors that maintain health in their normal state become responsible for disease when they undergo pathological alteration.[6] In the present case, *Rakta*, which normally facilitates nourishment and circulation, appears to have undergone *Rakta Dushti* secondary to obesity, dyslipidaemia, and psychological stress. According to *Sushruta*, *Rakta* possesses normal qualities such as *Visrata, Dravata, Raga, Spandana,* and *Laghuta*.[7] In the present case, obesity and dyslipidaemia may have caused *Rakta Dushti*, resulting in impairment of the normal *Laghuta* (free-flowing nature) and *Spandana* (dynamic circulatory activity) of *Rakta*. This may have led to increased circulatory resistance, altered vascular dynamics, and disturbed *Vyana Vata* function, ultimately contributing to the development of severe hypertension.

The present case of hypertensive urgency was associated with obesity, dyslipidaemia, psychological stress, and a previous history of hypertension. From a contemporary perspective, obesity promotes a chronic low-grade inflammatory state through adipokines such as tumour necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), and

leptin. These mediators contribute to endothelial dysfunction, oxidative stress, and activation of the renin–angiotensin–aldosterone system (RAAS) and sympathetic nervous system.[8] Concurrent dyslipidaemia further aggravates vascular dysfunction by promoting endothelial injury and arterial stiffness.[9] Persistent activation of these mechanisms increases systemic vascular resistance and contributes to sustained elevation of blood pressure, ultimately leading to severe uncontrolled hypertension.[10]

The therapeutic approach in the present case appears to have targeted multiple pathogenic mechanisms. *Panchatikta Kwatha* was administered as the principal *Srotoshodhaka* formulation. *Tikta Rasa* is known to possess *Lekhana, Kleda-Shoshana*, and *Medohara* properties, thereby reducing *Ama*, correcting *Medovaha Srotodushti*[11] and improving channel patency. Experimental studies have demonstrated anti-inflammatory, antioxidant, and endothelial protective activities of several ingredients of *Panchatikta* formulations, which may contribute to vascular protection.[12]

Triphala Guggulu likely acted as the primary *Medohara* and *Lekhana* agent. *Guggulu* has been reported to possess hypolipidemic, anti-inflammatory, antioxidant, and anti-atherogenic properties.[13] Clinical and experimental studies have shown reductions in serum cholesterol and triglyceride levels following *Guggulu* administration.[14] By reducing *Meda* accumulation and *Dhamani Pratichaya*, *Triphala Guggulu* may have improved vascular compliance and decreased peripheral vascular resistance.[15]*Triphala* further contributes through antioxidant activity and endothelial protection.[16] In this case, most lipid parameters improved substantially, although HDL levels remained suboptimal.

Sarpagandha Ghanavati was used during the initial phase for rapid blood pressure control. The alkaloid reserpine present in *Sarpagandha* depletes catecholamines from sympathetic nerve endings, resulting in reduced sympathetic overactivity, decreased peripheral vascular resistance, and lowering of blood pressure.[17] Considering that sympathetic hyperactivity is a major component of severe uncontrolled hypertension, *Sarpagandha* may have directly interrupted this pathogenic pathway.[18]

Pippalimoola Churna was administered primarily for *Deepana* and *Pachana*. *Mandagni* and *Ama* formation are key events in the Ayurvedic pathogenesis of *Medoroga* and hypertension.[19]

Brahmi and *Shankhapushpi* were administered to address the psychological component of the disease.[20] Chronic stress activates the hypothalamic–pituitary–adrenal axis and sympathetic nervous system, contributing to sustained hypertension.[21] Experimental studies have demonstrated anxiolytic, adaptogenic, neuroprotective, and anti-stress properties of both Brahmi and Shankhapushpi.[22] Their use may have reduced stress-induced sympathetic activation and supported autonomic balance.

The sequential reduction in blood pressure observed during follow-up suggests that the intervention acted at multiple levels of pathogenesis. Initially, *Sarpagandha* may have contributed to controlled sympathetic overactivity and severe hypertension. Subsequently, *Panchatikta Kwatha* and *Triphala Guggulu* addressed *Medovaha Srotodushti*, dyslipidaemia, inflammation, and vascular dysfunction. *Pippalimoola* corrected *Agnimandya*, while *Brahmi* and *Shankhapushpi* reduced stress-related autonomic dysregulation. Thus, the therapeutic strategy appears to have broken the pathogenesis at several critical points, resulting in sustained improvement in blood pressure over the 70-day follow-up period.

CONCLUSION

This case highlights the role of *Ayurveda* in the management of hypertensive urgency associated with obesity, dyslipidaemia, and stress. The treatment strategy appeared to break the pathogenesis at multiple levels by reducing *Ama* and *Meda*, correcting *Srotorodha*, improving *Rakta* and *Vyana Vata* functions, and mitigating stress-related autonomic dysregulation. This single case suggests a potential role of an integrative Ayurvedic approach and warrants further investigation through controlled clinical studies.

Patient Perspective

The patient reported satisfaction with the treatment and observed gradual improvement in blood pressure control, body weight, stress levels, and overall well-being during the follow-up period. He reported good adherence to the prescribed medications, dietary recommendations, and lifestyle modifications.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical information. Patient anonymity has been maintained.

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