

A COMPARATIVE LITERARY STUDY OF RAKTAPITTA AND ESSENTIAL HYPERTENSION WITH SPECIAL REFERENCE TO ETIOPATHOGENESIS

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Article Received on 12 June 2026,
Article Revised on 03 July 2026,
Article Published on 16 July 2026,
<https://doi.org/10.5281/zenodo.21356462>

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How to cite this Article: Vd. Tejas Dharmendra Bhortake^{*1}, Vd. Parshuram Pawar², Vd. Pritam Pawale³, Vd. Vrushali Dani⁴, Vd. Santoshi Patil⁵. (2026). A Comparative Literary Study of Raktapitta and Essential Hypertension With Special Reference To Etiopathogenesis. World Journal of Pharmaceutical Research, 15(14), 147-154.

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ABSTRACT

Background: Essential hypertension is one of the leading causes of cardiovascular morbidity and mortality worldwide. Although Ayurvedic scholars have commonly interpreted hypertension through Vata-dominant conditions such as Raktagata Vata^[1], the etiopathogenesis of Raktapitta exhibits several striking similarities with the hemodynamic and vascular alterations observed in essential hypertension.^[2,3] Exploring these parallels may provide a broader Ayurvedic understanding and therapeutic perspective. **Aim:** To conduct a comparative literary study of Raktapitta and Essential Hypertension with special reference to their etiopathogenesis (Samprapti) and to evaluate the applicability of Hetuviparita Chikitsa in the management of hypertension. **Materials and Methods:** This study was carried out through a critical review of classical Ayurvedic texts including the Charaka Samhita^[8], Sushruta Samhita^[10], Ashtanga Hridaya^[9], and relevant contemporary

literature on essential hypertension.^[2,4] Concepts related to Nidana, Samprapti, Rakta Dhatu, Srotodushti, Dhatu Swedana, and Raktapitta Chikitsa were analyzed and compared with modern pathophysiological mechanisms involved in hypertension. **Results / Discussion:** The review revealed significant conceptual similarities between the pathogenesis of Raktapitta and essential hypertension.^[2,3] Ayurvedic concepts such as Agnimandya, Saamta, Dhatu Swedana, Swapramana Vriddhi, and Srotodushti correspond to metabolic dysfunction, hypervolemia, endothelial stress, increased vascular resistance, and vascular remodeling described in modern medicine. The qualitative alteration of Rakta by vitiated Pitta and the development of Sira-Kaathinya closely resemble endothelial dysfunction and arterial stiffness. Furthermore, the terminal manifestations of Raktapitta show parallels with hypertensive emergencies and target-organ damage. Analysis of Hetuviparita Chikitsa suggests that classical Raktapitta-hara therapies may possess therapeutic relevance in addressing the underlying pathophysiological factors of hypertension. **Conclusion:** The etiopathogenesis of essential hypertension demonstrates considerable similarity with the pre-hemorrhagic stages of Raktapitta. Understanding hypertension through a Pitta-Rakta hemodynamic framework offers a novel Ayurvedic perspective and supports the potential role of Raktapitta-hara interventions in the prevention and management of vascular dysfunction and elevated blood pressure.

KEYWORDS: Raktapitta, Samprapti, Hetuviparita Chikitsa, Rakta Dhatu, Sira-Kaathinya, Rakta-Prasadana, Saamta.

1. INTRODUCTION

Lifestyle-induced cardiovascular and metabolic disorders present a massive global health burden, with Essential Hypertension standing out as a primary risk factor for cardiovascular morbidity and mortality worldwide. Characterized by a chronic, idiopathic elevation of systemic arterial pressure, modern medicine attributes its development to a complex interplay of genetic predisposition, sympathetic nervous system overactivity, and endothelial dysfunction. Despite advanced pharmacological interventions, understanding early-stage vascular stress and multi-system involvement remains a clinical challenge, necessitating an exploratory look into ancient holistic paradigms.

In Ayurveda, while no single term directly maps to "essential hypertension," the clinical manifestations, systemic triggers, and long-term complications overlap significantly with the syndrome of Raktapitta.^[2] Classified as a Mahagada (a major, rapidly progressing disease) by

A deeper exploration of its Samprapti (etiopathogenesis) reveals that actual bleeding is merely the terminal phase (Roopavastha) of a deeper, systemic vascular pathology.^[4,6] The initial stages involve Dhatu Swedana (exudation of tissue fluids into the bloodstream) and Srotodushti (microvascular changes/obstructions), which structurally mirror modern concepts of hypervolemia, increased peripheral resistance, and arteriosclerosis. This comparative literary study aims to evaluate the shared etiological roots (Nidana), parallel pathophysiological pathways (Samprapti), and treatment principles of Raktapitta and Essential Hypertension.

To contextualize a pressure crisis within the cardiovascular network, the embryological origin of its central pump must be understood through classical texts.

Acharya Sushruta states that during embryogenesis, the heart (Hridaya) is sculpted directly from the Rakta and Kapha^[10]:

This description allegorizes the extreme hemodynamic churning, kinetic energy, and turbulence required to shape the hollow muscular walls of the heart from the primitive vascular tube. Because the heart acts as the root of both Rasa Vaha and Rakta Vaha Srotas, any chronic qualitative or quantitative alteration in the circulating blood tissue directly impacts cardiac remodeling. In essential hypertension, this manifests as left ventricular hypertrophy—a modern parallel to the heart struggling against a corrupted, turbulent fluid medium.

Furthermore, the systemic channels (Sira and Dhamani) are structurally generated and sustained by the essence of blood tissue, as recognized under maternal factors (Matruja Bhava)^[8]:

[illegible]

Because the blood vessels are structurally derived from and nourished by Rakta Dhatu, their elasticity, compliance, and health depend entirely on the purity of the blood fluid. Chronic Raktadushti (blood vitiation) causes a progressive decline in vessel wall quality, replacing natural suppleness (Mriduta) with stiffness (Sira-Kaathinya), which mirrors the pathology of arteriosclerosis and loss of arterial compliance.

Step	Ayurvedic Pathogenesis (Samprapti)	Contemporary Pathophysiological Equivalent	Hemodynamic Impact on Vascular Network
01	Agnimandya (Impaired/Stagnant Digestion)	Primary Metabolic Dysfunction / Decreased Basal Metabolic Rate	Initiates the formation of undigested toxic metabolites (Ama).
02	Production of Saam Rasa (Toxic Plasma Fraction)	Circulating Endotoxemia / High Solute Concentration in Blood	Increases systemic osmotic pressure within the vascular compartment.
03	Triggers Dhatu Swedana (Fluid Exudation from Tissues)	Trans-capillary Fluid Shift / Interstitial Fluid Influx	Surrounding tissues (Mamsa, Meda) liquefy due to intense Pitta heat, leaching fluid into blood vessels.
04	Vitiated Pitta Infuses Gunas (Tikshna/Laghu displace neutrality)	Endothelial Shear Stress / Plasma Viscosity Alterations	Inflammatory attributes (Tikshna) attack the vascular endothelium; loss of laminar flow.
05	Pathological Hypervolemia (Swapramana Vriddhi)	Increased Plasma Volume / Dietary Sodium-Water Retention	Direct quantitative expansion of the circulating blood fluid volume. ^[8]
06	Srotodushti (Vascular Channel Obstruction)	Higher Vascular Pressure / Increased Total Peripheral Resistance	The heart pumps a high-volume, turbulent fluid through non-compliant, stiffened vessels.
07	Vimargagamana (Terminal Rupture/Deflection)	Hypertensive Crisis / Target Organ Damage	Acute vascular failure manifesting as epistaxis, hemorrhagic stroke, or retinopathy.

Under physiological conditions, healthy blood (Shuddha Rakta) possesses distinct balancing attributes that protect the vascular endothelium.^[8,9]:

[illegible]

In the pathogenesis of Raktapitta, consumption of Ushna, Teekshna, and Vidahi (hot, sharp, and burning) diets corrupts Pitta Dosha, which then floods the Rakta Dhatu^[8]:

[illegible]

The infusion of Tikshna (sharp/penetrating) and Laghu (light/hyper-mobile) Gunas into the bloodstream displaces the natural Anushnasheetatva profile. Mechanistically, Tikshna Guna acts as a chemical and inflammatory stressor on the endothelial lining, while Laghu Guna alters blood viscosity and flow dynamics, mimicking endothelial shear stress and micro-vascular inflammation observed in early-stage hypertension.

The volumetric pressure increase in this disease process is driven by metabolic toxicity, or Saamta. When systemic or tissue-level digestive fire (Agni) declines, undigested metabolic fractions (Ama) combine with the circulating plasma and blood (Saam Rasa/Rakta).

This systemic accumulation of Ama causes Dhatu Swedana—a process where the intense heat of the accompanying Pitta causes neighboring tissues (Mamsa, Meda) to exude their fluid fractions directly into the vascular channels. This causes a rapid, pathological expansion

“...

Charaka Samhita, Nidana Sthana,
Chapter 2, Verse 4^[8]

4. Discussion: Vascular Remodeling and Target Organ Damage

This structural decline marks the transition from simple functional high blood pressure to advanced, fixed Essential Hypertension. The terminal stages of Raktapitta, characterized by the bursting of blood through upper or lower pathways (Vimargagamana), perfectly match acute hypertensive emergencies and target-organ damage^[2,6], including epistaxis, hypertensive retinopathy (Netragata Raktapitta), hematuria, and hemorrhagic cerebrovascular accidents (strokes).

In Ayurvedic therapeutics, an accurate understanding of Samprapti (pathogenesis) is valuable because it directly guides Hetuviparita Chikitsa—treatment that works by directly countering, reversing, or neutralizing the specific etiological factors (Hetus) and qualitative shifts (Gunas) that triggered the disease.

When essential hypertension is analyzed through the lens of Raktapitta, the primary causative factors are identified as the influx of Ushna (hot), Tikshna (sharp), and Laghu (light) qualities, alongside Saamta (metabolic toxicity) leading to Swapramana Vriddhi (pathological hypervolemia).^[3,8] Therefore, therapies and drugs traditionally indicated for Raktapitta possess the precise pharmacodynamics needed to counter these exact hypertensive triggers.^[6]

Rather than relying purely on symptomatic blood pressure reduction, prescribing Raktapitta-hara drugs offers a root-cause solution for hypertensive patients by systematically reversing vascular stress.^[2,6]

5.1 Mechanisms of Raktapitta-hara Drugs in Hypertension

By applying Hetuviparita principles, specific classes of classical Raktapitta formulations can be repositioned as highly effective anti-hypertensive agents:

- **Sheeta Virya (Cooling Potency) & Tikta-Kashaya Rasa (Bitter/Astringent Tastes):** Drugs like Vasa (*Adhatoda vasica*), Chandan (*Santalum album*), and Sariva (*Hemidesmus indicus*) directly counter the Ushna and Tikshna qualities of Pitta.^[6] In modern terms, they act as potent vascular anti-inflammatories, reducing endothelial oxidative stress and soothing the overactive sympathetic nervous system.
- **Rakta-Prasadana (Blood-Purifying & Soothing) Agents:** Herbs such as Arjuna (*Terminalia arjuna*) and Amalaki (*Emblica officinalis*) simultaneously pacify Pitta and nourish the Rakta Dhatu. Arjuna, a premier Raktapitta drug, contains coenzyme Q10 and flavonoids that improve cardiac output efficiency and reverse Sira-Kaathinya (arterial stiffness) by improving endothelial nitric oxide dilation.
- **Deepana-Pachana & Lekhana (Metabolic Cleansing) Properties:** Formulations that clear Saamta break down the stagnant Ama causing fluid shifts. By clearing these channels, they relieve the osmotic pull that expands plasma volume, effectively acting as natural, tissue-safe diuretics (Mootrala) that treat hypervolemia without draining vital cellular fluids.

5.2 Paradigm Shift in Management

By implementing Hetuviparita Chikitsa, clinicians can confidently utilize time-tested Raktapitta formulations—such as Vasaguluchyadi Kashayam, Arjunarishta, or Kamadudha Rasa—for patients presenting with essential hypertension^[6], especially those displaying clear signs of Pitta dominance (e.g., flushing, heat intolerance, burning sensations, or an aggressive, stressful lifestyle). This literary bridge transforms a classical hemorrhagic management protocol into a modern strategy for early vascular protection and long-term blood pressure control.

6. CONCLUSION

By shifting the clinical lens from a purely Vataja neural model to a Pitta-Rakta hemodynamic

model, Essential Hypertension can be re-evaluated as an early functional equivalent to the pre-hemorrhagic stage of Raktapitta.^[2,3] The embryological vulnerability of the heart (Raktakapha)^[10], the structural reliance of the vessels (Rakta-nirmit Sira)^[8], and the physiological shifts induced by Saamta and Tikshna Guna provide a robust framework explaining high systemic pressure. Utilizing Hetuviparita Chikitsa allows the integration of Raktapitta-hara drugs into the modern anti-hypertensive toolkit^[6], targeting fluid volume overloads, endothelial stress, and arterial hardening at their fundamental root.

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