



Nidana of Hypertension in Ayurveda – A Conceptual Review

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Abstract

Hypertension is a major global public health problem and a leading risk factor for cardiovascular morbidity and mortality. In Ayurveda, hypertension is not described as a single disease entity but can be understood under the concepts of *Rakta Dushti*, *Raktavaha Srotodushti*, *Vata Prakopa*, *Pitta Vriddhi*, and *Manasika Nidanas*. From the Nidāna perspective, faulty dietary habits (*Ahara*), improper lifestyle practices (*Vihara*), psychological stress (*Manasika Bhavas*), and hereditary factors (*Beeja Dosha*) play a crucial role in the pathogenesis of hypertension. Excessive intake of salty, sour, and spicy foods, alcohol consumption, sedentary lifestyle, suppression of natural urges, and chronic stress lead to vitiation of *Vata* and *Pitta Dosha*, resulting in increased vascular resistance and impaired circulation. The involvement of *Raktavaha Srotas* and *Hridaya* as the *Mula Sthana* further explains the cardiovascular manifestations seen in hypertension. Understanding hypertension through Ayurvedic Nidāna provides a holistic insight into its multifactorial etiology and helps in designing preventive and therapeutic strategies based on dietary regulation, lifestyle modification, stress management, and Dosha balancing therapies.

Key Words: Accelerated Hypertension, Nidan, Vyadhi.

Introduction

In General About HTN

In the contemporary era of rapid modernization, individuals are experiencing increasing levels of stress. People are often too busy to engage in self-reflection and tend to neglect their overall health and well-being. While technological progress has improved convenience and efficiency in daily life, it has also contributed to the growing burden of lifestyle-related disorders. Unhealthy habits and persistent psychological stress disrupt the equilibrium of the mind and body through psychosomatic mechanisms, leading to the development of chronic lifestyle diseases such as diabetes and hypertension. Among these, hypertension has emerged as a major global public health challenge owing to its high prevalence worldwide. ¹

Hypertension is a non-communicable disease that significantly contributes to cardiovascular morbidity and mortality, including heart disease, stroke, renal failure, and premature disability and death.² According to the Global Burden of Disease (GBD) 2019 estimates, elevated blood pressure is the leading metabolic risk factor worldwide, accounting for

approximately 19% of all global deaths. Cardiovascular diseases are responsible for nearly 17.9 million deaths annually, representing almost one-third of total global mortality. ³The World Health Organization (WHO) reports that the number of adults living with hypertension increased from 594 million in 1975 to 1.13 billion in 2015, with the greatest rise observed in low- and middle-income countries. ⁴

HTN through Ayurveda Perspectives

Hypertension is an instrumental disease which is diagnostic invention of modern science. Ayurveda, on the other hand, originated during the Vedic period and did not have means to measure blood pressure. Therefore, there are no direct mentions of hypertension in Ayurvedic classics, either by name or in terms of its pathophysiology. Acharya Charaka has quoted that the physician can initiate the treatment after assessing the Hetu, Sthana and Samprapti without giving the importance to merely naming a disease. ⁵

A critical review of the literature shows that the Ayurvedic pathogenesis of hypertension has been associated with conditions such as Raktagata Vata, Siragata Vata, Avrita Vata, Dhamani Prapurana, Rakta Vikshepa, Vyana Prakopa, Raktamada, Uchharaktachapa, and Vyana Atibala. Different Ayurvedic scholars have used various terms for hypertension and adopted diverse perspectives; however, all agree that the primary pathogenesis in hypertension involves Rakta (blood) and the blood vessels. Given the advanced understanding of hypertension in modern medicine. ⁶

It is important to integrate this knowledge with Ayurvedic principles for a more comprehensive understanding of the disease.

Ayurvedic Perspective on Blood Pressure Blood pressure is the pressure applied by the blood against the walls of the arteries and is determined by cardiac output (CO) and peripheral vascular resistance (PVR). Cardiac output depends on the stroke volume (SV) and heart rate where stroke volume is the volume of blood ejected during each systole, which is influenced by preload, afterload, and the contractile power of myocardium. Whereas, PVR is the force provided by the vasculature that heart has to overcome to propel blood forward. High blood pressure is primarily a hemodynamic disorder. The Vyutpatti of the heart explains its physiological function. The three syllables - Hri, Da, and Ya - that form the word Hridaya symbolize three essential qualities: Aharana (receiving), Dana (giving), and Ayana (movement).

Acharya Sushruta made an effort to conceptualize circulation based on direction. According to him, circulation from the Hridaya occurs in three directions: Shabda (Tiryagamitva), Archi (Urdhwagamitva), Jala (Adhogamitva) Santanavat.

In Ayurveda, Rakta dhatu (blood tissue) is regarded as a Drava (liquid) Dhatu.

Therefore, it has natural property of flowing. To ensure blood reaches the peripheral tissues, extra force such as Nodana, Abhigata, Dhamana, and Sarana is needed in addition to the blood's natural flow. This force is generated by the heart's contractions and relaxations and the pulsations of the arteries. The pressure created by this circulatory activity is referred to as blood pressure. According to Ayurveda, three Doshas – Vata, Pitta and Kapha; seven Dhatus (Rasa, Rakta etc.) and the three Malas are viewed as the primary factors governing all bodily functions. Therefore, to comprehend blood pressure from an Ayurvedic perspective, it is essential to consider Vata (Prana and Vyana), Pitta (Sadhaka), Kapha (Avalambaka), Dhatus such as Rasa and Rakta, the Srotas through which the blood flows, as well as the Hridaya, Ojas, and the functions of Mana.

Factors Regulating Normal Blood Pressure Role of Tridosha in regulation of blood pressure Ayurveda identifies Tridosha- Vata, Pitta, and Kapha as three vital energies that govern body's essential regulatory functions. They govern all physiological, psychological, and pathological functions. Blood pressure (BP), though not explicitly described in classical Ayurvedic texts, can be interpreted in terms of Tridoshic balance. ⁷⁻¹¹

Pathogenesis of Hypertension Essential hypertension is defined as chronic elevation in arterial blood pressure (BP) > 140/90mmHg with no definable causes. As previously noted, the primary factors influencing blood pressure are cardiac output and peripheral resistance. Therefore, an increase in blood pressure occurs when either cardiac output or peripheral resistance rises. Hypertension, can develop due to various contributing factors such as excessive intake of salt, alcohol, meat, oily, heavy, and incompatible foods.

These dietary habits result in imbalance of Kapha and Pitta Doshas. When Kapha is aggravated, it may result in the accumulation of Ama, an undigested metabolic residue.

Ama can raise plasma osmolality and stimulate physiological systems like the antidiuretic hormone (ADH), the renin-angiotensin-aldosterone system (RAAS), and atrial natriuretic peptide, all of which work to regulate sodium and water balance in the body.

Impaired sodium regulation by the kidneys can cause reduced excretion of sodium, leading to salt and water retention. This, subsequently expands the plasma and extracellular fluid volumes, thereby increasing cardiac output. Additionally, Ama may obstruct bodily channels (srotas), resulting in the disturbance of Vyana Vayu, which can further contribute to the onset of hypertension. In elderly individuals, Vata aggravation may occur as a result of Dhatu Kshaya or Avarana, where Kapha and/or Pitta act as the primary causative factors, eventually leading to secondary vitiation of Vata.

Dysfunction of the autonomic nervous system, which contributes to elevated blood pressure, can be interpreted as a manifestation of Vata Dushti. Additionally, aggravated Vata reduces vascular elasticity and elevate peripheral resistance, contributing to high blood pressure. Chronic alcohol consumption, prolonged intake of fermented foods, and other factors that aggravate Pitta can also contribute to the development of hypertension. The underlying pathophysiological process associated with Pitta Dushti involves increased vasoconstriction resulting from hormonal imbalances, which subsequently raises peripheral resistance.

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