

REVIEW ARTICLE

Understanding Pre-hypertension and its Management through Ayurveda

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ABSTRACT

Modernization has been occurring in terms of technology, lifestyles, as well in medical field. Yet Ayurveda is still prevalent in today's generation with all the principles and knowledge it provides. One such concept is *Shatkriyakal*. A peculiar observation in today's era of modernization is that unhealthy lifestyles have led to inculcation of various diseases in us. Amongst them, primarily Hypertension is a very common and majorly diagnosed disease amongst young adults as the age group has reduced from 40-50 years to 30-40 years as well. As per Ayurveda, *Rakta* and *Pitta* have *ashrayashrayi bhava*, thereby almost sharing the same *hetu* for its *vikruti*. This study has been chosen to enlighten about *Rakta* and *Pitta dushti* w.s.r to *RaktaPitta*, *Raktavridhi*, *Rakta dushti*, *Pitta prakopa*, *Pitta dushti* along with pre-hypertension as per the references available in ayurvedic classical literatures.

Key Words *Rakta, Pitta, Hypertension, Pre – hypertension, Shatkriyakal*

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INTRODUCTION

Hypertension has become a very common disease in today's era. About 1 in 4 adults have hypertension and are under medication. It typically develops over the course of many years. Hypertension is associated with few or no symptoms. But without any symptoms also, it damages the blood vessels of brain, eyes, heart and kidneys. Therefore, early detection is of prime importance during the routine check ups. Pre- hypertension poses significant clinical and public health challenges for both economically developing and developed nations. Because of its silent nature, the prevalence of Pre- hypertension

is underreported. Ayurveda, on the other hand, emphasizes on स्वस्थस्य स्वास्थ्य रक्षणं आतुरस्य विकार प्रशमनं च॥. This shows that preventive measures have been the primary goal for maintaining one's health. Preventive measures like *dincharya*, *rutucharya*, *aahar vidhi vidhaan*, etc. have been mentioned. In the same way, early detection of diseases in Ayurveda is mentioned through the unique concept of *Shatkriyakal*. Considering the concepts of *purvarupa* and *sthaansamshraya*, early diagnosis of this disease will be helpful in increasing the chances of curing completely, rather than having it for a lifetime.

REVIEW ARTICLE

AIM

To study the concept of pre- hypertension with its Ayurvedic management w.r.t *Shatkriyakal*.

OBJECTIVES

1. To study the concept of pre- hypertension.
2. To study how Ayurveda plays a role in pre- hypertension.

MATERIALS AND METHODS

The literature search was performed using the following electronic database: Google, Google Scholar, PubMed, Science Direct, Cochrane Library, Different Research Journals using keywords like *RaktaPitta*, *Pitta dosha*, *Rakta dushti*, *Shatkriyakal*, pre- hypertension, Hypertension. Articles containing research done on *Pitta* and its relation with *Rakta dhatu* were reviewed, screened and used for deriving conclusion in this article. Alongside, Ayurveda classical literatures like Charak Samhita, Sushruta Samhita, Ashtang Hrudaya, Madhav nidana were referred for the same.

Pre – hypertension:

Prehypertension, also known as high normal blood pressure and borderline hypertensive is a medical classification for cases where a person's blood pressure is elevated above optimal or normal, but not to the level considered hypertension¹. Prehypertension is a common condition across age, sex, ethnicity, and geographical boundaries in countries with developed and developing economies worldwide. Individuals with prehypertension have a twofold

to threefold higher risk of developing hypertension than those who are normotensive. Several study design factors influence annual transition rates from prehypertension to hypertension, including the duration of follow-up and whether the population includes the full range of prehypertension (120–139/80–89 mmHg) or only the upper range (130–139/85–89mmHg, referred to as stage 2 prehypertension)². People with high blood pressure may not feel symptoms.

Things that increase the risk of having high blood pressure (**RISK FACTORS**)^{3, 4, 5}:

- Older age
- Genetics
- Being overweight or Obese
- Not being physically active
- High salt diet
- Drinking too much alcohol
- Stress: too much stress may contribute to increased blood pressure .Also too much stress can encourage behaviours that increase blood pressure, such as poor diet, physical inactivity, and using tobacco or drinking alcohol etc.
- Social and economic factors: Research shows that factors such as income, education, type of job also contribute to risk of high blood pressure. Working early or late shifts is one example of social factor that can raise the risk of hypertension in the population.
- Race or Ethnicity: high blood pressure is more common in African American and Hispanic adults than in white or Asian adults. Compared with other racial or ethnic groups, African

REVIEW ARTICLE

Americans tend to have higher average blood pressure numbers and get high blood pressure earlier in life.

➤ Medications: Antidepressants like venlafaxine, immunosuppressant, decongestants (medicines to relieve a stuffy nose), hormonal birth control pills, and non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin or ibuprofen can all raise blood pressure.

➤ Other medical conditions: like certain tumours, chronic kidney disease, metabolic syndrome, sleep apnoea, thyroid problems, diabetes, Conn's syndrome, glomerulonephritis (damage to the tiny filters inside the kidneys, narrowing of the arteries supplying the kidney), hormone problems such as Cushing's syndrome, acromegaly, increased levels of hormone aldosterone (Hyperaldosteronism), and pheochromocytoma. Lupus (a condition in which the immune system attacks parts of the body, such as the skin, joints and organs), scleroderma (a condition that causes thickened skin, and sometimes problems with organs and blood vessels).

➤ Gender: Until age of 64, men are more likely to get high blood pressure than women are. At 65 and older, women are more likely to get high blood pressure.

Signs and Symptoms

High blood pressure causes no signs or symptoms. That's why healthcare providers call it as "silent killer"⁶. One could have high blood pressure for years and still not know about it. World health organization estimates that 46% of adults with

hypertension don't know they have it^{7, 8}. When blood pressure become 180/120mmhg or higher, one starts experiencing symptoms like:

- Headache
- Blurred vision
- Shortness of breath
- Chest pain
- Dizziness
- Nausea
- Vomiting
- Anxiety
- Confusion
- Buzzing in ears
- Heart palpitations
- Nosebleeds

Blood pressure this high is a hypertensive crisis that requires immediate medical care. If hypertension isn't treated, it can cause health conditions like kidney disease, heart disease and stroke.

Ayurveda Perspective:

As we all know that *tridosha*, *sapta dhatu* and *trimala* constitute a major role in our body. All the normal physiological aspect occurs due to these 13 entities.

“समदोष समाग्नि च समधातु मलक्रियाः । प्रसन्न आत्म इन्द्रिय मनाः स्वस्थ इति अभिधीयते ॥”

According to Ayurveda, equilibrium in the *dosha*, *dhatu*, *agni*, *mala* along with a pleasant state of *aatma* (self), *indriya* and *mana* is defined to be a healthy person⁹. This helps in smooth functioning of the body with no scope for diseases to get implanted in us. To achieve this,

REVIEW ARTICLE

Ayurveda has mentioned about the effects in the good or bad point of view regarding *aahar* and *vihar*. This shows that for maintaining a good health, correct *aahar* and *vihar* suitable for our body based on *kaal* is important. Concepts of *Dincharya* and *Ritucharya* have been quoted for the same purpose.

But, what if we don't follow it?

कालार्थकर्मणां योगो हीनमिथ्यातिमात्रकः | सम्यग् योगश्च विज्ञेयो रोग आरोग्य एक कारणं ||

Hina, *mithya* or *atimatra yog* of *kaal*, *artha*, and *karma* leads to *roga* and *samyak yog* of the same leads to *Aarogya*. *Kaal* can be divided into 2 aspects – *nityaga* and *avasthika*. *Arth* here means *vishaya* like; *shabda*, *sparsha*, *rupa*, *rasa* and *gandha*. *Kaayik*, *vaachik* and *manasik* are the 3 types of *karma*. All these elements play a major role in vitiating the *dosha- dhatu – mala* for

vyaadhi utpatti in case of *hina*, *mithya* and *atimatra yog*⁹.

In today's era, we know that hypertension is seen increasing in the individuals down the age group as well. Following is the *nidana* for pre – hypertension as per Ayurveda.

1. Hetu

Hetu or the causative factors are to be ruled out first and foremost for any disease since it is the main factor responsible for the manifestation of disease. As per WHO "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"¹⁰. Therefore, considering the physical social and mental aspect of our body, the causative factors can be divided in to 3 categories, viz. *aahar*, *vihar* and *manasik hetu*.

As we seen in table 1, here is a list of all the *hetu* mentioned in Ayurvedic classics.

Table 1 List of *aahar*, *vihar* and *manasik hetu*

<i>Mithya aahar</i>	<i>Mithya vihaar</i>	<i>Manasik hetu</i>
This includes – <i>vidaahi anna</i> , <i>amla – katu – lavana rasa pradhaanya aahar</i> , <i>ushna – teekshna – drava – kshaara</i> containing foods. Acharya Charak states that <i>Pitta</i> vitiating foods include barley, kodo millet, lima beans, black lentils, horse gram consumed with <i>kshaara</i> . Curd, whey water, sour buttermilk, sour rice gruel, meat of pig, buffalo, sheep, fish, etc. along with radish, garlic, drumsticks, mint, coriander like veggies, black gram, flat beans, sesame or mustard oil usage in foods, taro root, different types of alcohol are also mentioned. Vinegar, caffeine, nicotine in extra amounts does increase <i>Pitta dosha</i> . <i>Viruddha aahar</i> also vitiates <i>Pitta dosha</i> like milk with sour fruits or food items, consumption of milk with fish, etc.	Incorrect implementation of lifestyle or habits can also vitiates <i>Pitta dosha</i> in our body. These include – <i>ati aatap sevan</i> or <i>ati agni sevan</i> without covering ourselves, <i>vega dhaaran</i> of <i>chhardi</i> ; <i>diwasaap</i> , i.e. sleeping in the day time right after having food, <i>anashana</i> or irregular timings of eating, sleeping, waking and other activities, <i>avyaayam</i> , <i>dushita anna sevan</i> , <i>alpa udak sevan</i> , etc.	<i>Shoka</i> , <i>bhaya</i> , <i>krodha</i> , <i>ati chinta</i> like mental factors are a seat of many diseases in body.

REVIEW ARTICLE

Pitta prakopa due to *hetu sevan* of *mithya aahar* and *vihaar*



Pramanatah vruddhi of *Pitta*, thereby *dushti* of *Rakta* occurs due to *ashrayashrayi bhava*.

This affects the *moolasthaan* of *Rakta*, i.e. *yakrut* and *pliha*



Due to *prabhaav* of *yakrut* and *pliha*, *Raktavahini dhamini* is vitiated



RaktaPitta purvarupa are seen in this stage.

3. *Purva rupa*

Purva rupa or the prodromal features of diseases manifest before the actual emergence of disease.

Here, the *purva rupa* are:

Anannabhilasha, *bhuktasya vidaaha*, *shukta – amla gandha rasa udgaara*, *swarabheda*, *gaatra sadan* (exhaustion), *paridaaha*, *mukhaat dhumayan*, *aasya loha – lohit – matsya – aama gandhi*, *anga vedana*, *sheeta kamitva*, *bhrama*, *Rakta – haaridra – harit varna nayana*.

Relation with *Shatkriyakal*

Concept of *Shatkriyakal* is described in Sushrut Samhita. Word *Shatkriyakal* is formed with the combination of two words viz. *Shat* + *Kriyakal*. *Doshas* undergo abnormality due to indulgence in *mithya aahar* and *vihaar* and in turn these bring about abnormality in *Dhatu*s and produce diseases. Concept of *kriyakal* is widely described in two separate entities i.e. *Vyadhi kriyakal* and *ritu kriyakal*. *Vyadhi kriyakal* is the concept gives idea about consecutive stages of the disease and accordingly preventive measures to overcome the complications. Acharya Sushrut says, Vaidya

who knows these six stages of the *doshas* manifestation can do proper *chikitsa* i.e. prevention and cure of the disease. If physician is able to detect the changes of *doshas* in early stage like *Sanchaya* (accumulation) or *Prakopa* according to symptomatology and advice the treatment to prevent further manifestation of the disease so that disease may not become stronger¹¹.

Shatkriyakal gives us pathogenesis of the disease i.e. development of the disease, also the role of aetiological factors in increased formation of *doshas*, travelling of the *doshas* in all over the body. All these are described in six stages viz. *Chaya*, *prakop*, *prasar*, *sthansamshray*, *vyakti*, *bheda*.

Stages of the *Shatkriyakal* (*Vyadhikriyakal*)-

1. *Sanchay Avastha*-stage of accumulation.
2. *Prakop Avastha*-stage of provocation.
3. *Prasar Avastha*-stage of propagation.
4. *Sthanasamshray Avastha*-stage of localisation.
5. *Vyakta Avastha*-stage of manifestation.
6. *Bheda Avastha*-stage of chronicity.

REVIEW ARTICLE

Considering the 4th stage, i.e. *Sthanasamshray avastha*, the agitated *doshas* are moving all over the body and stuck where there is obstruction to movements. Obstruction may be due to abnormality in the *strotas* congenitally or due to consumption of aetiological factors. So these *strotas* is called as *dushya*. Hence in this stage *dosha* and *dushya* get mixed and the disease is formed whenever there is favourable condition. This stage is also called as stage of localisation of the disease at a particular site. The vitiated *doshas* circulating all over the body in association of the *vata dosha* get accumulated in *strotas* where there is *kha-vaigunya* or *strotovaigunya*. So first stage of the *sthansamshray* is *Kha-Vaigunya*. Second stage for the *sthansamshray* is *strotodushti* so *dosha dushya sammurchana* occurs. Here, the *Pitta dosha* and *Rakta dhatu* are involved thereby leading to *purvarupa* of the *vyadhi*. In all previous three stages only *doshas* are involved but *dushyas* get involved in this fourth stage only¹¹.

Sthansamshray avastha is also called as *Purvarupotpada* as the disease process starts in this stage. It gives prodromal signs and symptoms of the disease.

Management

1. **Nidanaparivarjan:** *Nidanaparivarjan* is the stoppage of *mithya aahar vihar sevana* by the patients. This helps in avoiding the further progression of disease. Especially the *Pitta* and *Vata* vitiating factors both physically and mentally are to be considered.

2. Mainly 2 lines of treatment are to be followed:

a. **Shodhan**

i) *Langhan* – Increase in *aama* in the body can vitiate *Pitta* and *Rakta*, therefore, *langhan* is the best way to for *aama pachan* in the body.

ii) *Virechan* – *Virechan* is indicated as the best way to deal with *Pitta* and *Rakta pradoshaja vikara*.

iii) *Siravedh* – Instant effect on high blood pressure is seen by releasing around 10 – 20mm hg in the blood pressure levels¹².

b. **Shaman**

In *shaman chikitsa*, the main aim is to pacify the *doshas* at their minimum level so as to prevent their increase and thereby avoiding its vitiation.

i) **Rakta Shodhaka Dravyas**

Sariva - Methanolic extract of roots acts as Antithrombotic by enhancing the release of lipoprotein lipase enzyme

Manjistha - Acts as diuretic, calcium channel blocker, antistress and Vasodilator

ii) Single Drugs

- *Sarpagandha Churna*
- *Ashwagandha Churna*
- *Jatamansi Churna*
- *Arjuna Ksheerapaka*
- *Rasona Ksheerapaka*

iii) Compound Formulations

- *Sarpagandha Ghana Vati*
- *Bramhi Vati*
- *Prabhakara Vati*
- *Arjunarishta*
- *Hridayavarana Rasa*
- *Mukta Bhasma*

REVIEW ARTICLE

Pathyapathya

- **Pathya:** Lifestyle modification like timely intake of balanced diet, more use of fruits and green vegetables. *Yava, Godhum, Mudga, Shigru, Kulatta, Karavellaka, Amalaki, Draksha*, Carrot, Apple, Pineapple etc. Regular physical exercise, daily brisk walking for half an hour. Timely sleeping and awakening. Regular practice of Yoga, Meditation.
- **Apathya:** Excessive intake of salt, intake of oily, salty, sour, spicy food items more use of butter, oily food, fried food, chillies, pickles, curd, tea, coffee, alcohol, smoking, tobacco etc¹³.

DISCUSSION

Improper lifestyle habits and consumption of food along with psychological factors with or without genetic disposition vitiates the *doshas* for the pathogenesis of pre-hypertension. Through the unique concept of *Shatkriyakal* or *purvarupa* in Ayurveda, early detection of such diseases are possible if the practitioner keeps a keen eye on such predisposing symptoms.

This will avoid the risk of further damage to the organs thereby preventing the further progression of the disease. Therefore, pre- hypertension can be understood as a psychosomatic hemodynamic condition where *Pitta* and *Rakta* are vitiated with both *sharirik* and *manasik hetus* as the cause for its occurrence.

After thorough study of the literature and fundamentals in both Ayurveda and Modern medicine, it is concluded that Ayurvedic approach to treat a disease according to its *Samprapti* should be adopted. The disease pre-hypertension is abnormality of *Rakta dhatu*, i.e. *Rakta dushti*. Therefore, the treatment modality should be initiated with shodhan procedures like *virechan* or *langhan* and further treatment should be continued with *shaman aushadhi* as well. Preventive measures like *ritucharya* or *dincharya* will help to avoid the occurrence of pre-hypertension. The treatment modalities act on *moolasthaan* itself, so it can offer more reliable results. Along with the above treatment plan, following of *pathya* and *apathya* is equally important so as to get better and quick results.

CONCLUSION

REVIEW ARTICLE

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