ISSN 2456-3110
Vol 9 · Issue 1
January 2024

JAiMS
INTERNATIONAL

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Maharshi Charaka
Ayurveda

Indexed

Journal of
Ayurveda and Integrated Medical Sciences
ISSN 2456-3110
REVIEW ARTICLE January 2024

Lifestyle Disorders and *Ayurveda* with special reference to *Raktagata Vata* (Hypertension)

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ABSTRACT

As the name indicates, lifestyle disorders are disorders or diseases caused by improper lifestyle. They are also called non-communicable diseases (NCDs). According to WHO non-communicable diseases are the cause of 73% of deaths all over the world. These diseases are classified under *Santarpanjanya Vyadhis* according to *Ayurveda*. In India, 53% of deaths and 44 % of disability are caused by non-communicable diseases. As per the WHO report it is estimated that an estimated 1.28 billion adults aged 30-79 years worldwide have hypertension, most (two-thirds) living in low and middle-income countries. *Raktagata Vata* or Hypertension is not considered as *Vyadhi* by *Ayurveda*. It is the pathophysiology involves *Prasaravastha* of *Doshas* along with *Rasa, Rakta* and *Meda Dhatu* from their respective sites to hamper respective *Srotas* for blood circulation that leads to severe and chronic diseases of the brain, heart, kidneys etc. *Ayurveda* deals with the prevention of diseases first then cure of diseases. Ayurveda mainly focuses on *Ahaar, Vihaar* and *Aushadha* for the treatment of any disease. *Ahaar* along with *Vihara* is very important for the maintenance of health. For this, concepts of *Dincharya, Ritucharya, Sadvritta* and *Rasayana* therapy have been given in *Ayurvedic* texts.

Key words: *Non-communicable diseases, Hypertension, Santarpanjanya Vyadhi, Dincharya, Ritucahrya, Sadvritta, Rasayana therapy.*

INTRODUCTION

The incidence of lifestyle diseases is increasing day by day. According to WHO report 41 million people are dying from lifestyle disorders which are equivalent to 73% of deaths all over the world each year. Each year, 17 million people die from lifestyle disorders before age 70; 86% of these premature deaths occur in low- and middle-income countries. Of all lifestyle disorders deaths, 77% are in low- and middle-income countries. Cardiovascular diseases account for most deaths, or 17.9 million people annually, followed by cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million including kidney disease deaths caused by diabetes). Diseases that are included under lifestyle disorders are mainly cardiovascular diseases, Cancer, Chronic Respiratory diseases and Diabetes. These diseases are also known as chronic diseases resulting from genetic, environmental, behavioural and physiological factors. According to *Acharya Charak,* there are three main reasons for *Rogas* - *Asatmyaendriyartha Samyoga, Prgyaparadha* and *Parinam. Asatmyaendriyartha* word comprises three words: '*Asatmya*' means which is not suitable or adaptable; *Indriya* means organs and '*Artha*' means

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Submission Date: 13/11/2023 Accepted Date: 19/12/2023

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.9.1.22

ISSN: 2456-3110 REVIEW ARTICLE January 2024

subjects. When the sensory or motor organs get exposed to inappropriate objects, the condition is termed *'Asatmyendriyartha Samyoga'*. For long-term *Asatmyendriyartha Samyoga*, one's *Buddhi* becomes *Visham* which leads to *Pragyaparadha or Prajnaparadha* or intellectual error. The errors in taking a diet, and opting for the wrong lifestyle, which is not suitable for one's constitution and health are mainly caused by intellectual error or defective judgements. This leads to indulgence in various causative factors resulting in the occurrence and recurrence of the disease. *Parinam* is *Kala* or the time in which diseases occur. *Ayurveda* has its treatment principle based on each individual's Psychophysiological constitution or *Prakriti*. *Tridosha* (*Vata, Pitta* and *Kapha*) makes this Psychophysiological constitution or *Prakriti*. When these *Doshas* are in a balanced state, they maintain health and when they are in a vitiated state, they cause diseases. Vitiation of *Doshas* is caused by not following the proper regimen as described in *Ayurvedic* texts because *Acharyas* have been given some special regimens such as *Dincharya, Ritucharya, Sadvritta, Panchakarma, Rasayana* therapy and *Prakriti*-based lifestyle for balancing *Doshas* in an Individual.

As per WHO Cardiovascular diseases account for 17.9 million deaths annually all over the world. The main cause of cardiovascular disease is Hypertension which is the major cause of premature death worldwide. As per WHO report it is estimated that an estimated 1.28 billion adults aged 30-79 years worldwide have hypertension, most (two-thirds) living in low- and middle-income countries. An estimated 46% of adults with hypertension are unaware that they have the condition. Less than half of adults (42%) with hypertension are diagnosed and treated. Approximately 1 in 5 adults (21%) with hypertension have it under control.[1]

Causes of Lifestyle Disorders

As per *Ayurveda Ahaar* and *Vihaar* play the main role in developing Lifestyle disorders. Eating food that is not *Satmya* to *Prakriti, Desha, Kala, Vaya* of an Individual and *Adhyashan*, *Shamshan*, and *Ajirnashana* plays a major role. Following an improper lifestyle or *Vihaar* like *Divaswapna*, *Ratrijagarana* lack of exercise, stress, drinking alcohol and smoking makes the condition more than worse and makes these disorders chronic. Along with that hereditary factors, gender and age cannot be controlled but other factors like smoking and drinking alcohol can be avoided from developing chronic diseases.

Definition of Hypertension

According to WHO Hypertension is diagnosed when it is measured on two different days, the systolic blood pressure readings on both days are>140mmHg and the Diastolic blood pressure readings are > 90mmHg.[1]

Ayurvedic perspective of Hypertension

Many authors have given different names for Hypertension, such as *Raktagata Vata*, *Siragata Vata*, *Avrita Vata*, *Dhamani Prapurana*, *Rakta Vikshepa*, *Vyana Prakopa, Raktamada, Uchharaktachapa, Vyana Atibala* etc. In all these terms, authors have described different points of view but everyone has accepted that there is vitiation of *Rakta* in Blood vessels in *Raktagata Vata* or Hypertension.[24]

According to *Acharya Bhela* the circulation of *Rasa* is given as,

हृदो रसो निःसरति तस्मादेति च सर्वशः । सिराभिर्हृदयं वैति तस्मात्तत्प्रभवाः सिराः ॥ (Bhel Su. 20/3)

Rasa Samvahan is done by *Hridayam*. *Siras* emerge from the heart and they do *Rasa Samvahan*. *Rasa* comes to *Hridayam* by *Siras* so they are called *Hridayprabhava.* From *Rasa,* we can Assume *Rakta* here as *Acharya Chakrapani* said 'रस द्रव धातुरुच्यते, तेन रुधिरादीनामपि भवति' with reference to Ch.Chi.15/36. *Samana Vata* causes the return of *Rasa* (blood) towards the heart. As we know the heart has an SA node that generates the electric impulse that causes the contraction of the heart (Systole). According to *Vagbhatta Vyan Vata* is situated in the heart (व्यानो हृदि स्थितः कृत्स्नदेहचारी महाजवः) causing the contraction of heart. *Acharya Charaka* also said that *Vyana Vata* is responsible for contracting the heart and distributing the *Rasa* all over the body.[12] During the

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circulation of *Rasa* (blood), the pressure exerted by *Rasa* (blood) on the walls of Blood vessels is called Blood Pressure. Blood pressure is of two types Systolic Blood Pressure and Diastolic Blood Pressure. In the Systole of the Heart Blood is distributed all over the body and in Diastole filling of blood in the heart occurs. *Prana Vata* is situated in the *Murdha* (प्राणोऽत्र मूर्धगः|) as per *Acharya Vagbhatta*. SA node generates impulse which is controlled by the Autonomic nervous system in the brain which can be correlated with *Prana Vata* situated in the brain. Diastolic blood pressure is taken under the *Kapha Dosha* because there is no ejection of blood out of the heart in this phase and *Kapha* maintains the integrity of internal organs mainly *Avalambaka Kapha* (*Vagbhatta*, Su. 12/15). So, the Diastolic blood pressure is the resistance offered by the Structure of the heart and blood vessels. As per *Vagbhatta*, the *Dhamni Dharan Karma* is done by *Prana Vata* because peripheral resistance is caused by vasoconstriction of blood vessels which is due to the Autonomic nervous system situated in the brain. The autorythemicity of impulse generation from the SA node is controlled by action potential generated by the rapid influx of Na+ ions and Ca++ ions and efflux of K+ ions[4] which can be correlated with the *Karma* of *Sadhaka Pitta* as *Pitta* is having *Tikshna* (Rapidness), *Sara* (Diffusion) and *Dravatva Guna*. *Sadhaka Pitta* is situated in the heart. The Basal Metabolic Rate (BMR) also affects Blood Pressure, this is based on Read's and Gale's Formulae which can be correlated with *Agni* or *Pachaka Pitta*. *Pranvaha Srotas, Medovaha Srotas, Udakvaha Srotas* and *Mutravaha Srotas* also play an important role in Blood circulation. Thus, the role of *Doshas, Dhatu* and *Srotas* in blood pressure has been discussed.

Role of *Tridoshas* in the regulation of Blood Pressure[3,14]

Two mechanisms make the regulation of blood pressure

One short-term mechanism that is controlled by the nervous mechanism and includes the vasomotor system. The Vasomotor system comprises of

1. Vasomotor center,
2. Vasoconstrictor fibers and
3. Vasodilator fibers.

The Vasomotor center is bilaterally situated in the reticular formation of the Medulla Oblongata and Lower part of the Pons. Vasoconstrictor Fibers include the Sympathetic division of the Autonomic Nervous system. The Vasoconstrictor fibers play a major role in Blood Pressure Regulation. They constrict the blood vessels by the release of Noradrenaline. The Vasodilator fibers cause dilatation of blood vessels by releasing Acetylcholine. These mechanisms can be correlated with *Prana Vata* situated in *Murdha* as said by *Acharya Vagbhatta.*

Kidneys perform the long-term mechanisms or Renal Mechanisms.[2,6] When blood pressure alters slowly over several days/months/years, the neural mechanism adapts to the altered pressure and loses sensitivity to the changes. In such conditions, the renal mechanism operates efficiently to regulate blood pressure in two ways-

1. By Regulation of ECF volume
2. Through the Renin-Angiotensin mechanism

In the first mechanism when blood pressure increases Kidneys secrete a large amount of salt and water through the process of Diuresis and Natriuresis causing a decrease in ECF volume and thus the blood pressure.[7]

When there is a decrease in blood pressure, then there is increased absorption of water from Renal tubules causing an increase in ECF volume and thus the restoration of blood pressure.

Thus, we can correlate the process of Diuresis and Natriuresis with the *Kleda Samvahan* as stated by *Acharya Vagbhatta* in *Ashtanga Samgrah Sutrasthana* 19/20. The whole process of the removal of *Kleda (Kapha)* or water is done by *Apana Vata* (*Ashtanghridayam* 12/9)

In the second mechanism when the blood pressure and ECF volume decrease, the renin secretion from the Kidneys increases causing the conversion of Angiotensin I to Angiotensin II. Angiotensin II causes

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constriction of afferent arteriole in the Kidneys so that Glomerular filtration reduces which in turn causes the retention of water and salt, which results in restoration of blood pressure. Angiotensin II simultaneously causes the Adrenal cortex to secrete Aldosterone. Aldosterone causes absorption of Na followed by water resulting increase in ECF volume and blood pressure to normal levels. The whole process can be correlated with the *Karma* of *Pitta*.

Some hormones such as Adrenalin, Noradrenalin, Thyroxin, Aldosterone, Vasopressin, Angiotensin, Serotonin, bradykinin, Prostaglandin, Histamine, Acetylcholine, Atrial natriuretic peptide, Brain natriuretic peptide, C- type Natriuretic peptide also help in blood pressure regulation.[14] Along with this local mechanism via Local Vasoconstrictors and local Vasodilators helps in the regulation of blood pressure. This can also be correlated with the *Karma* of *Pitta***.**

Risk Factors of Hypertension[9,11]

The exact cause of Primary hypertension or Essential Hypertension is unknown but Diet and lifestyle, Environmental factors, Stress and Genetic factors and interaction between these factors can increase the risk of Hypertension.

1. Non-Modifiable risk factors

a) Age: Blood pressure rises with age in both sexes and the rise are greater in those with higher initial blood pressure.

b) Sex: Early in life there is little evidence of a difference in blood pressure between the sexes. However, in adolescence, men display a higher average level. This difference is most evident in young and middle-aged adults. Late in life the difference narrows and the pattern may even be reversed. Postmenopausal changes in women may be a contributory factor for this change.

c) Genetic factors: There is considerable evidence that blood pressure levels are determined by part by genetic factors, and that inheritance is polygenic. The evidence is based on twin and family studies. Twin studies have confirmed the importance of genetic factors in hypertension. The blood pressure values of monozygotic twins are usually correlated with those of zygotic twins. Family studies have shown that children of two normotensive parents have a 3 % possibility of developing hypertension, whereas this possibility is 45% in children of two hypertensive parents.

2. Modifiable risk factors

a) Obesity: Epidemiological observations have identified obesity as a risk factor for hypertension. The greater the weight gain, the greater the risk of high blood pressure.

b) Salt intake**:** There is an increasing body of evidence to the effect that a high salt intake i. e. 7-8 gm/day increases blood pressure proportionately. Low sodium intake has been found to lower the blood pressure. It has been postulated that essential hypertensives have a genetic abnormality of the kidney which makes salt excretion difficult except at raised levels of arterial blood pressure. Besides sodium, there are other mineral elements such as potassium which are determinants of blood pressure. Potassium antagonises the biological effect of sodium. Other cations such as calcium, cadmium, and magnesium have also been suggested as of importance in reducing blood pressure levels.

c) Saturated fat: The shreds of evidence suggest that saturated fats raise blood pressure as well as serum cholesterol

d) Dietary fibres: Several studies indicate that the risk of CHD and hypertension is inversely related to the consumption of dietary fibre. Most fibres reduce plasma total and LDL cholesterol.

e) Alcohol Intake: High alcohol intake is associated with an increased risk of high blood pressure.

f) Physical activity: Physical activity by reducing body weight may have an indirect effect on blood pressure.

g) Environmental stress**:** The term hypertension itself implies a disorder initiated by tension or stress.

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Since stress is nowhere defined, the hypothesis is untestable. However, it is an accepted fact that psychosocial factors operate through mental processes, consciously or unconsciously, to produce hypertension. Virtually all studies on blood pressure and Catecholamine levels in young people revealed significantly higher noradrenaline levels in hypertensives than in normotensives. This supports the contention that over activity of the sympathetic nervous system has an important part to play in the pathogenesis of hypertension.

h) Socioeconomic Status: In countries that are in post transitional stage of economic and epidemiological change, consistently higher levels of blood pressure have been noted in lover socioeconomic groups. However, in societies that are transitional or pre-transitional, a higher prevalence of hypertension has been noted in upper socioeconomic groups.

i) Other factors**:** The commonest present cause of secondary hypertension in some communities is oral contraception, because of the oestrogen component in combined preparations. Other factors including noise, vibration, temperature and humidity require further investigation.

Diet and lifestyle include eating spicy and salty food with low content of K+ and packaged food rich in fats along with a sedentary lifestyle, lack of exercise, smoking and drinking Alcohol that can be correlated with *Asatmya* food and *Asatmya Vihaar* according to *Prakriti, Desha, Kala, Vaya* and *Asyasukham, Swapnasukham* (sedentary lifestyle) with *Guru, Abhishyandi, Atilavana*, *Atiushna* and *Atisnigdha Ahaar* as described in *Ayurvedic Samhitas* (*Charaka Sutra 17 & Viman 2* and *Sushruta Sutrasthana, 46*) increase the risk of Hypertension. *Bijadosha* as described in *Sharisthana* of *Charaka* relates to hereditary factors. Environmental factors include High altitude, loud noises, cold temperatures and ambient air pollutants can increase the risk of Hypertension. Stress factor includes *Kama*. *Krodha, Moha, Lobha, Irshya Mana* etc., contribute to all these factors in the development of Hypertension.[12]

Samprapti of *Raktagata Vata* (Hypertension) based on Modern View[20]

Primary Hypertension or Essential Hypertension is defined as when the Systolic pressure remains elevated above 140mm Hg and Diastolic pressure remains elevated above 90mm Hg with no definable causes. Cardiac output and Peripheral resistance are responsible for the generation of blood pressure. So, the defect in either of the two entities causes an increase in blood pressure. We have seen that the regulation of blood pressure is done by the renal mechanism, where the Kidneys do Natriuresis and diuresis.[4] When there is a defect in the Natriuresis and Diuresis mechanism then there is no excretion of salt and water causing an increase in ECF[5] and thus the blood pressure. This can be correlated with increased intake of *Atilavan, Atiushna, Atikshar Atikatu* diet causing vitiation of *Pitta* and *Rakta* (Excessive intake of pungent and salty diet) (*Charaka Chikitsa 4/6*).

The other mechanism is the Hormonal regulation of blood pressure. When there is an impaired Vasoconstriction by Hormonal imbalance or defect, it causes an increase in blood pressure. This can be correlated with *Pitta Dushti*.

Impaired functioning of the Autonomic nervous system causes an increase in blood pressure. This can be correlated with *Vata Dushti. Acharya Sushruta* has mentioned[31] in *Sutrasthana* 15 that blood vitiated by *Vata* is *Askandi* and *Shighragami. Askandi* means the dilution of the blood or low viscosity of the blood. Both these factors increase the blood pressure. Along with this *Dushita Vata* causes *Rukshata* or the hardening of blood vessels causing increased peripheral resistance that leads to increased blood pressure.

The high intake of a fat-rich diet, sedentary lifestyle and lack of exercise (*Asyasukham* and *Swapnasukham*) cause Atherosclerotic changes to blood vessels so that blood vessels lose their tone and increase peripheral resistance and thus the blood pressure. This can be correlated with *Kapha Dosha Dushti.*

Acharyas have also mentioned *Mansika Nidana* for the development of the risk of blood pressure. These

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factors have an effect on the endocrine system causing a defect in Hormones regulating blood pressure resulting in increased blood pressure. *Bijadosha* as Described by *Acharya Charaka* and *Acharya Sushruta* is a hereditary factor that can be explained by epigenetics, which transfers to the next generation.

Concept of *Avarana* in the development of *Raktagata Vata* (Hypertension)

In *Charak Samhita Chikitsa Sthana 28*, the *Avarana* concept is given for the development of diseases. *Avarana* of *Vata* is done by *Doshas and Dhatus. Vata* gets vitiated by its own *Nidana*. *Vyana Vata* is vitiated by increased intake of *Vataja Nidana*. The normal course of *Vyana Vata* is occluded by *Pitta, Kapha, Rasa, Rakta* and *Meda* (*Charak Chikitsa* 28/61-69). Hypertension due to hampered enzymatic and hormonal mechanisms decreased Na excretion, change in chemical constituents of blood and Atherosclerotic changes can be explained under *Anya Dosha Avarana* of *Vata*. The impaired functioning of the Autonomic nervous system can be correlated with *Anyonya Avarana* of *Vata* where *Vyana Vata* and *Prana Vata* obstruct each other and cause the disease. (*Charak Chikitsa* 28/200-215).

Symptomatology of *Raktagata Vata* (Hypertension)

Mild to moderate Hypertension doesn't exhibit any symptoms but when it gets worse the development of some symptoms occurs such as headache, giddiness, perspiration, insomnia etc. In Charak Chikitsa 28, the symptoms of *Raktagata Vata* are given as[12]–

रुजस्तीव्राः ससन्तापा वैवर्ण्यं कृशताऽरुचिः|

गात्रे चारूंषि भुक्तस्य स्तम्भश्चासृग्गतेऽनिले||(Ch. Chi.28/31)

1. Severe body ache
2. Feverish sensation
3. Discoloration of the body
4. Anorexia
5. Boils all over the body
6. Stiffness in the body after meals
7. Lean & thin body structure

According to WHO most people with hypertension don't feel any symptoms of hypertension. Very high blood pressure can cause headaches, blurred vision, chest pain and other symptoms. People with high blood pressure (> 180/120 or higher) can experience symptoms including :

- Severe headaches
- Chest pain
- Dizziness
- Difficulty breathing
- Nausea
- Vomiting
- Blurred vision or other vision changes
- Anxiety
- Confusion
- Buzzing in the year
- Nosebleeds
- Abnormal heart rhythms

According to commentary on *Ayurveda Dipika* of *Chakrapanidutta* by *Trikam ji*, *Vyadhi* should be called only when there are some specific symptoms. Though Hypertension in mild and moderate conditions doesn't show any specific symptoms, it is not described as *Vyadhi* in *Ayurvedic Samhitas*. It is only called *Kapha-Pittavrita Vyana Vata* or *Raktagata Vata*.[12]

According to *Acharya Sushruta Prasaravastha* is the stage where vitiated *Doshas* come out from their *Sthana* and circulate throughout the body with *Rakta*. When there is *Kha Vaigunya*, which means when there is vitiation of *Srotas, Doshas* occupy that place such as the brain, kidneys, heart, liver and other vital organs producing specific symptoms known as *Sthana Samsraya*. In *Vyaktavastha*, the disease of the specific organ is produced. In *Bhedavastha*, the disease becomes chronic. In the case of *Raktagata Vata*, *Doshas* occupy the *Pranvaha Srotas* and *Rasavaha Srotas* or Cardiovascular system, producing heart diseases, liver diseases, kidney diseases and other vital organ disease such as Coronary artery disease, Angina

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pectoris, Cardiovascular Accident, Stroke, Acute and Chronic renal Failure etc. These all are the complications of *Raktagata Vata* or Hypertension.

Complications of Uncontrolled Hypertension (WHO)[1]

- Chest pain also called as Angina
- Heart Attack
- Heart failure
- Irregular heart beat which can cause sudden death.
- Stroke
- Kidney failure

Principles of management of *Raktagata Vata* or Hypertension

Treatment of hypertension should be done according to *Dosha* and *Dushya* involved in Pathogenesis or *Samprapti* of hypertension. *Manas Bhavas* like *Chinta, Bhaya, Krodha, Lobha* etc. Pathogenesis, Progression and prognosis of the disease also affect the response to the treatment. Hence the type of therapy should be one that can pacify these disturbed *Mansik Bhavas*.

As per *Ayurveda*, there are three main treatment principles viz. *Daiva Vyapashraya Aushadha, Yuktivyspashraya Aushadha* and *Satvavajaya Aushadha.*

1. ***Daiva Vyapashrayra Aushadha*** includes *Mantra, Mani, Mangal,* Home, *Upwas, Prayaschit* etc. This can be given to the patient according to the Patient's cultural beliefs and thoughts.
2. ***Yuktivyapashraya Aushadha*** includes the proper management of *Ahaar* and *Vihaar* and *Aushadha*, as we have seen, Hypertension is a lifestyle disorder that can be correlated with *Raktagata Vata* or *Kapha Pittavrita Vata* by *Ayurvedic Samhitas*. The principles of management include modification of *Ahaar, Vihaar* and *Aushadha.* The first objective is maintaining health, which we can achieve through modification in *Ahaar* and *Vihaar*. In *Ayurvedic* texts concepts of *Dincharya, Ritucharya, Rasayana* therapy and *Sadvritta* have been given for the maintenance of health and treatment, and concepts of *Samshodhan* and *Sanshaman Chikitsa* have been given. *Samshodhan* Chikitsa includes the removal of vitiated *Doshas* from the body by the processes of *Vaman, Virechana, Basti* and *Nasya*. And *Sanshaman Chikitsa* includes some *Aushadha yoga* to be used internally. The management of *Raktagata Vata* is done under the following sequence-

a) *Nidan Parivarjanam* - Avoid food and lifestyle that aggravates the risks of *Raktagata Vata*

b) *Ahaar* - *Ahaar* should be taken according to one's *Prakriti, Satmya, Vaya* etc. as told by the *Acharyas* in *Ayurvedic Samhitas*—avoidance of food rich in fats, spices, and salt and low Ca++ and K+ content.

c) *Vihaar* - Sedentary lifestyle should be avoided, one should follow *Sadvritta, Dincharya* and *Ritucharya* as described in *Ayurvedic Samhitas*.

d) *Yogabhyas* and exercise - Stress reduction from practising meditation, *Yoga*, and other mind-body relaxation techniques can lower blood pressure. *Yoga* is formulated for many reasons and health restoration is one of them. *Shavasana, Sukhasana Dhanurasana, Makarasana,* and *Vajrasan*, along with the regular practice of *Pranayama* are found to be very useful for lowering blood pressure in normal as well as hypertensive individuals if performed accurately and adopted as a lifestyle. One should do *yoga* and Exercise to reduce the risk of Atherosclerosis which causes Hypertension.

e) *Sanshodhana Karma* - *Abhyanga* and *Sarvanga Abhyanga* with specially formulated oils help to increase elasticity and flexibility. If the patient has mild and moderate types of Hypertension and *Uttam Bala* then it is advised to give *Vaman* and *Virechana*. It has been reported that *Vachadi Lekhan Basti* is very useful in the treatment of Hypertension. It causes a reduction of *Kapha* and *Meda* along with *Niyaman* of *Vata.* All of this causes *Samprapti Vighatan*. *Shirodhara* should be done in case of headache and giddiness.

f) *Sanshaman Chikitsa* - *Sanshaman Chikitsa* is used along with Nidan *Parivajanam* and *Satmya Ahaar Vihaar*. *Guggulu, Pushkarmoola, Vacha* and *Arjuna*

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should be used for the Cardioprotection. Some *Yogas* are also given below-

- *Pushkar Brahmi Guggulu* (500mg) - 2 *Vati* TID
- *Ashwagandha Churna* - 5 gms BD
- *Sarpgandha Ghan Vati* (250mg) - 1 BD or TID
- *Jatamansi Churna Kashaya* - 25 ml HS
- *Chandrakala Rasa* and *Praval Pishti mixture* (125mg) - 1 TID

In case of complications (CHF)

Punarnava Mandoor (1gm) + *Karveer Yoga* (1gm) +*Shweta Parpati* (1gm) + *Prabhakar Rasa* (200 mg) - All should be mixed and should be given in 3 divided doses with the *Anupana* of *Madhu.*

3. ***Satvavajaya Chikitsa*** means avoidance of *Manas* to being involved in *Ahita Arthas*, for this one can do meditation, control over suppressible urges etc.

Prevention of Hypertension[3,4]

The low prevalence of hypertension in some communities indicates that hypertension is potentially preventable. The WHO has recommended the following approaches in the prevention of hypertension -

A. Primary Prevention: 1. Population strategy 2. High-risk strategy

B. Secondary Prevention

A. Primary Prevention

Although control of hypertension can be successfully achieved by medication which is secondary prevention, the ultimate goal is general primary prevention. Primary prevention is defined as "all measures to reduce the incidence of disease in a population by reducing the risk of onset"[6,7]

(i) Population strategy: The population approach is directed at the whole population, irrespective of individual risk levels. The concept of the population approach is based on the fact that even a small reduction in the average blood pressure of a population would produce a large reduction in the incidence of cardiovascular complications such as stroke and CHD. The goal of the population approach is to shift the community distribution of blood pressure towards lower levels of "biological normality". This involves a multifactorial approach, based on the following non-pharmacotherapeutic interventions -

(a) Nutrition - Dietary changes are of paramount importance. These comprise

1. Reduction of salt intake to an average of not more than 5g per day
2. Moderate fat intake
3. Avoidance of a high alcohol intake
4. Restriction of energy intake appropriate to body needs

(b) Weight reduction - The prevention and correction of over body weight/ obesity (BMI > 25) is the prudent way of reducing the risk of hypertension and indirectly CHD.

(c) Exercise Promotion - The evidence that regular physical activity leads to a fall in body weight, blood lipids and blood pressure suggests that regular physical activity should be encouraged as a part of the strategy for risk factor control.

(c) Behavioral Changes - Reduction of stress and smoking, modification of personal lifestyle, yoga and transcendental meditation could be profitable.

(e) Health education - The general public requires preventive advice on all risk factors and related health behavior. The whole community must be mobilized and made aware of the possibility of primary prevention.

(f) Self-care - An important element in community-based health programmes is patient participation. The patient is taught self-care, i.e., to take his own blood pressure and keep a log book of his readings. Log books can also be useful for statistical purposes and for long-term follow-up of cases.

(ii) High-risk strategy - This is also the part of Primary prevention. The aim of this approach is to prevent the attainment of high levels of blood pressure at which the institution of treatment would be considered. This

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approach is appropriate if the risk factor occurs with very low prevalence in the community.

Detection of high-risk subjects should be encouraged by the optimum use of clinical methods. Since hypertension tends to cluster in families, the family history of hypertension and tracking of blood pressure from childhood may be used to identify individuals at risk.

B. Secondary Prevention - The goal of secondary prevention is to detect and control high blood pressure in affected individuals. Modern anti-hypertensive drug therapy can effectively reduce high blood pressure and consequently, the excess risk of morbidity and mortality from coronary, cerebrovascular and kidney disease. The control measures comprise:

(a) Early case detection - Early detection is a major problem. This is because high blood pressure rarely causes symptoms until organic damage has already occurred and our aim should be to control it before this happens. The only effective method of diagnosis of hypertension is to screen the population. But screening is not linked to follow-up and sustained care, is fruitless exercise. It is emphasized that screening should not be initiated if health resources for treatment and follow-up are not adequate.

In developed countries, mass screening is not considered essential for the adequate control of blood pressure in the population. In Europe, the large majority of people have at least one contact every 2 years with the health service. If blood pressure is measured at each such contact, the bulk of the problem of detecting those in need of intervention is solved.

(b) Treatment - In essential hypertension as in diabetes we cannot treat the cause because we do not know what it is. Instead, we try to scale down the high blood pressure to acceptable levels. The aim of treatment should be to obtain a blood pressure below 140/90 and ideally a blood pressure of 120/80. Control of hypertension has been shown to reduce the incidence of other complications. This is the major reason for identifying and treating asymptomatic hypertension. Care of hypertensives should also involve attention to other risk factors such as smoking and elevated blood cholesterol levels.

(c) Patient Compliance - The treatment of high blood pressure must normally be lifelong and this presents problems of patient compliance, which is defined as "the extent to which patient behavior (in terms of taking medicines, following a diet or executing other lifestyle changes) coincides with clinical prescription. The compliance rates can be involved through education directed to patients, families and the community.

CONCLUSION

In the end, it can be concluded that lifestyle disorders are the main cause of premature deaths all over the world of which Cardiovascular diseases are the first and main cause of death. Hypertension is the main cause of cardiovascular diseases. Ayurvedic classics describe it as *Raktagata Vata or Kapha Pitta Avritta Vata*. The pathophysiology involves *Prasaravastha* of *Doshas* along with *Rasa, Rakta* and *Meda* are involved in the development of *Raktagata Vata*. Factors that increase the risk of this lifestyle disorder are Diet and lifestyle, Environmental factors, stress and hereditary factors. These can be correlated with *Guru, Abhishyandi, Atilavan, Atiushna, Atisnigdha Ahaar, Asyasukham*, and *Swapnasukham* with a sedentary lifestyle. *Kama, Krodha, Lobha, Irshya*, *Mana* etc. can be classified under stress factors for the development of *Raktagata Vata*. Mild to moderate Hypertension doesn't cause any harm which is why this is not classified under *Vyadhi* described by *Ayurvedic Samhitas*. It causes the development of *Kastasadhya Vyadhis* or *Asadhya Vyadhis* like Angina Pectoris, CHF, Coronary Artery Disease, Cerebrovascular Accident, Acute and Chronic Renal failure etc. Principles of management include modification in diet and lifestyle as described by *Ayurvedic Samhitas* such as *Dincharya, Ritucharya, Rasayana* Therapies, following *Sadvritta* and *Achara Rasayana* for reducing the risk of Hypertension. Along with this *Aushadha Prayoga* is also given such as *Samshodhan and Sanshaman Chikitsa* for the treatment.

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How to cite this article: Pooja Kumari Sharma, Manohar Ram, Ramnihor Tapsi Jaiswal, Manish Mishra. Lifestyle Disorders and Ayurveda with special reference to Raktagata Vata (Hypertension). J Ayurveda Integr Med Sci 2024;1:155-165.
http://dx.doi.org/10.21760/jaims.9.1.22

Source of Support: Nil, **Conflict of Interest:** None declared.

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