ETIOLOGY OF HYPERTENSION WITH ITS MANAGEMENT: AN AYURVEDIC APPROACH AND MODERN APPROACH

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ABSTRACT

Ayurvedic science believes that prevention is better than cure. Various theories are proposed in Ayurveda as well as modern science regarding diseases, their symptoms and management. Modernization came up with various technologies which provides rest to human body. This luxury caused a lot of problems to the human body.

Hypertension is one of the major problems. According to Ayurvedic perspective, Hypertension is a symptom which is caused due to the prasaravastha followed by sthanasamshraya of vitiated tridosha (morbid factor) wherever modern science revealed Hypertension as "silent killer" which can be caused by various factors like stress, hereditary and sometimes it's cause is unknown. Elevation in blood pressure is also named as uchcharaktachaap (tachycardia) in Ayurvedic Science. The path of Hypertension is pointed out by RAAS system, samprapti (manifestation) and samprapti ghatakas (components of manifestation procurement factor disease). To prevent this disturbance, some lifestyle changes are required in daily routine life. Different types of Ayurvedic and modern therapies are provided to cure the particular problem.

Keywords : RAAS, Hypertension, Uchcharaktachaap, Blood pressure, Silent killer

Introduction

Ayurveda "The mother of all Healing" helps to maintain the health and it can cure the diseased person with the nature along with lesser or negligible side effects. As each and every person on the earth have their unique fingerprints and every person have their unique pattern of energy. It comprises of the combination of physical, mental and emotional characteristic which differ in every individual (Kamble et al., 2018).

In Ayurvedic science human body is composed of "Panchamahabhuta (five elements)” and "Tridosha (morbid factor)” which constitutes the unique characteristics in an individual. Now a days due to modernisation life has become very easy but it has generated many diseases in human life. This luxury life, faulty food intakes and many changes in lifestyle may lead to many diseases like arthritis, diabetes and hypertension etcetra (Bhatt & Khader, 2020).

Hypertension or we can say elevated blood pressure is very common problem seen worldwide. Hypertension is a hemodynamic derangement which is responsible for 57% stroke deaths and 24% of coronary disorders (Namdeo & Joshi 2020). According to modern science, reason of hypertension or elevation in blood pressure is unknown but it can be said that it may be caused due to genetic factor, environmental factors and mutual interactions. According to Ayurvedic perspective the main reason of hypertension could be vitiated vatadosha. According to ancient literatures hypertension is not a Vyadhi (disease), but if we require an easy, safe and cost-effective healing of hypertension then we should go for Ayurvedic medication and for understanding the disease in Ayurvedic perspective we must know about Dosha (morbid factor), Dhatus (tissue) and srotas (source) (Kamble et al., 2018; Menon & Shukla 2017; Vithalani et al., 2015).

In present era, hypertension is a very common disease every 5th person is found affected with hypertension. Untreated hypertension may cause its adverse effects on retina, heart, kidney, vessels and these can be detected easily. In most of the developing countries untreated hypertension can lead to increase mortality and morbidity (Kamble et al., 2018; Narayan et al., 2017). In fact the original cause of elevated blood pressure is not yet known and as it is asymptomatic condition so it is also referred as “Silent killer” (Menon & Shukla 2017; Vithalani et al., 2015) It can be treated by various autihypertensive drugs in modern science and also we can change the lifestyle along with balancing the vitiated Dosha (Ananthasayana, 2010; Shandilya & Shreevastha).

Aim and objective

• For understanding the common problem of people in a better way.
• To gain the knowledge about hypertension and its causative factor involved in it.
• To find the treatment with herbs along with lesser side effects

Literature review of hypertension:

1. Nidana: The causative factors of hypertension are mentioned in table no. 1
Table 1: Nidana of Hypertension (Narayan et al., 2017; Sahu et al., 2015)

<table>
<thead>
<tr>
<th>Aharaja (sustenance)</th>
<th>Viharaja (lifestyle)</th>
<th>Mansaka</th>
<th>Dosha (morbid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Madyapana (intoxicating drinks)</td>
<td>• Vegadharna (suppressing the urges)</td>
<td>• Chinta (stress)</td>
<td>• Vata- vyan,prana,apana,saman</td>
</tr>
<tr>
<td>• Virudhasana (incompatible of forbidden food)</td>
<td>• Atinidra (hypersomnia)</td>
<td>• Krodha (anger)</td>
<td>• Pitta- sadhaka, pachaka</td>
</tr>
<tr>
<td>• Atilavana (excessive salt intake)</td>
<td>• Sthoulya (obesity)</td>
<td>• Shok (depression)</td>
<td>• Kapha- kledaka,avalambaka,tarpaka</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bhaya (fear)</td>
<td>• Mamsa- raja,tama</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Irshya (hate)</td>
<td></td>
</tr>
</tbody>
</table>

2. Purvarupa and Rupa (symptoms before and after disease)
Various symptoms are observed before and during disease condition like: Shiroruka (headache), Anidra (sleeplessness), Bhrama (body imbalance), Klama (nausea and vomiting), Sammoha (sluggishness to intellect), Mada (delerium), Moorcha (stupor), Sanyasa (comma) Sirobhrama (dizziness), Sweda (sweating), Uchha raktaaap (tachycardia), Dhamni avarodha (blood vessel block).

3. Relation with Tridosha (relation with morbid factor)
There is no any specific description of Hypertension in Ayurveda. But we can relate hypertension with Tridosha imbalance. Blood is ejected out from heart for circulation in body and then returned back to the heart. It is balanced by Vata Dosha.

Dushita (abnormal) vata dosha like vyana vayu (outward moving air), samana vayu (balancing air), udana vayu (upward moving) can be the causes of Hypertension. In other hand Ranjaka Pitta Vitiation also lead to high blood pressure. Vitiated Avalambaka Kapha is also a reason of hypertension. So, imbalance of these above mentioned dosha leads to hypertension (Raghuram, 2015; Mishra et al., 2015; Narayan et al., 2017)

4. Samprapti (manifestation): It is mentioned in Figure No. 1

5. Samprapti ghataka:
- Dosh (morbid factor): Tridosha and mansa dosha
- Dushya (liable to be spoilt): Rasa (plasma), Rakta (blood), Meda (muscles)
- Adhisthana (location): Dhamni (blood vessels), Sira (vein), Hridya (heart)
- Udbhavasthana (site of occurrence): Hridya and dhamni (heart and blood vessels) (Tripathi 2018; Narayan et al., 2017; Sahu et al., 2015)

Pathophysiology of hypertension in Ayurveda based on modern view:
1. Types of hypertension: There are mainly two types of Hypertension based on the symptoms-
   - Primary Hypertension: It is also known as essential hypertension. Cause of this type of hypertension are not well known.
   - Secondary Hypertension: It is malignant hypertension. Causes of this hypertension are known. (Natalia et al., 2016; Kono et al., 2015)
2. Etiological risk factors:
   Elevation of blood pressure, lacks of exercise, day sleeping, excessive salt intake, stress smoking, family size and crowding, excessive alcohol intake, suppressing natural urges, increase in cardiac preload, increase in cardiac afterload, increase in blood volume, due to arteriolar constriction, elevated cardiac output or blood volume (Kamble, et al., 2018; Narayan et al., 2017; Sahu et al., 2015).

3. Mechanism of hypertension: It is mentioned in Figure No. 2.

Fig. 2 : Mechanism of Hypertension (Lama & Drawz 2017; Tripathi, 2018; Remuzzi et al., 2015)
4. Relation of hypertension with other diseases

i. Upadrava (disease caused by hypertension)

Hidorogas (heart problems), Shirorogas (head problems), Sira and dhanni kathinya (blood vessel constriction), CHF, Myocardial infarction, Pulmonary embolism, Cerebral aneurysm, Renal failure/glomerulopathy, Retinopathy, Angina, Coronary artery disease,Death sometimes due to failure of vital organs. (Kamble, et al., 2018; Mehta, 2020; Satkar et al., 2020).

ii. Diseases that can cause hypertension

- Renal disease (Polycystic kidney, Acute nephritis)
- Vascular disease (Coarctation of Aorta, Arteriosclerosis)
- Endocrinial diseases (Myxedema, Cushing’s Syndrome)
- Neurological diseases (Intracranial pressure raised, Lead encephalitis) (Ginette 2006; Jackson & Bellamy 2015; Kamble, et al., 2018.)

iii. Upshaya (Prevention measures of hypertension)

These are some preventive measures, things to implement in life: improve daily routine like exercise and diet, panchakarma chikitsa should be taken implement in life: improve daily routine like exercise and diet, panchakarma chikitsa should be taken. (Aronow, 2018; Tripathi, 2018)

iv. Other drugs

- Acts on heart: Arjuna (Terminalia arjuna) Hardya maha kashays (formula)
- Act on Baja or Tama Brahma (Bacopa monnieri) Shankapushpi (Convolvulus)
- Act on Oja Jivanya varga, kakalodigana (Mishra et al., 2015; Narayan et al., 2017)

2. Treatment according to modern

Table 2: Treatment according to modern (Aronow, 2018; Tripathi, 2018)

<table>
<thead>
<tr>
<th>Category of drug</th>
<th>Classification</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diuretics</td>
<td>Thiazide diuretics</td>
<td>Hydrochlorothiazide</td>
</tr>
<tr>
<td></td>
<td>High ceiling/ loop diuretics</td>
<td>Furosemide</td>
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<tr>
<td></td>
<td>Potassium sparing’s diuretics</td>
<td>Spironolactone</td>
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<tr>
<td>ACE inhibitors</td>
<td></td>
<td>Captopril, Enalapril</td>
</tr>
<tr>
<td>AT1 receptors</td>
<td></td>
<td>Losartan</td>
</tr>
<tr>
<td>Direct renin inhibitors</td>
<td>Alpha Adrenergic Blockers</td>
<td>Prazosin, Terazosin</td>
</tr>
<tr>
<td></td>
<td>Beta Adrenergic Blockers</td>
<td>Propranolol, Atenolol</td>
</tr>
<tr>
<td></td>
<td>Alpha+ Beta Adrenergic Blockers</td>
<td>Labetalol</td>
</tr>
<tr>
<td>Adrenergic Blockers</td>
<td></td>
<td>Aerpamil, Amlodipine</td>
</tr>
<tr>
<td>Calcium channel blockers</td>
<td></td>
<td>Clonidine, Methyldopa</td>
</tr>
<tr>
<td>Central sympatholytics</td>
<td>Arteriolar vasodialators</td>
<td>Hydralazine, Minoxidil</td>
</tr>
<tr>
<td>Vasodialators</td>
<td>Arteriolar+venous vasodialators</td>
<td>Sodium nitroprusside</td>
</tr>
<tr>
<td>Parenteral therapy</td>
<td></td>
<td>Sodium nitroprusside, Glyceryl trinitrate, Esmolol, Phenolamine, Hydralazine, Labetalol, Furosemide</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>Prazosin and Clonidine (for postural hypertension) Methyldopa, Hydralazine. Dihydropyridine (safe before labour)</td>
</tr>
<tr>
<td>For pregnancy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

Laziness, some diseases, improper lifestyle and food or sometimes unknown factors can vitiate dosha (morbid factor) and dhatus which results in raised blood pressure which can lead the improper body functioning. The vitiated dosha circulates (prasaravastha) all over the body with the help of blood and affect the organs like brain or blood vessels or heart. As the Modern technologies are in progress the Hypertension can be diagnosed easily and at its early stages. As soon as we come to know about the problem we can prevent and cure the problem with the same hurry. According to the severity of the disease preventive measures could be prescribed and some possible and best treatments could be provided to the patient.
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