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CLASSICAL REVIEW OF HYPERTENSIVE DRUG

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ANTIHYPERTENSIVE DRUGS

Hyper tension is very comman disorder particularly in past middle age. It is not a disease in itself, but is an important risk factor for cardivascular mortility and morbidity. According to who, it is above 140/90 mmhg. An estimated 1.28 billion adults aged 30 – 79 years worldwide have hypertension. American assovctaion of heart mentioned that normal blood pressure is less than 120 mmhg systolic and less than 80mm hg distolic. Epidemiological studies hanve comnfirmed that higher the pressure (systolic or distolic or both) grater is the risk of cardivascualr disease. The primcipal focus of ayurveda is on mentaining good health and adopting a healthy way of life. There is no discription of sucha single disease which can recemble with hypertension. It can be correleted with vata pardhan tridoshajvyadhi, raktabhar, uchharaktachapa etcand involves dhatus like rasa and rakta and gets inflanced by mana. Our ancient science has provided us various drugs which influences the pressure of the blood. These drugs has directly or indirectly roll in curing hypertension or example Sarpgandha, jtamanshi, rudraksh, aswgndha etc which should be analysied by thephysician clinically.

INTRODUCTION

Hypertension is a vatapradhaan tridoshajvyadhi.[1] there is no any disease.

In Ayurveda Which Completely Resembles With Hypertension Mentioned In Modern But By Viewing The Signs And Symptoms, Analysing Dosh, Dushya, Srotas Etc, Different.

Nomenclature are given to htn. By viewing the signs and symptoms, it can be said that it is a

vata pradhan disease in association with pitta and kapha. As per american association of heart stage 1 htn is when systolic pressure is 130-139 mm hg and diastolic pressure is 80-89 mm hg. Stage 2 is when systolic is 140 mm hg or higher and diastolic is 90 mm hg or higher. Stage 3 (hypertensive crisis) is when systolic is higher than 180 mm hg and diastolic is higher than 120 mm hg.[2] nature has gifted us with immense herbs that help to cure the ailments. There are drugs helpful in treating the hypertension. They work according to their rasa, guna, veerya, vipaaka, prabhava. The exploration of such herbs help in more natural treatment which is compatible and hasless adverse effects.

AIMS AND OBJECTIVES

1. To Explain Hypertension As Per Ayurveda.
2. To Explain Antihypertensive Drugs Mentioned In Ayurveda

MATERIALS AND METHODS

To Study the *Ayurvedic* Perspective of Hypertension and Drugs Involved In Lowering The Blood Pressure Mentioned In Different Classical Texts, Modern Literature, Research Articles With Recent Clinical Researches Updates Etc Were Studied And Analysed.

NOMENCLATURE GIVEN TO HTN

Various Ayurvedic Scholars Have Coined Different Names For Hypertension Such.

As; raktagatavata, siragatavata, avritavata, dhamani prapurana, rakta vikshepa, vyanaprakopa, raktamada, raktavriddhi, uchharaktachapa, raktabhaar. It is mainly vatapradhana tridoshaja vyadhi involving rasa-raktadhatu in heart greatlyinfluenced by morbid state of mana and oja. It is therefore be considered.

As sharira and mansik roga. Accordingto acharyacharaka, ‘vikshepana’ (circulation) of rasa dhatu is the karma of vyan vayu and hridaya.[3] acharya sushrut has describedthe circulation process in detail.[4] chakrapani has mentioned that circulation is a continuous processing in which rasa, rakta and other liquid dhatus circulate in the body.[5]

NIDAANA ACCORDING TO AYURVEDA

Ayurveda has mentioned involvement of different doshas in increasing the pressure ofblood in the body. Any disturbance in their functioning increases the pressure of flow of rakta dhatu in the body.

ROLE OF VAYU IN BLOOD FLOW

Prana Vayu- The Function of Prakrita Prana Vayu Is 'Hridaya Dhruka'[6] (i.e. Dharana of Heart) Which Can Be Correlated With The Stimulation And Inhibition of The Nervous System. In Addition To This, Vasomotor Center Controls The Blood Pressure By Vasoconstriction and vasodilation of nerves. Similarly, prana vayu also controls theregulation of blood pressure by controlling vyana vayu.

VYANA VAYU - With The Help of Vyana Vayu, Heart Contracts And Propels Blood (Rasa Rakta Dhatu) Continuously All Over The Body.[7]

SAMANA VAYU - Samana Vayu Helps In Circulation of Rasa To The Body From Heart. ThisConcept Has Been Explained By Sharangdhar.[8]

APANAVAYU - apana vayu helps in proper chanelling of vayu and maintains its proper balance. Obstruction of apana vayu lead to abstruction of mutra and purisha, so anyvitiation in its chanelling could affect the blood pressure.[9]

SADHAKA PITTA - the sthana of sadhaka pitta is heart. In emergency situations, anger, fear, the adrenal glands get stimulated where the nidaana is pittaj and release adrenaline affecting heart rate and cardiac output which can be correlated with vitiation of sadhaka pitta. This justifies role of sadhaka pitta in heart and maintainingblood pressure.[10]

AVLAMBAK KAPHA - acc to ranjit rai desai, avlambhak kapha is responsible for contraction and maintaining tone of cardiac muscles. Hence helping in continuouspumping of heart.[11]

RASA DHATU – rasa dhatu circulates in the blood vessels. Acharya charaka in vimanasthana.

Described that excessive intake of guru (heavy), shita (cold), excessively unctuous foodand constant worry leads to deterioration of rasa dhatu srotas.[12] any disturbancein the flow or fluidity of rasa can affect the pressure on the blood vesssels thus increasing blood pressure.

RAKTA DHATU - raktavaha strotas get vitiated due to intake of food and drinks whichare irritant, unctuous, hot and liquid; excessive exposure to sunlight and fire. This affects the doshas and the vitiated vata gets lodged in the circulating.

Rakta dhatu and causes disturbance in its circulation.

AGNI - Jathragni is the fire in the body that is responsible for digestion of food andformation of dhatus in proper way. Vitiation of agni could lead to many problems. Agni dushti occurs at two levels jatharagni mandya and dhatwagni mandya.

[13]Jathragnimandya lead to formation of ama which blocks the channels due to its various guna can cause strotorodha and vitiation of doshas. This leads to narrowing of path of the blood vessels and causing peripheral resistance leading to hypertension.

MANA - Hypertension Is Considered As Mansik Vyadi (Psychosomatic), Emotional Disbalance That Could Be Due To Chinta (Worry), Krodha (Anger), Bhaya (Fear) Could LeadTo Disturbance in Mansik Dosha. In Ayurveda Pradnyaparadha and.

Asatmendriyartha samyoga are considered as the root causes for every disease[14], which indicate the involvement of manas in htn.[15]

SAMPRAPTI GHATAKAS (COMPONENTS OF PATHOGENESIS)DOSHAS

- Vata - Prana Vayu, Vyana Vayu, Samana Vayu.
- Pitta - Sadhaka Pitta
- Kapha - Avalambaka Kapha
- Manas Dosha - Raja, Tama

DUSHYAS - Rasa, Rakta.

UPDHATU - Sira, Dhamani.

AGNI - Jatharagni, Dhatwagnimandya.

SROTAS - Rasavaha, Raktavaha, Pranvaha & Manovaha Srotodushti.

PRAKAR - Sanga Type of Srotorodha **Udabhava Sthana** - Hridaya, Dhamani **Adhisthana** - Mano-Daihika, Shira, Dhamani. **Srotas sancharasthana** - Sarva Sharir **Rogamarga** - Madhyama Rogamarga **Drugs Used In Htn.**

Ayurveda has mentioned various drugs which are used in hypertension. They work on the basis of their rasa, guna, veerya, vipaaka, prabhava. They affect the blood pressure by

depressing cns, cardiac output, vasodilation, relaxing muscles. Diuretics etc.

Some of the drugs are mentioned below in table no. 1

DISCUSSION

Hypertension is one of the leading health problems worldwide. It leads to various cardiac problems and affects other organs too. This problem is increasing day by day, conventional medicines play a vital role to treat it. Ayurvedic drugs have proved to beaffective in lowering the blood pressure and improving heart functions. This article has documented several drugs which acts as antihypertensive as per mentioned in the text. The main alkaloids are mentioned in the table and their mechanism of lowering the blood pressure. Some affects the raas, some acts as diuretics, cardio depressants, muscle relaxants, ace inhibitors etc. Drugs like sarpagandha, jatamansi, ashawgandha have mind relaxant properties and leads to reduction in cortisol level thus relaxing the blood vessels leading to lowering of blood pressure. Ashawgandha, bhringraja, kankusht, kantakari, shatavari, chilhint, ankol act as diuretics. They pull out water from the body thus decreasing pressure on the vessels and heart.

Vacha and banafsha act as calcium channel antagonists. Tagara helps in katp channel.

Activation, lowering the blood pressure. Shankhpushpi and pooga are ace.

Inhibitors. Pooga inhibits ang 1 and ang 2. Sadpushpa has anti-depressant activity whichcools the hyperactivity of the mind which releases the constriction in the blood vessels and relaxes the flow of blood. The dose of the drugs mentioned are either the clinical trials dose which has shown results and the dose mentioned in the text itself. The specific function of the drug is mentioned as per the ayurvedic text which helps directly or indirectly in hypertension. We believe that this article would help to enhance knowledge of the antihypertensive drugs, their alkaloids and how

Table 1: List of Ayurvedic Drugs Used In Hypertension.

S.N.	DRUG	B.N	Active conc. & Pharmacologicalaction.	Class	Karma	Part used	Formulation and Dose
1	Sarpagh andha	Rauwolfia serpenti na benthexkurz	Reserpine Serpentine Rauwolfinine Cardiodepressant[16] Tranquilizer ACE inhibitor	Aparajita Gana Nidrajanana	Raktabhar Shamaka Haridya Avsadhaka	Root	Sarpaghandhi Churna 1-2g[17] Sarpaghandhi vati
2	Jatamansi	Nordostachys Jatamansi DC	Jatamansik Jatamansone Valeranone Ursolicacid Effects RAASDiureticMindRelaxant[18]	Eladi gana Tikta Skanda Kandughana SayaNiyamakaj na Sthapana	Raktabhar Shamaka Haridya Niyamaka	Root	Churna10g[19]
3	Rudraksh	Elaeocarpus ganitrus Roxb	RudrakinQuercetin Terpenes Cardiac glycosides Antidepressant Effects RAAS[20]	RaktabharShamaka	Raktabhar Shamaka	Phalasthi	Churna 3-5g[21]
4	Ashawga ndha	Withania somnifera Linn	Cuseohygrine Anahygrine Withanolides Cardioprotective Diuretic Reducecortisol[22]	Baliya GanaMadhura Skanda Rasayana	Raktabhar Shamaka	Root	Churan 3-6g[23]
5	Tagara	Valeriana wallichii DC	Valepotriates Dihydrovaltrate Cyclopentapyrans CNS depressant Diuretic Sedative[24]	Sheetaprashma namTikta SkandaEladi ganaVedana Sthapana	Raktabhar Shamaka	Root	Churan 1-3g[25]
6	Bhringaraja	Ecliptaalba Hassk	EcliptineWedelolacton e DiureticAntioxidant[26]	Keshya	Raktabhar Shamaka	Panchang seeds	Churan Swarasa-5-10ml[27]
7	Vacha	Acorus calamusLinn	Asaryl aldehydeA- AsaroneB-AsaroneCa+2 channel antagonists[28]	Lekhniye gana ArshoganaTikta Skanda Mustadi ganaSanjaya Sthapana	Raktabhar ShamakaHri dyagati Shamaka	Root,Kaand	Mool Churana-125-500mg[29]
8	Shankhp ushpi	Convolv ulus pluricaulis Chois	ShakhpushpeenConvol vulinePalmitic acid ACE inhibitor[30] Anti- depressant	Medya	Raktabhar HaraRaktagata Vata Shamaka	Panchang	Churan-10-20 g[31] Kshaya -50-100ml

			activity				
9	Tambool	PiperbetleLinn	EugenolChavibetolHydroxy chavicol Antioxidant Cardio protective[32]	Hridyadi Varga	Raktabhar HaraHridya Balya	Leaves	Swarasa-5-10ml[33]
10	Banafsha	Viola odorataLinn	ViolineAlkaloidsSaponi nsTannins VasodilatorCa+2 channel inhibitor[34]	Chedana	Raktabharhara	Panchang	Churana-3-6 g Kwatha[35]
11	Kantakari	Solanumsurattense Burm. F	Diosgenin Diuretic[36]	Kaas hara Kanthya HikkanigrehShoth haraVarunadi gana	RaktabharHara RaktaShodhaka	Panchang	Kwatha-40-70ml[37]
12	Kankusht	Garciniamorella Desr	Garcenoline Morellin Diuretic[38] Antioxidant	TeekshanVirechak	RaktabharHara	Niryaas	Niryasa- 50-125 mg[39]
13	Arlu	Ailanthus excelsa Roxb	B- Sitosterol VitexinACE inhibitor[40] Coolingeffect	Kshaya Skanda Pureesh Sangreha AamaHara	Raktabhar Hara Raktashodha ka	Bark	Swarasa-10-20ml Churan-1-3 g[41]
14	Shatavari	Asparagus racemos us Willd	SteroidalSaponinsShatavarin 1-4 Diuretic[42] Mind relaxant	Madhura SkandhaShukraJanana	RaktabhaarHara Raktachaap Hridroga	Kandh	Swarasa-10-20 ml Kwatha-50-100ml Churan-3-6gm[43]
15	Pooga	Areca catechuLinn	Catechin Arecoline Arecaidine GuavacolineGuavacine Inhibit pressor response to Ang. 1 & Ang. 2[44]	Vikasi	Raktabhar Hara HridyaAvsadaka	Fruit,seeds	Churana- 1-3g[45]
16	Chilhint	Cocculus hirsutus Linn.	Trilobine CoclaurineDiuretic[46]	Vishagana	RaktabharHara Raktashodhak	Root, Leaves	Swarasa-10-20 ml[47]
17	Ankol	Alangiu m Salvifoli um Linn. F	Alangine Diuretic[48]	Vishagana	Raktabhar Shamaka Hridya Prasarana	Root bark	Churan-1-2g[49]
18	Sadpushpa	Lochnera roseaLinn.	Lochnerin VirosinLochnericine Anti-Depressant activity[50]	Rakta ArbudaNashaka	Raktabhaar Shamaka	Root, Leaves, Panchang	Swarasa-10-20 ml Kalka-10g[51]

They act as antihypertensive. This will provide a base for further studies to find outmore uses of the alkaloids and their working. This would promote the use of more natural medicines for the treatment of the health issues.

CONCLUSION

Natural medicinal products are considered in the case of primary healthcare becauseof better cultural acceptability, safety, potency, and lesser side effects. Several traditional herbal medicines and supplements have been recognized as potential therapeutic agents to manage hypertension and its associated complications. This review aims to document medicinal plants having potential antihypertensive action given in ayurveda. This compilation may help the researchers, pharmaceutical companies, and investigators to further use these plants for clinical research purposes.

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