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Nidanatmaka Study on Vyana Bala Vaishamyia w.s.r. to Hypertension

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ABSTRACT

The WHO rates hypertension as one of the most important causes of premature death in world. Approximately 1 billion people have hypertension, contributing to more than 7.1 million deaths per year. The number of adults with hypertension in 2025 is predicted to increase by about 60% to a total of around 1.56 billion. In India, Cardiovascular diseases caused 2.3 million deaths in the year 1990; this is projected to double by the year 2020. Numbers of drugs are available in modern medicine to treat the disease in its symptomatically active state but still are unable to cure the hypertension. Hyperfunction of *Vyana* is considered under *Vyana Bala Vaishamyia* which produces increased force in the wall of the channels (blood vessels) to produce the disease hypertension. Survey research is an important form of scientific inquiry that merits rigorous design and analysis. The aim of survey is to gather reliable and unbiased data from a representative sample of respondents. In order to acquire data about people, objects, and events proper data collection tools need to be designed which can measure things of scientific interest. This study was conducted in an individual through survey of hypertensive patients above 18 year age, Patients belonging to either gender. Total 500 patients were surveyed in this study. Total 500 patient of hypertension were surveyed with the help of JNC 8th Criteria, then the patient who is having hypertension, they were surveyed with the help of our ayurvedika assessment tool.

KEYWORDS

Hypertension, VyanaBala Vaishamyia, Vyana, Data, JNC 8th Criteria, Ayurvedika assessment tool



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INTRODUCTION

Hypertension (HTN or HT), also known as high blood pressure or arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is persistently elevated¹. Hypertension is common disorder rising in incidence and once established treatment is obligatory. It is growing in incidence globally particularly in developing countries². The WHO rates HTN as one of the most important causes of premature death worldwide³.

Overall, approximately 20% of the world's adults are estimated to have hypertension, when hypertension is defined as BP in excess of 140/90 mm Hg. The number of adults with hypertension in 2025 is predicted to increase by about 60% to a total of around 1.56 billion. In India, Cardiovascular diseases caused 2.3 million deaths in the year 1990; this is projected to double by the year 2020. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India.

LITERATURE REVIEW

Vyana is a type of *Vata* which moves all over the body. Its *Nirukti* indicates that it affects the whole body. *Bala* here is an indicative of the normal *Guna* (properties)

and *Karma* (functions) of *Vyana*. *Vaishamya* refers to *Vikriti* or disequilibrium of *dosha* in which they are able to produce the disease. As per (*Ch. Sha. 6/4*,) *Vaishamya* means *Vrddhi* or *hrasa*, *i.e.* either increase or decrease. Therefore, *Vyana Bala Vaishamya* may either be considered as increased or decreased function of *Vyana*. But, it is also mentioned that the decreased *dosha* is not able to manifest its own symptoms⁴. So, the decreased *dosha* may not be able to produce any disease. Hence, in the present study, hyper-function of *Vyana Vata* is considered under *Vyana Bala Vaishamya* which produces increased force in the wall of the channels (blood vessels) to produce the disease 'Hypertension'.

In essential hypertension, mainly *vataprakopa* occurs, particularly *Vyana Vata* as it is responsible for *rasa-raktasanvahana*. By virtue of its *Ruksha*, *Sheeta* and *Khara Chala*, *rasa-raktavahinidhamanis* are constricted, also its *ruksha Chala* dries the *malarupakapha* at the inner side of the vessels making them more rigid (*kathin*). Vascular lumen may be reduced further leading to obstruction in it. So, for normal circulatory function, increased force of *Vyana*. *Vyana* is required resulting into *Vyana Bala Vaishamya* and hence leading to the development of hypertension.



RESEARCH METHODOLOGY

MATERIALS AND METHODS

Study site: Laboratory / OPD / IPD of NIA hospitals, Jaipur and Certain NIA camp sites.

Inclusion Criteria:

- 1] Either sex or age group above 18 yrs.
- 2] Patients of Hypertension (JNC 8th Criteria.)

Exclusion Criteria:

- 1] Known case of Renal diseases, Diabetic Mellitus.
- 2] Pregnancy induced hypertension.
- 3] History of drugs like Oral Contraceptive Pills, steroids.
- 4] Known case of Ventricular hypertrophy, Secondary hypertension, Hypertension with severe complication.
- 5] Known case of Portal hypertension.
- 6] Renal artery stenosis induced hypertension.

Assessment of disease:

Assessment of the blood pressure was done by measuring it with the help of sphygmomanometer.

ANALYSIS AND DISCUSSION

In ancient India, examination was based on the *Pramanas* which were considered as tools for accurate knowledge. Among the *pramanas* *Ayurveda* has adopted mainly three- *Aptopadesha*, *Pratyaksha* and

Anumana. This highlights the importance of *pramanas* in the examination, especially in *roga-rogi-pariksha*. The same methodology is followed in the present study also. All the references regarding *Vyana Bala Vaishmya* collected and understood by *aptopadesha* which includes different aspects of literary search. There is not much references about *Vyana Bala Vaishmya* given in *samhitas*. *Vyana Bala Vaishmya* as a separate disease is not explained in our *Ayurveda*. So there is *nidana*, *poorvaroopa*, *roopa*, *samprapti* and *chikitsa* of *Vyana Bala Vaishmya* is not explained separately. In *Charaka Vimanasthana* it is clearly described that if a disease is not having *nidana*, *poorvaroopa*, *roopa*, *samprapti* etc. then these *panchnidana* can be developed with the help of *prakopa* (provoking factor of the disease), *yoni* (*doshas* involved), *uthana* (mode of manifestation), *atma* (nature of the disease), *adhithana* (location of the disease), *sansthana* (symptoms), *shabda*, *sparsha*, *rupa*, *rasa*, *gandha* (association with specific sound, touch, colours, tastes and smell), etc.

Keeping this in mind a specialized questionnaire was prepared which incorporated *nidana*, *dosha*, *dushya*, *samprativivechana* of *Vyana Bala Vaishmya*. Survey of 500 patients was done after applying JNC 8th Criteria.



Age - Age wise distribution of all the 500 patients of essential hypertension showed that maximum number of patients, i.e., 162 (40.5%) were from the age group 56-65yrs, followed by 131 (26.2%) from age group 46-55 yrs. (Table no.1).

Table 1 Percentage prevalence of subject's age wise

Sr.No	Age in (yrs.)	Total no. of subject's	%
1	18-25	45	21.2
2	26-35	162	40.5
3	36-45	103	20.6
4	46-55	131	26.2
5	56-65	59	11.8
	Total	500	100

Age is a recognized risk factor for hypertension. Generally hypertension is prevalent in middle and senile age. It may occur due to *vata-pitta* dominance in this age group. (Ch. Vi. 8/122, As.H.Su.1/8). Although hypertension is more common at older age but modern lifestyle with faulty food habits and increased stress may be the reason for high incidence of hypertension at an earlier age. Old age is *Vata dosha pradhana* age. (As. Hr. Su. 1/8) Physiological aggravation of *Vata* with its *Ruksha, Khara, Daruna, Shita Gunas* etc. may cause *Sankocha* and *Kathinya* of the blood vessels. *Vardhakya* is also included under the *samanyakshayanidanas*. (Ch. Su. 17, *jarakshayahetu*) This results in cessation of normal functioning (Su. Su. 35/85) of *Dhatu*s, *Indriyas*, etc. leads to provocation of *vata* dosha aiding in the process of reduction in the lumen of the

arteries – raising the blood pressure. *Chalaguna* of *vyanavayu*, increases in old age may causes forcible *rasa-raktasamvahana* leading to increased blood pressure.

Sex (Gender) – In the present study female dominance 272 (54.4%) was observed over males 228 (45.6%) (Table No.2).

Table 2 Percentage prevalence of subject's gender wise

Sr.No	Gender	Total no. of subject's	%
1	Male	272	54.4
2	Female	228	45.6
	Total	500	100

Most of the female patients in the study were housewives. The higher incidence of hypertension found in females may be due to their sedentary lifestyle. This sedentary life might be responsible for provocation of obesity in the females which probably act as the causative factor of the hypertension. Another reason may be that female patients were more prone to get hypertensive due to hormonal changes.

Table 3 Percentage prevalence of subject's marital status wise

Sr. No	Marital status	Total no. of subject's	%
1	Married	292	58.4
2	Unmarried	208	41.6
	Total	500	100

Marital status: Distribution of marital status in 500 patients revealed that maximum 292 (58.4%) patients were married and 208 (41.6%) were unmarried. (Table No.3). From this survey study it was revealed that post marital stress was present in nearly half of married patients. This is



due to increased familial responsibilities beyond capacity resulting in disturbed relationship and may drag both individuals towards hypertensive.

Occupational Status – In the present study, maximum 106 (21.2%) patients were housewives followed by patients doing service 105 (21.0%) and business 81 (16.2%) (Table No.4).

Table 4 Percentage prevalence of subject's occupation wise

Sr.No	Occupation	Total no. of subject's	%
1	Student	79	15.8
2	Service	105	21.0
3	Housewife	81	16.2
4	Business	106	21.2
5	Labour	74	14.8
6	Retired	55	11.0
	Total	500	100

Occupation is an environmental factor which greatly influences lifestyle of the person. In present study housewives were more because of their sedentary lifestyle. Housewives also indulge into aetiologies of the disease like *divaswapa*, which mainly causes *vata* vitiation through *margavarodha* mainly, due to availability of free time to sleep in day. Generally service men and businessmen were found more because they mentally deal with day-to-day stressful situations in their work. It has been shown that in men, but not in women, job strain is associated with an elevated blood pressure, not only at work but also while at home and during sleep (Oxford textbook of Medicine).

Habitat: In this study 359 (71.8%) patients were from urban population and 141 (28.2%) patients were belonging to rural areas. (Table No.5).

In this study it is found that most patients were from urban population. Due to rising

Table 5 Percentage prevalence of subject's habitat wise

Sr. No	Habitat	Total no. of subject's	%
1	Rural	141	28.2
2	Urban	359	71.8
	Total	500	100

technology, changing of profession, using technology *manasikavyadhi* is more in urban area.

Ahara (Diet) – Present study included 332 (66.4%) patients vegetarians and 168 (33.6%) patients enjoying mixed diet. (Table No.6)

Table 6 Percentage prevalence of subject's of diet wise

Sr. No	Diet	Total no. of subject's	%
1	Veg	332	66.4
2	Non-veg	168	33.6
	Total	500	100

Diet may have some association with blood pressure. Patients came to hospital mostly from surrounding area were Hindu who generally has vegetarian diets predominantly. But mixed diet was found in maximum patients may be due to changed lifestyle of population.

Sharira Prakriti – The study included maximum 195 (39.0%) number of cases with *vata-pittajprakriti* followed by 156



(31.8%) patients with *pitta-kaphajprakriti*.

(Table No.07.)

Table 7 Percentage prevalence of subject's *Sharirika Prakriti* wise

Sr. No	<i>Sharirikaprakriti</i>	Total no. of subject's	%
1	<i>Vata-Kapha</i>	195	39.0
2	<i>Vata-Pitta</i>	139	27.8
3	<i>Pitta-Kapha</i>	156	31.8
	Total	500	100

This observation may be due to *tridoshaja* nature of the disease hypertension. But it is a *vata* dominant disease. Since the disease is mostly associated with sedentary lifestyle which may have contributed to the vitiation of *kapha*. Considerable no. of patients were having *pitta-kaphajprakriti* because *Rakta* is the main *dushty* involved in it. So *pitta* dominance was also found due to *ashraya-ashrayibhava* of *rakta* and *pitta*. In *vata-pitta prakriti* persons, *vata-pitta* is vitiated very easily. Patients having emotions like fear, anxiety, anger are susceptible to *vata* and *pitta dosha* along with *raja* and *tama dushti* thereby provoking the disease hypertension.

Manasika Prakriti: On considering the data of *mansikaprakriti*, maximum i.e. 302 (60.4%) patients had *rajsikaprakriti*, 198(39.6%) had *tamsikaprakriti*.(Table No.08).

Table 8 Percentage prevalence of subject's *manasika Prakriti* wise

Sr. No	<i>Manasika Prakriti</i>	Total no. of subject's	%
1	<i>Rajsika</i>	302	60.4
2	<i>Tamsika</i>	198	39.6
	Total	500	100

In all *mansika vyadhis* the functions of *rajasa* and *tamasa* gets disturb. *Rajas* is the *pravartaka* and *Tamas* is the *niyamaka* of all mental activities, both are closely related with *Vishada*. These are causative factors of hypertension capable of slowing various mental activities. Thus both are dominantly associated with hypertension.

Family history – In the present survey study, 360 (72.0 %) patients were without any family history and 140 (28.0 %) patients were having positive family history of hypertension. (Table no. 09).

Table 9 Percentage prevalence of family history wise

Sr. No.	Family History	Total no. of subject's	%
1.	Present	360	72.0
2.	Absent	140	28.0
	Total	500	100

Heredity plays an important role in the aetiology of the hypertension. According to *Ayurvedic* concepts it may be indicated by *beejdoshajanidana*. Genetic susceptibility in hypertensive patients makes them more prone to disease. So it is beneficial to advise preventive measures before or at an earlier stage of disease to the patients who have family history of the disease.



Treatment history-Present data shows were not taking any kind of medicines are 120 (24.0%) patients, suggests that awareness of the hazardous nature of the disease should be aroused in population. Present survey study also reveals 200 (40.0 %) patients were with treatment history. (Table no.10).

Table 10 Percentage prevalence of Treatment wise

Sr. No.	Treatment	Total no. of subject's	%
1.	Yes	380	76.0
2.	No	120	24.0
Total		500	100

The patients who were taking allopathic medicines also suffered from its complications and not satisfied with the treatment.

Nidra (Sleep) – Maximum patients in the study i.e. 390 (78.0%) were with *asamyakanidra*. (Table No.11).

Table 11 Percentage prevalence of Sleep (*Nidra*) wise

Sr. No.	Sleep(<i>Nidra</i>)	Total no. of subject's	%
1.	<i>Samyaka</i>	110	22.0
2.	<i>Alpa</i>	260	52.0
3.	<i>Khandita</i>	230	46.0
Total		500	100

They were having either *khandita* or *alpanidra*. This observation may be found due to the disease has dominance of *vata* – *pitta* dosha. These *dosha* are responsible for less quantity of sleep or disturbed sleep. *Acharya Charaka* has said that when mind

gets fatigued, then it loses contact with the *indriyas* and individual gets sleep. But as hypertension is psychosomatic disease in which irritability of mind is also present. *Raja dosha* of *mana* stimulates *chalaguna* of *vayu*. Also *vata* is controller of the *mana*. This vitiation of *vata* mainly responsible for disturbed sleep in hypertensive patients.

Nidana- In the present survey study, *nidanas* were classified into *aharaja*, *viharaja* and *manasikanidana*. In the *aharaj anidana*, *atilavana sevana* was found in 345(69.0%) patients followed by *mamsa sevana* and *atisnigdha sevana* in 305(61.0%) and 300(60.0%) patients, respectively. Out of 500 patients in *aharaja* hetu taking *atikatusevana* 296 (59.2%) and *madyapana* 295 (59.0%) (Table no. 12).

In the present era, day-to-day lifestyle has been changed. In present time dietary habits just like fastfood etc. And disturbed life style are include in *viruddhahara*. *Viruddhahara* aggravation of *tridoshas*. Due to less availability of time in the present carrier oriented life, use of processed foods containing extra amount of salt etc. has increased. Latest study shows that salt intake by an Indian is about 9 gm/day and salt intake of more than 4 gm/day leads to hypertension, obesity and

Table 12 Percentage prevalence of *Nidana* wise



Sr. No.	Nidana	Total no. of subject's	%
AHARAJA HETU			
1.	<i>AtiLavanaSevana</i>	345	69.0
2.	<i>AtiKatuSevana</i>	296	59.2
3.	<i>MamsaSevana</i>	305	61.0
4.	<i>AtisnigdhaSevana</i>	295	59.0
5.	<i>MadyaPana</i>	300	60.0
6.	Tea/coffee	441	88.2
VIHARAJA HETU			
7.	<i>Avyayama</i>	201	40.2
	<i>Ratri-Jagarana</i>	307	61.4
8.			
9.	<i>Divaswapa</i>	208	41.6
10.	<i>Dhumrapana</i>	311	62.2
MANAS HETU			
11.	<i>Chinta</i>	398	79.6
12.	<i>Krodh</i>	401	80.2
13.	<i>Shoka</i>	297	59.4

other metabolic disorders. *Atilavana sevana*, *katu*, *ahara*, *madyapana* vitiates *vata-pitta dosha*. *Atisnigdha sevana* produces *kaphadosha* vitiation. This reveals that these causes of hypertension vitiates *tridosha* revealing its *tridoshaja* nature.

Viharajanidana responsible for the disease production includes *avyayama* 307 (61.4%), *ratri-jagarana* and *divasvapna* 208(41.6%, each) and *dhumrapana* (smoking) 200(40.0%) which were found in the study. *Avyayama* leads to *kaphaprakopa*, *Ratri-jagarana* and *dhumrapana* leads to *vata-pitta* vitiation. Further *divasvapna* causes *kapha-pitta prakopa*. Thus *viharajanidana* also results into *tridoshaprakopa* and development of hypertension. Amongst *manas hetu*, 401 (80.2%) patients were affected with *chinta*

and 350 (70.0%) patients were affected with *shoka* which causes *vatadushti*. *Krodha* was found in 297(59.4%) patients resulting into *pitta dosha* vitiation. (Table no. 12).

Chief complaints - In the present survey study, maximum i.e. 400 (80.0%) patients were having chief complaint like *Sirashshula*, *Krodh prachurata*. *Daurbalya* were present in 390 (78.0%) patients, each. Out of 500 patients *klama* present in 387 (77.4) patients and 370 (74.0%) patients were having complaint of *Bhrama*, 342 (68.4%) patients were with *Hritdrava* and 301 (60.2%) patients were with *Smiritinash*, 250 (50.0%) patients were having complaint of *Anidra*, while 209 (41.8%) patients were with *Shwaskritchata*, while 200 (40.0%) patients were suffering from *Bahumutrata* (Table no. 13). From these observations, it can be concluded that *tridosha* along with *rasa*, *raktadosha* are predominantly involved in essential hypertension. *Shirashshula* is the commonest symptom generally found in hypertensive patients indicating dominance of *vata*. Predominant *dushya* involved in *shiroroga* is *rakta*. Also, most of the symptoms of essential hypertension are similar to that of symptoms of *vatavyadhi* described by *Acharya Charaka*. *Rasa dushti* causes the symptoms like *hritdrava* and *klama*. *Vata-*



pitta vitiation is responsible for *anidra* and *bhrama*.

Table 13 Percentage prevalence of chief complaints

Sr. No	Complaints	Total no. of subject's	%
1.	<i>Sirahshula</i>	390	78.0
2.	<i>Bhrama</i> (<i>Vertigo</i>)	370	74.0
3.	<i>Klama</i> (<i>Fatigue</i>)	387	77.4
4.	<i>Kampa</i> (<i>Tremors</i>)	251	50.2
5.	<i>Daurbalya</i>	302	60.4
6.	<i>Hritdrava</i>	342	68.4
7.	<i>Smritinash</i>	301	60.2
08.	<i>Shwaskritchata</i>	209	41.8
09.	<i>Raktangakshita</i>	241	48.2

From these symptoms, it can be said that *vatadosha* vitiation is responsible for the production of the disease hypertension.

Pulse -The study reveals that maximum patients 240 (72.0%) were recorded with 81-90/minute pulse rate followed by 180 (36.0%) and 80 (16.0%) patients with 91-100/minute and 70-80/minute pulse rate. (Table No. 14) as till the age of 65.

Systolic Blood Pressure - The study reveals that maximum patients 220 (44.0%) were recorded with stage I (mild) systolic blood pressure followed by 200 (40.0%)

Table 14 Percentage prevalence of Pulse Rate wise

Sr. No.	Pulse Rate(/minute)	Total no. of subject's	%
1.	70-80	80	16.0
2.	81-90	240	72.0
3.	91-100	180	36.0
	Total	500	100

patients with stage II systolic blood pressure. And 80 (16%) patients with

elevated systolic blood pressure (Table No.15) as till the age of 65, diastolic BP rises.

Table 15 Percentage prevalence of Systolic B.P. wise:

Sr. No.	Systolic B.P.	Total no. of subject's	%
1.	Elevated(120-129)	80	16.0
2.	Stage I (130-139)	220	44.0
3.	Stage II (>=140)	200	40.0
4.	Total	500	100

Table 16 Percentage prevalence of Diastolic B.P. wise

Sr. No.	Diastolic B.P.	Total no. of subject's	%
1.	Elevated(>80)	10	02.0
2.	Stage I(80-89)	220	44.0
3.	Stage II (>=90)	270	54.0
	Total	500	100

Diastolic Blood Pressure –The survey study reveals that maximum patients 270 (54.0%) were recorded with stageII diastolic blood pressure followed by 220 (44.0%) patients with stage I diastolic blood pressure. And 10 (02%) patients with elevated diastolic blood pressure (Table No. 16). This is indicative of the pattern of disease in the area of Jaipur.

CONCLUSION

Regarding the *Nidana*, factors mainly genetic, dietary, habitual, psychological and environmental factors were observed practically. As most of the patients hailed from age group of above 35 years, though ageing is an important factor in occurrence of Essential Hypertension. It may be,



asserted that none of these factors influence the expression of the disease in segregation. All these factors interact amongst each other in a variety of permutations to compliment and compound the resultant effect on this pathological phenomenon.



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