

A CLINICAL EVALUATION OF 'MANSYADI YOGA' AND 'MANSYADI KWATH SHIRODHARA' IN THE MANAGEMENT OF RAKTAGATA VATA WSR TO ESSENTIAL HYPETENSION

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ABSTRACT

The changing concepts of life and modernity, urbanization and industrial development in the modern world have entirely changed the concepts of medicines and its approach in recent years. The medical profession is faced with the rapid growth of newer disorders whose cause lies in the society and modern way of life itself. The prevention and management of various kinds of psychosomatic and stress disorders have proved a challenge before the present-day medical profession and essential hypertension is one of them. Essential Hypertension is known as the 'Silent or Hidden Killer'. It is a major medical issue, especially because it has no symptoms. Many people have hypertension without knowing it. Hypertension increases the risk

of cardiovascular disorders, including coronary heart diseases (CHD), ischemic and haemorrhagic stroke, congestive heart failure (CHF), peripheral arterial diseases and renal failure. Along these lines, hypertension is gaining more and more attention globally. Indian Council of Medical Research (ICMR) & All India Institute of Medical Science (AIIMS) study pronounced that 'India as nation of hypertension'. It is also called a silent or hidden killer because most of the sufferers are asymptomatic and in more than 95% cases of hypertension underlying causes are not found. Such patients are said to have Essential Hypertension.

AIMS AND OBJECTIVES

1. To study the efficacy of “*Mansyadi Yoga*” in management of essential hypertension.
2. To study the efficacy of “*Mansyadi Yoga*” along with “*Mansyadi Kwath Shirodhara*” in the management of essential hypertension.
3. To study the etiopathogenesis of *Rakta-gata Vata* (Essential Hypertension) in *Ayurvedic* context.

Material and Methods: Minimum 40 & above well diagnosed & confirmed case of hypertension were selected randomly from OPD & IPD of University college of *Ayurveda*, *Jodhpur*, on the basis of WHO criteria for diagnosis of essential hypertension and symptoms described in *Ayurvedic* classical text.

GROUP-A: 20 well diagnosed & confirmed patients of *Rakta-gata Vata* (Essential Hypertension) were administered with *Mansyadi Yoga* 2 tab twice a day with lukewarm water for 45days. (Each tablet of 500 mg.).

GROUP-B: 20 well diagnosed & confirmed patients of *Rakta-gata Vata* (Essential Hypertension) were administered with *Mansyadi Yoga* 2 tab twice for 45 days along with *Mansyadi Kwath Shirodhara* for 14 days.

Results: Statically significant result was observed in both groups. **Conclusion:** Both drugs, *Mansyadi Yoga* and *Mansyadi Kwath Shirodhara* were found effective in reducing the systolic and diastolic blood pressure and also alleviates the symptoms of essential hypertension. No antagonist impact of the study drug was observed during the study.

KEYWORDS: *Rakta-gata Vata*, Essential Hypertension

INTRODUCTION

21th century described as the age of anxiety and stress. People don't have time to think about themselves, so they are becoming less anxious regarding health and taking more stress and strain. Therefore, these irregularities regarding health and mental stress leads to many physical and mental disorders, out of these hypertension is one of the alarming diseases.

The incidence of essential hypertension is extremely high in our nation & nearly has taken an epidemic shape. Hypertension being a chronic illness build up an important public health challenge because of its prevalence and associative increment in the risk of cardiovascular diseases. It is the commonest chronic medical condition in the developed world. Hypertension is regularly associated with additional cardiovascular disease risk factors, and

the risk of cardiovascular disease increments with the total burden of risk factors. Depending on the criteria for the diagnosis hypertension can be said to be present in 20-30% of the adult population. It is presently quickly turning into a significant issue in developing countries. It should not be such a great regarded as disease, however more as one of three treatable or reversible risk factors for premature death due to vascular disease.

Recent reports show that almost 1 billion adults (More than a quarter of the world's population) had hypertension in 2000, and this is anticipated to increase to 1.56 billion by 2025.^[1] 31% Male, 29.7% female are taking antihypertensive medication and 58.1% male, 45.5% female having uncontrolled blood pressure among person with hypertension.^[2] In India, the spreading of hypertension in the late part of nineties and mid twentieth century ranged from 2-15% in urban India and 2-8% in rural India, which has expanded 25% in urban and 10-15% in rural India.^[3] The prevalence of hypertension ranges from 20-40% in urban grown persons and 12-17% among rural grown persons. The number of people with hypertension is anticipated to increment from 118 million in 2000 to 214 million in 2025, with approximately equal of men and women.^[4] According to Directorate General of Health Services, Ministry of Health and Family Welfare, Gov. of India, the general prevalence of hypertension by 2020 will be 159.46/1000 population.^[5] As the reference of annual report of WHO, 2004 India is declared four time high prevalent in all age group in as compared to other developed countries.^[6]

NEED OF THE STUDY

The incidence of hypertension increasing day by day due to anxiety, stress and strain of day to day life. The prevalence of hypertension is very high in our country and almost taken an epidemic shape.

Modern medicine does not offer any promising cure for hypertension because of serious adverse reaction of drugs. Therefore, ayurvedic drugs are beneficial in such cases because herbs can positively influence health and quality of life.

AIMS AND OBJECTIVES

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2. To study the efficacy of "*Mansyadi Yoga*" along with "*Mansyadi Kwath Shirodhara*" in the management of essential hypertension.

3. To study the etiopathogenesis of *Raktagata Vata* (Essential Hypertension) in *Ayurvedic* context.

LITERARY REVIEW

Ayurveda is such a science which has specific beliefs. Its diagnosis approach is completely based on the sign and symptoms present in the patient. Hypertension is the recent invention of the modern science, there's no direct reference of it in *Ayurveda*. But there are many references in ancient texts about hemodynamic system including heart, blood vessels and the organ like *Shira*, *Hridaya* & *Basti* are commonly affected by the high blood pressure. The knowledge of *Nadi* has been known since ancient times. Description of blood circulation is found in *Vedas*.

Doshas involved in the circulatory function viz. *Vyana Vayu*, *Prana Vayu*, *Samana Vayu*, *Udana Vayu*, *Apana Vayu*, *Sadhaka Pitta* and *Avalambaka Kapha* are also important in the pathogenesis of hypertension. According to some scholars' symptoms of hypertension are quite similar to the described at the context of *Raktadushti* in *Vidhishonitiya Adhyaya*. Complications of the disease can be correlated with *Mada*, *Murcha*, *Sanyasa*. Further on the basis of involved *Dosha*, *Adhisthan* and *Lakshana* it is sure to say that it is a *Vata Vyadhi* especially *Avritta Vata Vyadhi*; because like *Vata Vyadhi*, hypertension is initially symptomless (*Avyakta Lakshana*) and lately manifests fleetingly (*Apaya* and *Laghuta*). Through analysis of certain relevant diseases, described in texts reveals that hypertension comprises a combined concept of various diseases like *Raktavritta Vata*, *Siragata Vata*, *Pittavritta Vata* and *Kaphavritta Vyana* etc. Therefore, consideration of hypertension on *Ayurvedic* fundamentals should be made from its symptomatology and involvement of *Dosha*, *Dushya* and *Strotasa* etc. from the pathogenesis and clinical manifestations of the hypertension it is evident that *Rasavaha Strotasas* are involved in it. Consideration of its psychosomatic nature also suggests involvement of *Manovaha Strotasa* (*Sangyavaha Strotasa*) in the disease.

In all above different opinions one can say that in hypertension the main pathogenesis occurs in *Rakta Dhatu* and *Dhamani*. It is considered as psychosomatic and *Tridoshaja* disorder with predominance of *Vata Dosha*. So, by considering etiopathogenesis of hypertension, it can be named as '*Raktagata Vata*'.

MODERN REVIEW

The concept of High blood pressure is a continuous increase in systolic BP of 140 mm Hg or greater and /or diastolic BP of 90 mm Hg or higher. By the normal criteria of average three B.P. Measurement on one occasion 140 systolic and/or 90 mm Hg diastolic or taking hypertensive medication.^[7]

Hypertension usually exist in grown-up adult aged 18 yrs. And older people who are not actually ill, are described as “SBP of 140 mm of Hg or more prominent and/or DBP of 90 mm of Hg or more prominent or any BP level in patients taking antihypertensive medication.”^[8]

8th JNC & WHO criteria for Diagnosis Hypertension^[9]

Category of HTN	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	<120	And <80
Pre-Hypertension	120-139	Or 80-90
Stage 1 Hypertension	140-159	Or 90-99
Stage 2 Hypertension	≥160	Or ≥100
Isolated Systolic Hypertension	≥140	And <90

This is the classification of blood pressure for adults aged 18 years and older not taking antihypertensive drug and not intensely ill. At the point when systolic and diastolic pressure fall into different categories, the higher category should be selected to classify the individuals blood pressure status. When one of the components of BP either systolic or diastolic is raised and other was normal, then it was named as isolated systolic or isolated diastolic hypertension.

MATERIALS AND METHODS

DESIGN OF STUDY

Single Centre, Open label, Randomized, Interventional Type, Efficacy Study.

1. SELECTION OF THE PATIENTS

20 well diagnosed & confirmed case of hypertension were selected randomly in each group and totally 40 patients were selected for this trial from OPD & IPD of University college of *Ayurveda, Jodhpur*, on the basis of WHO criteria for diagnosis of essential hypertension and symptoms described in *Ayurvedic* classical text.

A. INCLUSION CRITERIA

1. Patients of both sexes between the age group 18 to 60 years.
2. Patient who already diagnosed as essential hypertension were selected.
3. Patient willing to sign the consent form for the clinical trial.

B. EXCLUSION CRITERIA

1. Patients with age under 18 years or more 60 years.
2. Patients having secondary hypertension.
3. Pregnancy induced hypertension.
4. Patients with malignant hypertension i.e. blood pressure above 200/140 mm of Hg.
5. Patients having any other serious illness like Renal disease, Diabetic mellitus, Ventricular hypertrophy, Portal hypertension.
6. Patients of drugs like Oral contraceptive pills, Steroids.

2. GROUPING & ADMINISTRATION OF DRUG

After the completed examination and investigations, all the patients were divided randomly into two group details as below.

GROUP-A: 20 well diagnosed & confirmed patients of *Raktagata Vata* (Essential Hypertension) were administered with *Mansyadi Yoga* 2 tab. twice a day with lukewarm water for 45days. (Each Cap. of 500 mg.).

GROUP-B: 20 well diagnosed & confirmed patients of *Raktagata Vata* (Essential Hypertension) were administered with *Mansyadi Yoga* 2 tab. twice for 45 days along with *Mansyadi Kwath Shirodhara* for 14 days.

Follow up of patient was done regularly once after every 15 days i.e. on 15th, 30th and 45th day.

3. CRITERIA FOR ASSESSMENT

The diagnosis assessment of treatment was assed for the patients following symptoms and signs.

SUBJECTIVE CRITERIA

1. *Shirshool* (Headache)
2. *Bhrama* (Giddiness)
3. *Klama* (Fatigue)
4. *Hritspandan* (Palpitation)

5. *Swedhadhikyata* (Excessive Sweating)

6. *Anidra* (Insomnia)

SEVERITY SCORING OF *SHIRSHOOL* (HEADACHE)

1.	No <i>Shirshool</i> (Headache)	0
2.	<i>Shiroshool</i> (Headache) once or twice a week	1
3.	<i>Shirshool</i> (Headache) more than twice a week	2
4.	Continuous <i>Shirshool</i> (Headache) affecting partially	3
5.	Continuous throbbing pain covering complete <i>Shira</i> (Head)	4

SEVERITY SCORING OF *BHRAMA* (GIDDINESS)

1.	No <i>Bhrama</i> (Giddiness)	0
2.	<i>Bhrama</i> (Giddiness) once or twice a week	1
3.	<i>Bhrama</i> (Giddiness) more than twice a week	2
4.	<i>Bhrama</i> (Giddiness) daily	3

SEVERITY SCORING OF *KLAMA* (FATIGUE)

1.	No <i>Klama</i> (Fatigue)	0
2.	<i>Klama</i> (Fatigue) once a while during walking	1
3.	<i>Klama</i> (Fatigue) during walking twice in a week	2
4.	<i>Klama</i> (Fatigue) at rest once in a week	3
5.	<i>Klama</i> (Fatigue) at rest more than twice in a week	4

SEVERITY SCORING OF *HRITSPANDAN* (PALPITATION)

1.	No <i>Hritspandan</i> (Palpitation)	0
2.	<i>Hritspandan</i> (Palpitation) occasionally	1
3.	<i>Hritspandan</i> (Palpitation) on exertion	2
4.	<i>Hritspandan</i> (Palpitation) on vigorous activity	3
5.	<i>Hritspandan</i> (Palpitation) daily even at rest	4

SEVERITY SCORING OF *SWEDADHIKYATA* (EXCESSIVE SWEATING)

1.	No <i>Swedadhikyata</i> (Excessive sweating)	0
2.	Excessive sweating while climbing upstairs	1
3.	Profuse sweating with speedily walking	2
4.	Profuse sweating during walking	3
5.	Profuse sweating even at rest	4

SEVERITY SCORING OF *ANIDRA* (INSOMNIA)

1.	Sound sleep	0
2.	Occasionally disturbed sleep	1
3.	Disturbed sleep 2-3 hours	2
4.	Disturbed sleep 3-4 hours	3
5.	<i>Anidra</i> (Insomnia) whole night	4

ASSESSMENT ON BASIS OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURE LEVEL

RESULT	CHANGE IN BLOOD PRESSURE	% IMPROVEMENT
1. Excellent	The fall in S.B.P =30 mm Hg & fall in D.B.P is 15 & <15 mm Hg	75-100 %
2. Good	The fall in S.B.P =20-29 mm Hg & fall in D.B.P is 10-14 mm Hg	50-75 %
3. Fair	The fall in S.B.P =10-14 mm Hg & fall in D.B.P is 5-9 mm Hg	50-25 %
4. Poor	The fall in S.B.P = <10 mm Hg & fall in D.B.P is > 5 mm Hg	< 25 %

THE CRITERIA FOR THE ASSESSMENT OF OVERALL EFFECT OF THE THERAPIES

S.No.	Symptoms Relieved	Grading	Assessment
1	Less than 25%	Mild relief	Non-satisfactory
2	25% to 50%	Moderate relief	Good
3	50% to 75%	Significant relief	Satisfactory
4	75% to 100%	Complete relief	Excellent

C. OBJECTIVE CRITERIA

Objective criteria were observed before and after finding of laboratory parameters. The parameters selected were as follows.

1. Assessment of change in Blood Pressure in supine position.
2. Haematological Tests: Hb%, TLC, DLC, ESR.
3. Biochemical Investigations:
Renal Function Test (Blood urea, Sr. Creatinine),
Lipid profile (Sr. Triglyceride, Sr. Cholesterol)
Blood sugar (Fasting, Post Prandial)
4. Urinalysis
5. ECG (excluding patient for LVH, prolonged QRS complex, MI indicative T wave elevation)
6. Chest X ray (to rule out cardiomegaly patients)

4. SELECTION OF DRUGS

1. MANSYADI YOGA

S.No.	Name of Drug	Latin Name	Part Used	Amount (MATRA)
1.	<i>Jatamansi</i>	<i>Nordostachys Jatamansi</i>	Root	1 Part
2.	<i>Sankhpusphi</i>	<i>Convolvulus Pluricaulis</i>	Whole Plant	1 Part
3.	<i>Sarpgandha</i>	<i>Rauwolfia Serpentina</i>	Root	3 Part
4.	<i>Arjun</i>	<i>Terminalia Arjuna</i>	Bark	1 Part
5.	<i>Tagar</i>	<i>Valeriana Wallichii</i>	Root	1 Part
6.	<i>Pipalli Mool</i>	<i>Piper Longum</i>	Root	1 Part
7.	<i>Haritaki</i>	<i>Terminalia Chebula</i>	Fruit	
8.	<i>Bibhitaka</i>	<i>Terminalia Bellirica</i>	Fruit	1 Part
9.	<i>Aamlaki</i>	<i>Emblica Officinale</i>	Fruit	
10.	<i>Sunthi</i>	<i>Zinziber Officinale</i>	Rhizome	
11.	<i>Marich</i>	<i>Piper Nigrum</i>	Fruit	1Part
12.	<i>Pipalli</i>	<i>Piper Longum</i>	Fruit	

METHOD OF PREPARATION OF TRIAL DRUG

The coarse powder (*Yavkutta Churna*) form of all the drugs as described above in the table will be taken. Then, the eight times of water will be added to it and boiled on medium flame till it reduce to one fourth in the quantity. Then the formed decoction (*Kwath*) will be filtered and filtered decoction will be condensed by continued boiling till the formation of *Ghana* (semisolid form). Then *Ghan* will be made into the form of pills (*Vati*) of 500 mg in DSRRAU pharmacy.

2. MANSYADI KWATH SHIRODHARA^[10]

S.No.	Name of drug	Latin name	Part used	Amount (MATRA)
1.	<i>Jatamansi</i>	<i>Nardostachys Jatamansi</i>	<i>Rhizomes</i>	1 part
2.	<i>Ashwagandha</i>	<i>Withania Somnifera</i>	<i>Roots</i>	1/4 part
3.	<i>Parsika Yawani</i>	<i>Hyocymus Niger</i>	<i>Seed</i>	1/8 part

METHOD OF PREPARATION OF TRIAL DRUG

The coarse powder (*Yavkutta Churna*) form of all the drugs as described above in the table are taken in 1:4:8 proportion. Now, the eight times of water is added to it and boiled on medium flame till it reduce to one fourth in the quantity and This decoction (*Kwath*) is used for *Dhara* after filtering & cooling.

MODE OF ADMINISTRATION

1. *Mansyadi Yoga* 2 cap. Twice in a day (Each Tab. of 500 mg.). with lukewarm water.
2. *Mansyadi Kwath Shirodhara* for 14 days.

OBSERVATIONS

1. Maximum incidence was found in between Age group 41-60 years (57.5%), Male sex (80%), Hindu religion (100%), Married (100%), Middle socio-economic status (55%), Graduate and Post-graduate (37.5%), Urban area (52.5%), Maximum number of the patients 62.5% were having vegetarian diet.
2. Maximum number of patients (42.5%) were of *Vata-Pitta Prakriti*, Maximum number of patients (62.5%) *Rajasika Prakriti*, Maximum (47.5%) were of *Madhyama Sara*, Maximum (57.5%) *Madhyama* type of *Samhanana*, Maximum (47.5%) were of *Madhyama Satva*, Majority of patients (55%) were having *Madhyama Saatmya*, Maximum number of patients (52.5%) had *Madhyama Aahara Abhyaharana Shakti*, Maximum number of patients (70%) had *Madhyama Aahara Jarana Shakti*, Maximum number of patients (42.5%) were having *Kroora Kostha*, Maximum (30%) were having *Vishamagni*, Maximum number of patients (47.5%) had *Madhyama Vyayama Shakti*.
3. 87.5% patients had complaint of *Hritspandan*, 85% patients had complaint of *Shirshool*, 82.5% patients had complaint of *Swedadhikyata*, 80% patients had complaint of *Anindra*, 77.5% patients had complaint *Kalma* and 57.5% patients had complaint of *Bhrama*.
4. Maximum 77.5% patients were recorded stage I systolic blood pressure followed by 17.5% patients was suffering from stage II systolic blood pressure. 67.5% patients were reported stage I diastolic blood pressure while that was of stage II in 22.5% patients.
5. In *Aharaja Nidana*, *Ati lavana Sevana* was found in 42.5% patients, *Ati Katu Tikshna Aahar Sevan* in 40%, *Ati Snigdha Seven* was observed in 37.5%, 15 % patients were found to have alcohol consumption.
6. Laboratory Investigations- In Group A the mean score of HB% was 13.25 and in Group B the mean score was 13.87. In Group A the mean score of TLC was 5995 and in Group B the mean score was 6080. In Group A mean score of Blood Urea was 25.23 and in Group B the mean score was 26.12. In Group A the mean score of Sr. Creatinine was 0.958 and in Group B the mean score was 0.954. In Group A mean score of Sr. Cholesterol was 221.75 and in Group B the mean score was 231.00. in Group A the mean score of Sr. Triglyceride was 150.20 and in Group B the mean score was 159.60. In Group A the mean score of Blood Sugar (Fasting) was 94.5 and in Group B the mean score was 100.9.

RESULTS

Below Table showing Effect of therapeutic trial on Subjective Parameters (clinical symptomatology) in 40 patients of *Raktagata Vata* (Essential Hypertension) using Wilcoxon Matched Pairs Signed Rank Test.

S.NO.	Variable	Gr.	Mean		Mean Diff.	% Relief	S.D.±	S.E.±	P-value	S
			BT	AT						
1.	<i>Shirshool</i> (Headache)	A	2.050	0.9500	1.100	53.65	0.6407	0.1433	0.0001	ES
		B	1.900	0.7500	1.150	60.52	0.7452	0.1666	0.0001	ES
2.	<i>Bhrama</i> (Giddiness)	A	1.200	0.6000	0.6000	50.00	0.5026	0.1124	0.0002	ES
		B	1.200	0.5500	0.6500	54.16	0.6708	0.1500	0.0005	ES
3.	<i>Klama</i> (Fatigue)	A	1.950	0.9000	1.050	53.84	0.6863	0.1535	0.0001	ES
		B	2.000	0.8500	1.150	57.50	0.8127	0.1817	0.0001	ES
4.	<i>Hritspandan</i> (Palpitation)	A	2.100	1.000	1.100	52.38	0.5525	0.1235	0.0001	ES
		B	2.200	0.9500	1.250	56.81	0.7864	0.1758	0.0001	ES
5.	<i>Swedadhikyata</i> (Excessive Sweating)	A	2.100	0.9500	1.150	54.76	0.6708	0.1500	0.0001	ES
		B	2.100	0.9000	1.200	57.14	0.7678	0.1717	0.0001	ES
6.	<i>Anindra</i> (Insomnia)	A	1.750	0.8000	0.9500	54.28	0.7592	0.1698	0.0001	ES
		B	1.800	0.6500	1.150	63.88	0.5871	0.1313	0.0001	ES

(Gr: Group; BT: Before Treatment; AT: After Treatment; %: Percentage; S.D: Standard Deviation; SE: Standard Error; *p*: P Value; ES: Extremely Significant; VS; Very Significant; S: Significant)

Below Table showing Effect of therapeutic trial on Objective Parameters in 40 patients of *Raktagata Vata* (Essential Hypertension) using Paired 't' test.

Variable	Gr	Mean		Mean Diff.	% Relief	S.D.±	S.E.±	P-value	t-value	S
		BT	AT							
Blood Pressure (Systolic)	A	149.30	129.10	20.200	13.52	7.564	1.691	<0.0001	11.942	ES
	B	150.30	126.70	23.600	15.70	6.946	1.553	<0.0001	15.194	ES
Blood Pressure (Diastolic)	A	96.300	85.600	10.700	11.11	4.366	0.9763	<0.0001	10.960	ES
	B	95.000	82.900	12.100	12.73	3.339	0.7466	<0.0001	16.207	ES

BIOCHEMICAL IMPROVEMENT PROFILE

Variable	Gr	Mean		Mean Diff.	% Relief	S.D.±	S.E.±	P-value	t-value	S
		BT	AT							
Haemoglobin	A	13.255	13.830	-0.5750	4.33	0.5310	0.1187	<0.0001	4.843	ES
	B	13.875	14.645	-0.7700	5.54	0.8743	0.1955	0.0004	3.939	ES
TLC	A	5995.0	5802.5	192.50	3.21	548.75	122.70	0.0666	1.569	NS
	B	6080.0	5820.0	260.00	4.27	623.36	139.39	0.0388	1.865	S
Blood Urea	A	25.235	24.690	0.5450	2.15	2.038	0.4556	0.1232	1.196	NS
	B	26.125	25.075	1.050	4.01	3.415	0.7636	0.0926	1.375	NS
Serum Creatinine	A	0.9585	0.9100	0.04850	5.05	0.07741	0.01731	0.0057	2.802	VS
	B	0.9540	0.9185	0.03550	3.72	0.07722	0.01727	0.0269	2.056	S

Serum Cholesterol	A	221.75	204.40	17.350	7.82	27.462	6.141	0.0054	2.825	VS
	B	231.00	214.10	16.900	7.31	23.766	5.314	0.0025	3.180	VS
Serum Triglyceride	A	150.20	136.05	14.150	9.42	21.991	4.917	0.0048	2.878	VS
	B	159.60	143.85	15.750	9.86	20.344	4.549	0.0013	3.462	VS
Blood Sugar (Fasting)	A	94.500	90.225	4.275	4.52	5.639	1.261	0.0015	3.391	VS
	B	100.95	97.595	3.350	3.31	9.408	2.104	0.0639	1.592	NS

INTER GROUP STUDY

Below Table showing Effect of therapeutic trial on Subjective Parameters in 40 patients of *Raktagata Vata* using Mann-Whitney test.

S.No.	Variable	U (Mann-Whitney)	P-value	Significance
1.	<i>Shirshool</i> (Headache)	197.50	0.4754	NS
2.	<i>Bhrama</i> (Giddiness)	198.00	0.4817	NS
3.	<i>Klama</i> (Fatigue)	183.50	0.3207	NS
4.	<i>Hritspandan</i> (Palpitation)	179.00	0.2633	NS
5.	<i>Swedadhikyata</i> (Excessive Sweating)	190.00	0.3899	NS
6.	<i>Anindra</i> (Insomnia)	170.00	0.1877	NS

Below table showing Effect of therapeutic trial on Objective Parameters in 40 patients of *Raktagata Vata* using Unpaired 't' test.

S.No.	Variable	t-value	P-value	Significance
1.	Blood Pressure (Systolic)	1.481	0.0735	NS
2.	Blood Pressure (Diastolic)	1.139	0.1309	NS

Below table showing Effect of therapeutic trial on Objective Parameters in 40 patients of *Raktagata Vata* Unpaired 't' test.

S.No.	Variable	t-value	P-value	Significance
1.	Haemoglobin	0.8526	0.1996	NS
2.	TLC	0.3635	0.3591	NS
3.	Blood Urea	0.5679	0.2867	NS
4.	Serum Creatinine	0.3581	0.3611	NS
5.	Serum Cholesterol	0.05541	0.4780	NS
6.	Serum Triglyceride	0.2388	0.4063	NS
7.	Blood Sugar (Fasting)	0.3771	0.3541	NS

OVERALL EFFECT OF CLINICAL TRIAL

Below Table Showing the % relief of clinical trial on Subjective Parameters (both groups).

S.No.	Subjective Parameters	% Relief	
		Group A	Group B
1.	<i>Shirshool</i> (Headache)	53.65%	60.25%
2.	<i>Bhrama</i> (Giddiness)	50.00%	54.16%
3.	<i>Klama</i> (Fatigue)	53.84%	57.5%
4.	<i>Hritspandan</i> (Palpitation)	52.38%	56.81%
5.	<i>Swedadhikyata</i> (Excessive Sweating)	54.76%	57.14%
6.	<i>Anindra</i> (Insomnia)	54.28%	63.88%
Total		53.15%	58.29%

Table no. reveals that symptomatically, 53.15% relief was observed in group A while 58.29% relief was observed in Group B. So, it can be saying that Satisfactory/ Significant relief was found in both groups.

Below Table Showing the % relief of clinical trial on Objective Parameters Improvement Profile (both groups).

S.No.	Objective Parameters	% Relief	
		Group A	Group B
1.	Blood Pressure (Systolic)	13.52%	15.70%
2.	Blood Pressure (Diastolic)	11.11%	12.73%

Below Table Showing the % relief of clinical trial on Objective Parameters (both groups),

S.No.	Subjective Parameters	% Relief	
		Group A	Group B
1.	Haemoglobin	4.33%	5.54%
2.	TLC	3.21%	4.27%
3.	Blood Urea	2.15%	4.01%
4.	Serum Creatinine	5.05%	3.72%
5.	Serum Cholesterol	7.82%	7.31%
6.	Serum Triglyceride	9.42%	9.86%
7.	Blood Sugar (Fasting)	4.52%	3.31%

EFFECT OF TREATMENT**EFFECT OF MANSYADI YOGA**

- In **Group A**, the mean Systolic Blood Pressure before treatment was 149.30 which reduced to 129.10 after treatment, with $SD \pm 7.564$ giving a relief of 13.52%, which is statistically **extremely significant** ($P < 0.001$).

- In **Group A**, the mean Diastolic Blood Pressure before treatment was 96.300 which reduced to 85.600 after treatment, with $SD \pm 4.366$ giving a relief of 11.11%, which is statistically **extremely significant** ($P < 0.001$).
- The percentage of relief in the symptoms was as follows *Shirshool* (Headache) 53.65%, *Bhrama* (Giddiness) 50.00%, *Kalma* (Fatigue) 53.84%, *Hritspandan* (Palpitation) 52.38%, *Swedadhikyata* (Excessive Sewating) 54.76%, *Anindra* (Insomnia) 54.28%.

EFFECT OF MANSYADI YOGA & MANSYADI KWATH SHIRODHARA

- In **Group B**, the mean Systolic Blood Pressure before treatment was 150.30 which reduced to 126.70 after treatment, with $SD \pm 6.946$ giving a relief of 15.70%, which is statistically **extremely significant** ($P < 0.001$).
- In **Group B**, the mean Diastolic Blood Pressure before treatment was 95.000 which reduced to 82.900 after treatment, with $SD \pm 3.339$ giving a relief of 12.73%, which is statistically **extremely significant** ($P < 0.001$).
- The percentage of relief in the symptoms was as follows *Shirshool* (Headache) 60.52%, *Bhrama* (Giddiness) 54.16%, *Kalma* (Fatigue) 57.50%, *Hritspandan* (Palpitation) 56.81%, *Swedadhikyata* (Excessive Sweating) 57.14%, *Anindra* (Insomnia) 63.88%.

IN PRESENT STUDY- OVERALL EFFECT OF THERAPY AS FOLLOW

Below Table Showing the overall effect of therapy

Effects	Group A		Group B	
	No. of Patients	Percentage	No. Of Patients	Percentage
No relief (Unchanged)	00	00	00	00
Mild relief	01	05	00	00
Moderate relief	08	40	03	15
Significant relief	06	30	08	40
Excellent relief	05	25	09	45

In Group A- Excellent relief was found in 25% of patients, while significant relief in 30%, moderate relief in 40% whereas 5% were found mild relief. While in Group B- Excellent relief was found in 45% of patients, while significant relief in 40%, whereas 15% were found moderate relief.

DISCUSSION AND SUMMARY

PROBABLE MODE OF ACTION OF MANSYADI YOGA

- The study drug “*Mansyadi Yoga*” contains twelve *Ayurvedic* herbal drugs viz. *Jatamansi*, *Sankhpusphi*, *Sarp Gandha*, *Arjun*, *Tagar*, *Pipalli Mool*, *Haritaki*, *Bibhitaka*, *Amlaki*, *Sunthi*, *Marich* & *Pipalli*. Ingredients of this drug have predominantly *Tikta*, *Katu*, *Kashaya Rasa*; *Laghu*, *Snigdha* and *Ruksha Guna*; *Ushna*, *Sheeta Virya*; *Katu*, *Madhur Vipaka*; *Tridoshashamaka*, *Hridya*, *Medhya*, *Vrsya*, *Rasayana*, *Dipana*, *Pachana* & *Manasadoshara* properties
- *Mansyadi Yoga* are having *Mastishkashamak*, *Nidraakar*, *Hridaya*, *Medhya*, *Manasdosahara*, *Rasayana*, *Dipana Pachana* and *Strotoshodhana* properties. By combine action of all these *Guna*, *Karma* and *Prabhava* the trial drug *Mansyadi Yoga* produce synergic action by induced sleep reduce *shirshool*, *Bhrama*, *Klama*, *Hritspandan*, *Swedadhiyata* and produce desirable effect in the management of *Raktagata Vata*.
- *Medhya Prabhava* of *Sankhpusphi*, *Bhutaghna Prabhava* of *Jatamansi* corrects the vitiation of *Bhrama* (*Raja* & *Tama*) by penetrating into *Manovaha Strotsa*.
- *Sarp Gandha* & *Tagar* has *Nindrakar* property which reduces stress level and may normalized the *Raja Dosha* of *Mana*, thus giving stability of mind.
- *Sarp Gandha* may reduce the blood volume resulting into decrease blood pressure due to their *Mutrala* property. The drug possesses *Tridosahara* (*Jatamansi*, *Sankhpusphi*) property by which etiopathogenesis of the disease may be broken at the level of *Tridosha* as in essential hypertension there is involvement of *Tridosha*.

So, by the virtue of combined effects of all above chemical constituents, *Mansyadi Yoga* acts as hypotensive, tranquillizer and sedative.

PROBABLE MODE OF ACTION OF SHIRODHARA WITH MANSYADI KWATH

- *Jatamansi* is *Tridoshashamaka* and *Manasadoshahara*. Its Pharmacological aspect is Hypotensive, CNS-Depressant, Tranquillising, Antianxiety and properties is *Tikta*, *Kshaya* and *Madhura Rasa*, *Snigdha* and *Laghu Guna*, *Sheeta Virya* and *Katu Vipaka*. *Acharya Charaka* has stated it as *Sangyasthapaka*. It has *Jatamansone* alkaloid which is reduce aggressiveness, restlessness and stubbornness as well as insomnia.^[11] Studied the effect of *Jatamansi*, it has significant increase level of Epinephrine, Dopamine, Serotonin and Gamma-amino butyric acid (GABA).
- Studies show that the *Jatamansi*, significant increase level of Epinephrine, Dopamine, Serotonin and Gamma-amino butyric acid (GABA).^[12]

- *Parseek Yavani* is *Pittavardhaka* and *Kapha-Vatashamaka*, it produces sedative impact due to *Madaka Prabhava*, reduces headache due to *Vednasthapaka Prabhava*. It has Hyoscine (Scopolamine) alkaloid, which is muscarinic receptor antagonist and anticholinergic that's the reason it produces sedative effect.^[13]
- It also has hyoscyamine, which has same impact, yet hyoscyamine has 98 percent of the anticholinergic intensity of atropine and the other significant belladonna-derived drug.^[14]
- *Ashwagandha* is *Kaphavata Samaka*, has *Tikta*, *Katu* and *Madhura Rasa*, *Laghu* and *Snigdha Guna*, *Ushna Virya* and *Madhura Vipaka*. It mollifies *Vata* due to *Madhura Rasa*, *Snigdha Guna*, *Ushna Virya* and *Madhura Vipaka*. Its pharmacological perspective is hypotensive, Anti-stress, Analgesic, Sedative etc. it has negative effect on stress, including elevated levels of the stress hormone cortisol.

CONCLUSION

- Both drugs, *Mansyadi Yoga* and *Mansyadi Kwath Shirodhara* were found effective in reducing the systolic and diastolic blood pressure and also alleviates the symptoms of essential hypertension. No antagonist impact of the study drug was observed during the study.
- Based on the various observation and results acquired after finishing of the current research work, it can be concluded that, *Mansyadi Yoga* and *Mansyadi Kwath Shirodhara* may be used in the management of *Raktagata Vata* (Essential hypertension). The clinical response regarding improvement in blood pressure and several symptoms of essential hypertension was milder in *Mansyadi Yoga* treated group, moderate in patients of *Mansyadi Yoga* and *Mansyadi Kwath Shirodhara* group.
- Therefore, it can be concluded that, therapy in the form of administration of *Mansyadi Yoga* and *Mansyadi Kwath Shirodhara* separately or in combination is a safe and effective in the management of *Raktagata Vata* (Essential Hypertension).

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