

A CLINICAL STUDY ON THE MANAGEMENT OF ESSENTIAL HYPERTENSION

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ABSTRACT

Stress related diseases are rapidly increasing now a days. Among the psychosomatic diseases, the cardiovascular disorder like hypertension is quite significant disease. In 2000, it was estimated that 25% of the world's adult population were hypertensive, and predicted that this would rise to 29% by 2025. By the age of 60, more than one-half of adults in most regions of the world will be hypertensive. In Ayurveda system of medicine, *MedhyaRasayana* has been described as molecular nutrient for brain, used to relieve anxiety, stress and mental fatigue. As *Virechana* has also been equally effective in *Rakta, pitta and vata* vitiation, it has been selected as *shodhana* measure, to trump over offending *tridosas*, therefore, mental health promoting drugs and the drugs acting on heart and kidney in compound formulation with *virechanakarma* has been selected for the purpose of study in hypertensive patients. Keeping in view the above concepts, the research work entitled, "A clinical study on the management of Essential Hypertension" was carried out in VYDSAM, *Khurja, Bulandshahr*. The result of the study showed that *Virechana* and indigenous drugs as combined treatment helped in reducing both Systolic and Diastolic blood pressure significantly.

Keywords: *Medhya Rasayana, Virechana, Shodhana, Shamana, Essential Hypertension, etc.*

INTRODUCTION

High blood pressure is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations.^{1,2} Prevalence of hypertension ranges from 20-40% in urban adults and 12-17% among rural adults. The number of people with hypertension is projected to increase from 118 million in 2000 to 214 million in 2025, with nearly equal numbers of men and women.³

The response to the psychological conditions varies person to person because each has different psychic and bodily constitution. However, these stressors play certain role in the development, progression, prognosis as well as management of the disease. This stressful lifestyle affects one's mind and homeostasis of body by several psychosomatic mechanisms and causes many psychosomatic disorders. The Essential hypertension is one of such diseases. Es-

essential hypertension remains a major modifiable risk factor for cardiovascular disease despite important advances in our understanding of its pathophysiology and the availability of effective treatment strategies. The incidence of end-stage renal disease and the prevalence of heart failure have also increased; a major contributor to these trends is inadequate control of BP in the hypertensive population.

Ayurveda is one of the most ancient medical sciences of the world. It conceives and describes the basic and applied aspects of life process, health, disease and its management in terms of its own principles and approaches.

Hypertension can be correlated with *Dushti* of *Vata* (*Vyana* & *Pranavayu*), *Pitta* (*Sadhaka*) and *Manovaha Srotasa* involving *Hridaya*, *Rasayani*, *Oja* and process of *Rasa Vikshepana*. It is due to disturbed psychological factors like *Chinta* (Worry), *Tanav* (Stress), *Krodha* (Anger) etc., producing Hypertensive State.

According to nature of disease it is essential to combine such herbs, which have *tri-dosh har* property and also must be act on *manodosha* (psyche), heart, brain and kidney (*Trimahamarmas*) as well as in disorders of G. I. Tracts. In *Ayurvedic* system of medicine, *Medhya Rasayana* has been described as molecular nutrient for brain used to relieve anxiety, stress and mental fatigue, and *virechana* as *tri-*

dosh har.^{5,6} Therefore, mental health promoting drugs in composition with the herbs acting on heart kidney and git in compound formulation with *virechana* has been selected for the purpose of study undertaken. Keeping in view the above concepts, the research work entitled, “The clinical study on the management of essential hypertension”, has been carried out at V.Y.D.S.A.M , Khurja, Bulandshar.

Aims and Objectives

- 1) To study the aetio-pathogenesis of essential hypertension in light of both Ayurvedic and modern perspectives.
- 2) To assess the efficacy of *shamana yoga* in the management of essential hypertension.
- 3) To evaluate the role of *Virechana Karma* with *Shamana yoga* in the management of essential hypertension.

Material and Methods:

For the present study, 44 patients of essential hypertension were selected from O.P.D. & I.P.D. section of *Kaya Chikitsa* department V.Y.D.S.A.M., Khurja, Bulandshahr. Those patients whose BP was found high were selected for the study. Diagnosis was done on the basis of following criteria:

Diagnosis Criteria:

For diagnosis, standard criteria of High Blood Pressure were adopted.

Table 1:

	Systolic(mm./hg)	Diastolic(mm./hg)
Normal	<140	<90
Stage – I (Mild)	140-159	90-99
Stage – II (Moderate)	160-179	100-109
Stage – III (Severe)	180-209	110-119
Stage – IV (V. Severe)	> 210	>120

[Joint National Committee (JNC), WHO/International Society of Hypertension]

Exclusion Criteria:

The patients suffering from the following conditions were excluded:

Arteriosclerosis

Aortic- regurgitation

Arterio-venous fistula

Renal and adrenal pathologies

Prostate enlargement

Toxaemia of pregnancy

Neurogenic and iatrogenic conditions etc.

Routine haematological, urine, stool examination and biochemical investigations like FBS, PPBS, S-cholesterol, S-triglyceride, S-creatinine, Blood urea etc. were conducted to assess the present condition of the patients as well as to exclude the other pathological conditions.

ECG was done to see the hypertrophy and ischaemic changes in doubtful cases.

Necessary steps were taken to exclude other conditions as per facilities available in the institute.

DRUGS

Virechana Yoga: One of the following drugs was used in specific formulation, according to *bala, kostha* and *agni*.

Trivrit, Haritaki, Aragvadh, Eranda

Shamana Yoga. It includes most of *Rasayan* drugs acting on *manovaha, annavaha, pranava-haSrotas, mutravahasrotas*.

Following combination was used as *shaman* treatment. (*ubhayvipreet*)

Brahmi, Shankhpushpi, Ashwagandha, Jata-mansi, ParasikYawani, Arjun, Punarnava, Gokshura.

Plan of Study:

44 patients of essential hypertension were randomly distributed into the following therapeutic groups:

Group A – Virechana followed by Shamana Yoga:

In this group the *Virechana* therapy was advocated to the patients with employing *Virechana Yoga, according to balakostha and agni*, following the proper methodology. Prior to *Virechana Karma, DeepanPachana* for five days with *chitrakadivati*, 500mg twice a day with *koshnajala*. It was followed by *Abhyantar Snehana* with *ShuddhaGhrit*, were under taken. After proper *Virechana Karma (madhyamshud-dhi)* and *Sansarjana Karma* was done according to type of *shodhan (approx. 5-7 days)*. This was followed by *shamana* treatment with *shamana yoga* 10mg/day in 2 divided doses for two month.

Follow Up: After the completion of the therapy, patient was advised to visit O.P.D. at every week for the follow up of 1 month.

Group B – Shamana yoga:

In this group of patients, combination of indigenous drugs was administered in the dose of 10 gm/day in 2 divided doses for the duration of 2 months.

Follow Up:

After the completion of the therapy, patient was advised to visit O.P.D. at every week for the follow up of 1 month.

CRITERIA FOR ASSESMENT:

1. On the basis of cardinal sign (persistent elevated blood pressure): By noting the alteration in the systolic and diastolic blood pressure, before and after treatment.
2. On the basis of total effect of therapy:

The total effect of therapy was assessed, by determining the percentage of score reduction.

Assessment	Score
Excellent response	>75%
Marked response	50-75%
Mild improvement	25-50%
No response	<25%

STATISTICAL ANALYSIS:

The information gathered on the basis of observation was subjected to statistical analysis in term of mean (x), standard deviation (S.D.),

standard error (S.E.) and paired test (t) were carried out at $p < 0.05$, $p < 0.01$ and $p < 0.001$. The obtained results were interpreted as –

Improvement	$p < 0.05$
Significant	$p < 0.01$
Highly significant	$p < 0.001$

Therapeutic regimen:

The randomly selected 44 patients were subdivided in to two groups to compare the efficacy of both regimes. The treatment schedule was as follows:

Table 2:

Group	Group	No.of pts.	Drug	Dose	Duration
A	<i>Virechana + Shamana</i>	22	1. <i>Virechana Yoga</i> 2. <i>Shamana Yoga</i>	10gms/day	Acc. to <i>kostha and agnibala</i> Two month
B	<i>ShamanaChikitsa</i>	22	<i>Shamana Yoga</i>	10gms/day	two month

Diet:

Patients of both the groups were advised to take salt and oil restricted diet.

Presentation of Data:

It incorporates the results of therapies, evaluated by the improvement in the signs and symptoms, along with effect on various physical and biochemical parameters and total effect of therapeutic regimen.

Effect of Therapies:

44 patients were selected in the present study, out of them 8 patients had left treatment before completion of the regimen. While 4 patients not came for follow up study. The result of therapies was assessed on 32 patients. The efficacy of each therapy was adjudged on varied parameters and the results were derived after execution of statistical methodology. The effect of each therapy has been presented in the pages that would follows.

Table 1: Alteration in blood pressure, before and after treatment

B.P.	Mean		x	% Relief	S.D.	S.E.	t	p
	B.T.	A.T.						
Group A								
S.B.P.	166	129.29	36.47	22.01	7.19	1.74	20.9	<0.001
D.B.P.	107	84.70	22.94	20.43	5.57	1.35	16.97	<0.001
Group B								
S.B.P.	162	136	26.4	16.05	7.97	2.06	12.83	<0.001
D.P.B.	105.8	86.53	19.07	18.21	5.90	1.52	12.52	<0.001

Effect of Therapies on Cardinal Sign:**Table 2:** on Hb%

Hb %	Mean		x	% Relief	S.D.	S.E.	t	P
	B.T.	A.T.						
Group A	12.52	13.0	0.47	3.75	0.87	0.21	2.22	<0.05
Group B	13.28	12.74	-0.53	4.07	1.19	0.31	-1.73	>0.05

Table 3: Effect on ESR

ESR	Mean		x	% Relief	S.D.	S.E.	T	P
	B.T.	A.T.						
Group A	24.70	22.70	2.00	8.10	12.79	3.10	0.64	>0.05
Group B	17.86	21.06	-3.87	17.92	5.93	1.53	-2.53	>0.05

Table 4: Effect on Serum Cholesterol

Serum Cholesterol	Mean		x	% Relief	S.D.	S.E.	T	P
	B.T.	A.T.						
Group A	216.70	185.29	31.41	14.50	29.62	7.18	4.37	<0.001
Group B	192.26	189.13	3.13	1.63	36.71	9.48	0.33	>0.05

Table 5: Effect on Blood Urea

Blood Urea	Mean		x	% Relief	S.D.	S.E.	T	P
	B.T.	A.T.						
Group A	22.47	17.42	4.65	20.68	8.82	2.14	2.17	<0.05
Group B	20.89	21.14	-0.05	1.20	3.47	0.90	-0.05	>0.05

Table 6: Effect on Serum creatinine

Serum Creatinine	Mean		x	% Relief	S.D.	S.E.	T	P
	B.T.	A.T.						
Group A	0.85	0.91	-0.07	7.16	0.19	0.05	1.41	>0.05
Group B	0.82	0.78	0.04	4.88	0.12	0.03	1.36	>0.05

Table 7: Effect on Blood Sugar (Fasting)

Blood Sugar. F.	Mean		x	% Relief	S.D.	S.E.	T	P
	B.T.	A.T.						
Group A	96.94	99.05	-2.12	2.18	11.05	2.68	-0.79	>0.05
Group B	98.15	95.99	8.84	2.20	28.14	7.27	1.22	>0.05

Table 8: Effect on Blood Sugar (P.P.)

Blood Sugar (P.P)	Mean		x	% Relief	S.D.	S.E.	t	P
	B.T.	A.T.						
Group A	125.11	113.11	11.94	9.59	30.32	7.35	1.62	>0.05
Group B	128.66	129.93	-4.87	0.99	34.78	8.98	0.54	>0.05

Table 9: Estimation of Overall Response in Each Group

Assessment	Group A		Group B	
	No. of patients	%	No. of patients	%
Excellent responses (>75%)	09	52.94	03	20.00
Marked response (50-75%)	06	41.17	09	60.00
Mild improvement (25-50%)	01	5.88	02	13.33
No response (<25%)	01	5.88	01	6.66

Table number shows the estimated over all response in each group.

Group A:

52.94% of the patients showed excellent response, 41.17% Marked response, 5.88% Mild response and 5.88% patients were showed no response.

Group B:

20% of the patients had excellent response, 66.66% Marked response, 6.66% Mild response and 6.66% patients showed no response.

EFFECT OF THERAPIES

Effect on cardinal sign –

Persistent elevated blood pressure:

It was found that Group A (*Virechana+shamana* treatment group) rendered 22.01% relief in systolic blood pressure and 20.43% in diastolic blood pressure. The results were statistically highly significant in lowering systolic and diastolic blood pressure.

In Group B (*Shamana Yoga* group) systolic blood pressure was decreased 16.05% while diastolic blood pressure, come down with 18.21% relief. The result was highly significant statistically.

It may be inferred that both groups play an important role in reducing both systolic and diastolic blood pressure.

EFFECT OF THERAPIES ON BIOCHEMICAL PARAMETERS

The laboratory investigations were done in the present study on prognostic and therapeutic

consideration. So, apart from cardinal and associated sign and symptoms, the effect of therapies has also been assessed on certain biochemical parameters to find out an additive effect of therapies.

Effect on Haemoglobin:

Effect of therapy of Group A shown improvement in Haemoglobin percentage by giving 3.75% relief while in Group B insignificant was found with 4.07% relief.

Effect on E. S. R.:

Increased level of E.S.R. was reduced in Group A by 8.10% relief while in Group B the percentage of E.S.R. was slight elevated by giving –17.92% reliefs. The results were observed found insignificant in both the groups.

Effect on Blood Urea:

The blood urea result was seen decreased in Group A by giving improvement to 20.68% relief, while insignificant result was observed in Group B with –1.20% reliefs.

Effect on Serum Cholesterol:

Highly significant result was found in Group A by giving 31.41% relief, while insignificant result was found in Group B by giving 3.13% relief.

Effect on serum creatinine:

7.16% relief in Group A and 4.88% relief in Group B observed after therapies. Insignificant results were found in both the groups.

Effect on Blood Sugar (Fasting):

After completion of the treatment 2.18% relief was observed in Group A, while 2.20% relief in Group B. statistically results were insignificant.

Effect on Blood Sugar (P.P.):

9.95% relief was found in Group A while 0.99% relief was found in Group B. statistical results were insignificant in both the groups.

OVER ALL RESPONSE OF THERAPIES

52.94% patients of Group A (*Virechana* + *ShamanaChikitsa* group) showed excellent response after therapy, while 20% patients of Group B (*Shamanachikitsa* group) showed excellent response. Marked response was observed in 41.17% of patients Group A and 60.00% of patients of Group B. mild response was observed in 5.88% patients of Group A and 6.66% patients of Group B, while 13.33% patients of Group A and 06.66% patients of Group B showed no response.

COMPARISON OF THE RESULTS:

It has been observed from the above mentioned results that *Virechana* + *Shamanachikitsa* therapy has shown best effect in reducing the systolic and diastolic blood pressure, relieving cardinal and general symptoms of the patients of the Essential hypertension. *Virechana* + *Shamanachikitsa* therapy has also shown the best effect in reducing the level of S. cholesterol, B. Urea and E.S.R.

On the other hand the *Shamanachikitsa* group has also shown good result in relieving cardinal and general symptoms of the disease as well as in reducing the systolic and diastolic blood pressure.

DISCUSSION

In Ayurvedic classics, the disease essential hypertension is not described by its name. But from compilation of scattered references it has been concluded, that Essential hypertension is a *Vata-Pitta pradhana Tridoshaja Vyadhi* and the *Rasa Rakta* are the chief culprits. Further after understanding the essential hypertension on the basis of Ayurvedic fundamentals, the treatment has been selected in compliance with the principles propounded.

Among *Shodhana* karmas, *Virechana* was selected for present study due to its acceptability, less complications and popularity. While the *shamana yoga* was selected according to necessity by combining such herbs, which have *Tridoshahara* property and also must be acing-ton *Manodosha*, *Hridaya*, *Mastishk* and *Basti* as well as in *Annava* and *Purishavaha Srotas*.

According to *Acharya Charaka* if the aggravation of *Doshas* is very strong, then it is necessary to eliminate them.⁸ Vitiated *Doshas* by fasting and digestive treatment do at times get aggravated but those eliminated by elimination therapy do not recur.⁸ More ever by *San-shodhana* therapy the vitiated *doshas* are eliminated from the body through the alimentary, the power of digestion and metabolism is enhanced, diseases are cured, normal health is restored, the sense faculties, mind, intelligence and completion become clear, strength and virility increases, retraction of aging process takes place and prolongation of healthy life cycle takes place.⁹ *Rasayana dravyas* should be administered after proper *Sanshodhana*.¹⁰

For the treatment of Essential hypertension, according to nature of disease the *Virechana* is the therapy of choice to trump over the *Tridosha*, as *Virechana* has also been equally effective in *Rakta* vitiation.

CONCLUSION

On objecting the cardinal sign and symptomatology of the disease to *Ayurvedic* fundamentals, it is evident that there is predominance of *Vata pitta Dosha* and *Kapha* as its accompaniment with *Rasa Raktadusti*. *Dhamaniuplepa* is one of the main incidences in Essential hypertension and is stated in *KaphaNanatmajavyadhi*. Hence, the Essential hypertension can be assigned as *Tridoshajavyadhi* with predominance of *Vata* and *Pitta*.

In the present trial *Virechana karma* along with *Shamanachikitsa* offered better results in pacifying the entire range of symptomatology and mainly the cardinal signs in comparison to *Shamanachikitsa* alone.

In *Shamanachikitsa* group when *Shamana yoga* given alone, was also found to be effective in regression of cardinal signs as well as associated symptomatology, but it was judged to be less effective as compared to combined therapy.

As in this study direct relationship is found between ageing and occurrence of this disease. It is suggested that *Rasayana* drugs which have *Hridaya* and *Medhya* properties also should be used. Along with this, use of *AcharaRasayana*, which is a moral code of conduct, should be stressed.

During follow up, blood pressure tended to rise after one week of discontinuation of treatment. Thus it is proposed that the medicines should be administered for longer duration. Then their effects can be assessed.

From the results obtained in Group A and B, it can be concluded that moderate and severe ranges of essential hypertension can be normalized in a better way by *Virechana + Shamanachikitsa* therapy, while in mild Hypertension *Shamanachikitsa* is effective.

As the study was conducted over a small sample, a similar study performed over a large sample for a longer period would have procured much sharper and more accurate results.

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