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# Efficacy of *Virechana Karma* in the management of *Uccha Rakta Chapa* (Essential Hypertension) - A Clinical Study

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## ABSTRACT

The management of various systemic disorders and found to effectively detoxify the body by elimination of vitiated *Dosha*. Various clinical studies have shown that therapeutic modalities of *Shodhana* followed by *Shamana* have better clinical response than just *Shamana* (Palliative treatment plan). It has also changed the approach of the researchers towards palliative role of various form of modalities in the diseases which are considered to be newly emerging and do not find place in the classical treatises. Essential Hypertension is a form of Hypertension that by definition has no identifiable causes and is the most common type of Hypertension affecting 90% of Hypertensive patients and accounts to approx. 6% of deaths world-wide. The involvement of *Pitta* and *Kapha* is undisputed in the pathogenesis of Hypertension along with *Vikriti* of *Vyan Vayu* because it is *Vyanavayu* that facilitates *Rasa, Rakta Samvahana*. Keeping above view into consideration, it was thought desirable to consider *Virechana* as an appropriate. *Virechana* is considered to remove the *Margavarodha*, eliminates the morbid *Doshas* and regulate movement of *Vata* by its *Anulomana* action. Thus, it corrects the *Rasa-Rakta Samvahan* and helps to regulate the activity of heart and helps to reduce blood pressure.

**Key words:** *Uccha Raktachap, HTN, EHTN, Virechana Karma.*

## INTRODUCTION

The *Panchkarma* therapeutics are widely used in the management of various systemic disorders and found to effectively detoxify the body by elimination of vitiated *Dosha*. Various clinical studies have shown that therapeutic modalities of *Shodhana* followed by *Shamana* have better clinical response than just *Shamana* (Palliative treatment plan). It has also

changed the approach of the researchers towards palliative role of various form of modalities in the diseases which are considered to be newly emerging and do not find place in the classical treatises. In Ayurveda although there is no identical clinical entity available in classics however there are certain pathological condition which can be considered to manifest some of the features comparable to that of Hypertension. Like - *Pittavrita Vata, Pittavrita Udana, Pittavrita Vyana, Pranavrita Udana, Vyanavrita Prana* and *Siragata Vata*.<sup>[1]</sup>

Hypertension is one of such diseases that is not described in Ayurveda as such, the reasons implicated that it has no clear classical symptoms but is rather a machine diagnosed disease. Essential Hypertension is a form of Hypertension that by definition has no identifiable causes and is the most common type of Hypertension affecting 90% of Hypertensive patients and accounts to approx.6 % of deaths world wide.<sup>[2]</sup> Hypertension is the cause of 50% coronary heart diseases, stroke and heart failure. Overall incidence of

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Hypertension has been reported to be 32.5%.<sup>[3]</sup> The urban population is more likely to suffer from Hypertension (incidence rate 25%) than the rural (10%).<sup>[4]</sup> Increased urbanization and industrialization also significantly contribute to increasing incidences. Hypertension is defined as a sustained increase in systolic BP of 140 mmHg or more and / or diastolic BP of 90 mmHg or more by the usual criteria of average, Hypertension is considered as one of the leading non communicable diseases, as acknowledged by WHO.

Classification of blood pressure (Joint National Committee 7 guide lines)<sup>[5]</sup>

Category	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	<120	<80
Pre-hypertensive	120-139	80-89
Stage 1	140-159	90-99
Stage 2	≥ 160	≥ 100

Treatment plan advocates the use of Beta- Blockers, Ca++ channel blockers, CNS depressants, diuretics, ACE inhibitors etc. On the same line Ayurvedic drugs have also been used from time to time and have shown exhilarating response. Nomenclature of various diseases as mentioned in contemporary medicine has not been found by name as such in Ayurvedic classics. *Acharyas* however have emphasized on the importance of understanding the possible pathogenesis of a particular condition in terms of involved factors like *Dosha*, *Dushya*, *Prakriti*, *Adhistan*, *Samutthan* etc. for management purpose rather than naming them. (Ch.Su.18/44-46)

It is important to note that the involvement of *Pitta* and *Kapha* is undisputed in the pathogenesis of Hypertension along with *Vikriti* of *Vyan Vayu* because it is *Vyanavayu* that facilitates *Rasa*, *Rakta Samvahana*. Hence it is obvious that a treatment modality that can impart appropriate action on *Pitta* and *Kapha* as well as channelization of *Gati* of *Vayu* could prove to be effective in the management of Hypertension. Keeping above view into consideration, it was thought desirable

to consider *Virechana* as an appropriate. The present clinical study was planned to evaluate their respective role in the management of essential hypertension because the available modern treatment plans are empirical, have lifelong dependency and are full of hazardous side effects.

## AIM AND OBJECTIVES

The present clinical study was planned under following aims and objectives: To evaluate the efficacy of *Virechana Karma* along with *Arjuna* and *Gokshura Churna* in the management of essential Hypertension.

## MATERIALS AND METHODS

For this study 30 patients of Essential Hypertension fulfilling the criteria were selected from OPD and IPD of Pt. Khushilal Sharma Govt. Autonomous Ayurveda College and Institute, Bhopal (M.P.) 30 patients were subjected to *Virechana* therapy (Charaka Kalpsthana 7/23). & Oral medication – AG Powder containing *Arjuna* and *Gokshura* (in equal quantity) in the dose of 10 gm. twice a day for 15 days with luke warm water.

**Table 1: Treatment Regimen**

SN	Procedure	Preparation	Quantity	Duration
1.	<i>Deepana-Pachana</i>	<i>Trikatu Churna</i>	2-5 gm.	Till <i>Niram Dosha Lakshana</i> appear.
2.	<i>Snehana</i> a) <i>Abhyantar</i> b) <i>Snehapana</i>	<i>Murchhit Go Ghrita</i>	According to <i>Agni</i> and <i>Kostha</i>	Till <i>Samyaka Snigdha Lakshana</i> appear.
	c) <i>Bahya Abhyanga</i>	<i>Til Taila</i>		25-30 min.
3.	<i>Swedana</i>	<i>Niragni Sweda-Grupravrana.</i>		Till <i>Samyaka Swedana Lakshana</i> appear.
4.	<i>Pradhana Karma</i>	<i>Shyamatrivrut Sharkara.</i>	According to <i>Kostha</i>	

	<i>Shamana Chikitsa</i>	<i>Arjuna and Gokshura Churna</i>	10 gm. (Equal quantity in each powder)	15 days
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**Follow-up study:**

After completion of treatment all the patients were advised to report in the O.P.D. after 15 days, for follow up study, after 15 minute of rest the status of other symptoms and sign was also recorded.

**Preparation of Trivruta Avleha for Virechana**

*Trivruta* - 1part

*Sharkra* - 4part

Ghee - 2part.

Water - 4part

*Trivruta Avleha* was prepared as mentioned in classics (Sha.M.khanda 8/2). In *Quath of Trivruta* it is added to *Truvruta* powder and *Sharkra*, heated to semisolid consistency. When appropriate *Paka* was achieved, it was taken away from *Agni* and allowed to cool down. After that it is added with ghee. No any preservatives were used for preparation of *Avaleha*.

**Inclusion Criteria:**

1. Patients of essential Hypertension without taking any Hypertensive medication.
2. Patients with Systolic blood pressure <160 mmHg and  $\geq 140$  mmHg, Diastolic blood pressure <100 mmHg and  $\geq 90$  mmHg
3. Patients between the age group of 20 years to 50 years.
4. Patients fit for *Virechana* Karma.

**Exclusion Criteria:**

1. Patients below 20 years and above 50 years of age.
2. Patients with Systolic blood pressure  $\geq 160$  mmHg, < 140 mmHg, Diastolic blood pressure  $\geq 100$  mmHg and < 90 mmHg
3. Patients receiving Antihypertensive drugs.

4. Complicated Hypertensive case e.g., Congestive heart failure, Nephropathy.
5. Diabetic patients.
6. Secondary Hypertension.
7. Pregnant woman.
8. Patients taking oral contraceptive pills or steroids etc.

**Investigations**

All the patients registered under this study were subjected for following investigation. Fasting blood sugar and post prandial blood sugar/ random blood sugar, Lipid profile, and ECG.

**Assessment Criteria:****Subjective Criteria**

1. *Shirashoola* (Headache)
2. *Swedadhikyata* (Excessive sweating)
3. *Anidra* (Insomnia)
4. *Bhrama* (Giddiness)
5. *Klama* (Fatigue).

All above symptoms were graded by giving score in the basis of severity as below-

**Scoring Pattern****Table 2: The scoring of Shirshoola**

Parameters	Scores
Nil	0
Rarely headache relieves without medication.	1
Frequently headache relieves by rest doesn't disturb daily activities.	2
Frequently severe headache disturbs daily activities requires medicine.	3
Continuous / severe headache disturbs sleep and daily activities and also not manages by the medicine.	4

**Table 3: The scoring of Swedadhikyata**

Parameters	Scores
Able to do both routine special activities without discomfort.	0
Mild sweating by heavy work.	1
Sweating with moderate work relieves soon.	2
Severe sweating with mild work but no disturbance to the routine.	3
Severe sweating with mild work disturbs the routine.	4

**Table 4: The scoring of Anidra**

Parameters	Scores
Sound sleep	0
Disturbed sleep wake-up 1-2 times a night.	1
Difficult to onset sleep remains disturbed in night.	2
Very less Sleep-in small interval makes patient irritable	3
Not getting Sleep without medicine	4

**Table 5: The scoring of Bhrama**

Parameters	Scores
Nil	0
Rarely <i>Bhrama</i> for some moment during charge of posture.	1
Often for some moments during charge of posture.	2
Often for each moment even in lying condition.	3
Patients unable to hold himself without any support.	4

**Table 6: The scoring of Klama**

Parameters	Scores
Nil	0
Rarely feeling of tiredness without any exertion.	1
Rarely feeling of tiredness without any exertion with inability in concentration.	2

Frequently feeling of tiredness without any exertion with inability in concentration	3
Feeling of tiredness without any exertion with inability in concentration.	4

**Objective Criteria**

Assessment of change in both systolic and diastolic blood pressure level in supine position, was recorded.

**Table 7: The JNC (7 guide lines) and WHO criteria for Diagnosis of Hypertension was also adopted.**

Category of HTN	Systolic BP (mmhg)	Diastolic BP (mmhg)
Normal	<120	<80
Pre-Hypertension	120-139	80-89
Stage 1 Hypertension	140-159	90-99
Stage 2 Hypertension	≥160	≥100
Isolated systolic Hypertension	>140	<90

The symptoms and signs including the blood pressure were recorded at the interval of 7, 15, 22, 30 and 45<sup>th</sup> day.

**Table 8: To make cumulative assessment for final outcome the HTN was also graded as below.**

Diastolic blood pressure	Score
≤80	0
81-85	1
86-91	2
91-95	3
96-100	4

**OBSERVATIONS AND RESULTS**

The information gathered on the basis of observations were subjected to statistical analysis in terms of mean (x), standard deviation (S.D.) and standard error (S.E.). Wilcoxon test and Mann-whitney is a Non-parametric

test which were applied for paired and unpaired data respectively. The obtained results were interpreted as

- Not significant  $p > 0.05$
- Significant  $p < 0.01-0.05$
- Highly significant  $p < 0.001$
- Extremely significant  $p < 0.0001$

Total 30 patients were registered in Group A, 28 patients had completed the treatment and follow up and 2 patients discontinued before the completion of treatment course.

Duration of Snehapana	No. of patient	Percentage
3 Days	7	25
4 Days	5	17.85
5 Days	10	35.71
7 Days	6	21.42

In the present study maximum 35.71% of patients have developed *Samyaka Snehana Lakshana* on 5<sup>th</sup> day, 25% on 3<sup>rd</sup> day, 21.42% of patients on 7<sup>th</sup> day, and 17.85% on 4<sup>th</sup> day.

Graph 1: Distribution of 28 patients of Group A, according to *Samyaka Snehana*.

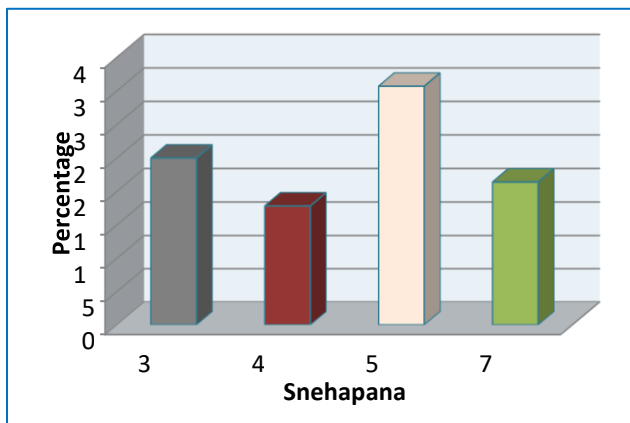


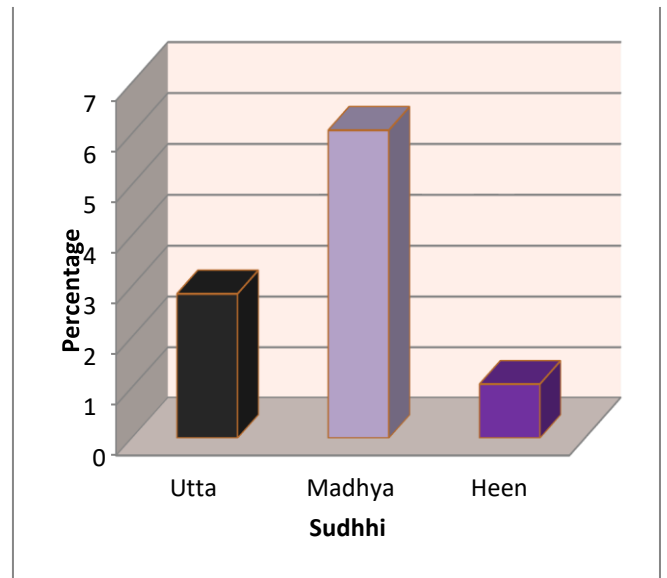
Table 9: *Vagiki Suddh* wise distribution of 28 patient of *Virechana* group

No. of Vega	No. of Patient	Percentage
Uttam	8	28.57

Madhyam	17	60.71
Heena	3	10.71

In the present study maximum no. of patients (60.71%) had seen *Madhyam Shudhi* followed by 28.57% patients *Uttam Shudhi* While 10.71% patients were *Heena Shudhi* in *Virechana*.

Graph 2: *Vagiki Suddh* wise distribution of 28 patient of *Virechana* group.



Effect of treatment on clinical profile

Table 10: Effects of therapies on Blood pressure on 28 patients of EHT.

B.P.	Mean		X	% Relief	S.D.	S.E	T	P
	B.T.	A.T.						
Group-A								
S.B.P.	145.79	126.50	19.28	13.22	7.22	1.36	14.12	<0.0001
D.B.P.	94.57	81.71	6.40	6.76	6.40	1.21	10.62	<0.0001

28 patients of *Uccharaktachapa* were treated in this group. The initial mean systolic blood pressure value of the 28 patients of this group before treatment was 145.79 mm of Hg, the decline to 126.50 mm of Hg after treatment with “t” value of 14.12 The statistical analysis shows extremely significant result at  $p < 0.0001$ .

Before treatment the mean D.B.P. of the 28 patients of this group was 94.57 mm of Hg and that after treatment was 81.71 mm of Hg. The “t” value was found to be 10.62 the statistical analysis shows extremely significant at  $p < 0.0001$ .

Result- In this 30 out of 28 patients after the completion of treatment only (7.14%) patients got Mark improvement, (25%) patients got Moderate improvement, (67.85%) patients got mild improvement. There was No complete remission of disease.

## DISCUSSION

Hypertension is called a silent killer because it rarely causes symptoms before it damages the heart, kidneys or brain.

The disease Essential Hypertension (EHT) is neither denoted in *Samhita* nor in any *Samgraha Granthas*, as it is stated that every disease cannot be given nomenclature.

*Acharya Charak* says that when *Kapha* is in aggravated position, *Pitta* in normal states and *Vata* is decreased in the body then symptoms appear like *Shirahshoola* (Headache), *Hrida Roga* (cardiac diseases), *Nidra* (sleepiness), *Tandra* (Drowsiness), *Gaurav* (Heaviness in the body), *Pralap* (Delirium), *Mandagni* (Diminished appetite) etc. (Ch.Su.17/51). These symptoms are many times reported by hypertensive patients. After going through the literature both modern and the Ayurveda, it is concluded that hypertension is a *Tridoshaja Vyadhi*.

### On clinical symptoms

Although there are no specific symptoms attributed to HTN, however *Shirahshoola*, *Swedadhikya*, *Anidra*, *Bhrama*, *Klama* are to be commonly observed. However, 30 patients of EHT, *Shirahshoola* was by far the most common manifestation in the patients registered in this series, as we have already discussed that role of *Pitta* and *Vata*, along with *Raktadhatu* is important, which leads to *Paittic* pattern of *Shirahshoola*.

The main symptoms like *Shirahshoola* (Headache) in 76.36%, *Swedadhikya* (Sweating) in 30.90%, *Anidra*

(Insomnia) in 58.18%, *Bhrama* (Giddiness) in 65.45%, *Klama* (Fatigue) in 41.81% were observed in patients.

### Effect of therapy on clinical sign (Virechana + Shamana Chikitsa group)

28 patients of *Uccharaktachapa* were treated in this group. The initial mean systolic blood pressure value of the 28 patients of this group before treatment was 145.79 mm of Hg, that declined to 126.50 mm of Hg after treatment with “t” value 14.12 showing extremely significant result at  $p < 0.0001$ . Before treatment the mean D.B.P. of the 28 patients of this group was 94.57 mm of Hg and that after treatment was 81.71 mm of Hg. The “t” value was found to be 10.62 which was statistically extremely significant at the level of  $p < 0.0001$  (Table No. 10)

### On effect of individual drugs on EHT

#### Arjuna

#### Rationale behind selection:

*Doshaghna* - *Arjuna* has *Kasaya Rasa*, *Ruksha Guna*, *Sita Virya* and *Katu Vipaka*. *Kaphanasak* by *Kashaya*, *Ruksha*, *Laghu* property and *Pittanasak* by *Sheeta* property, it is used in diseases induced by *Kapha* and *Pitta*. It's *Kashaya* & *Ruksha Guna* help to reduce swelling & *Meda* (due to *Kaphanashaka Guna*), and also reduce Fatigue & *Daha*.<sup>[6]</sup>

#### Gokshura

#### Rationale behind selection:

*Gokshura* is having *Madhura Rasa* and *Madhura Vipaka* in addition with *Rasayana* and *Balya Prabhav* seem to alleviate all signs & symptoms. Its *Mutravirechaiya Prabhav* and *Basti Shodhak Karma* causes elimination of *Kleda* from the body, by their it might have helped to reduce the raised blood pressure. It's *Madhura Rasa* and *Vipaka*, *Snigdha*, *Guru Guna* may reduce hyperactivity of *Vata* and thus probably reduced *Sankocha* and *Kathinya* of *Srotas*, Along with its diuretic properties the reduction in inflammation might have resulted.<sup>[7]</sup>

### Probable mode of action of Karma

#### Virechana

Charaka has indicated *Virechana* in *Raktapradosha* (Ch.Su.24), *Pitta* dominated *Vyadhis*, in

*Santarpanottha Vyadhis* (Ch.Su.23/8), in *Langhaniya Vyadhis* (Ch.Su.22/19) and in *Viruddha Ahara* induced *Vyadhis* (Ch.Su.26/105) and in the complex *Avarana* of *Kapha, Pitta, Rakta* and *Meda*.(Ch.Chi.26)

### Symptoms of Doshas pre-dominancy

- **Vata Dosh:** When *Vata* is predominant, then blood pressure will increase after worry, strain, overwork, anxiety or insomnia. It is often associated with nervous system disorders. Anxiety, worry, stress, and strain, are usually the main factors.
- **Pitta Dosh:** When the *Pitta* dominant, anger, Irritability, nose bleed, Violent headaches and Sensitivity to light contribute to high blood pressure.
- **Kapha Dosh:** When *Kapha* is dominant, there may be dull headache, edema, and lethargy with obesity and Blood pressure remains continually high.<sup>[8]</sup>

The *Virechana Karma* eliminate the morbid *Doshas*. *Pitta* effect on *Rakta Dhatu*, regulate activity and movement of *Vata* by its *Anulomana* action. Thus, it corrects the *Rasa-Rakta Samvahan* and helps to regulate the activity of heart and helps to reduce systolic and diastolic blood pressure. *Virechana* means inducing purgation helps to decrease fluid volume which may help to reduce cardiac overload and consequently reduces blood pressure. *Virechana* is also considered to remove the *Margavarodha* (obstruction), eliminates the morbid *Doshas* and regulate movement of *Vata* which is found to be in *Avarana* state. It is also implicit that the *Shodhana* effect of *Virechanakarma*, might have improved the functioning of Heart, and was found to be effective in *Bhrama, Klama, Shirashoola, Swedadhikyata* and *Anidra*.<sup>[9]</sup>

*Rasa-Rakta Dushya* are main culprits and *Raja-Tama* are also involved. Various etiological factors produce *Dosha Dushti, Srotodusti, Khavaigunya* and *Agnimandhya* which all leads to EHT. For EHT *Virechana Karma* was selected. As such *Samprapti Vighnan* is said to be treatment. *Aamashaya* and

*Pakwashaya* is *Udbhava Sthana* of EHT. *Virechana Karma* helps to eradication of *Dosha* from not only *Aamashaya* and *Pakwashaya* but also from whole body. *Virechana* also potentiates and reduces *Agnimandhya*. *Virechana Dravyas* by its *Ushna, Tikshna* properties spread in whole body and lead to remove *Srotosanga* and *Srotoupalepa*. *Virechana* is believed to expel the excessive *Dravatva* from whole body. It also establishes the functional integrity between these three subtypes of *Dosha* through its process, which ultimately help to pacify *Tridosha*. It is also capable of mitigating of *Vata Dosh* besides *Pitta*<sup>[10,11]</sup> eliminates *Kapha Dosh* either associated with *Pitta Dosh* or situated in *Pitta Sthana*. *Virechana Karma* has been also advised in all *Dhatu-Dushti Janya Vikara* viz. *Rasaja, Raktaja Vikara*.<sup>[12]</sup> Aacharya Sushruta and Vagbhata state that, it helps to improve intellectual and mental status. It is also provides strength to the body by increasing strength of *Indriyas* and stabilizing seven *Dhatus*,<sup>[13]</sup> thus *Virechana* stands as prime therapeutic *Shodhana* to help in normalizing the Blood pressure.

**Hypothesis:** *Virechana* process can be remove excess of sodium ions and potassium through G.I.T. Watery stool cause depletion of bicarbonate, thus *Virechana* can eliminate bicarbonate. It can maintain Acid-Base balance too. By the process of *Virechana*, we may say that *Virechana* may give positive effects on Angiotensin-II enzyme, which helps to reduce retention of salt and water, and which decrease extracellular fluid from the body, and thereby decreased blood pressure.

### CONCLUSION

The provoked *Kapha* normal *Pitta* and decreased *Vata* (Ch. Su.17) are the probable factors embraced in the *Samprapti* of EHT. Provoked *Kapha* may causes the structural abnormalities in *Dhamanias* (*Dhamanipratichaya* and *Dhamani Sankocha*) which leads to the increased peripheral resistance and thus the hypertension. After going through the literature (both modern and the Ayurveda) It can be concluded that hypertension is a *Tridoshaja Vyadhi*. *Virechana* is considered to remove the *Margavarodha*, eliminates



the morbid *Doshas* and regulate movement of *Vata* by its *Anulomana* action. Thus, it corrects the *Rasa-Rakta Samvahan* and helps to regulate the activity of heart and helps to reduce blood pressure.

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