

**PHARMACO-THERAPEUTIC EVALUATION OF PIPPALYADI YOG (kalpit yog) IN THE MANAGEMENT OF UCCH-RAKTCHAPA W.S.R. HYPERTENSION****Kusum Gehlot¹, Anjana Dhakar², Rajendra Prasad Purvia³**

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Article Received: 14/11/2022 - **Peer Reviewed:** 05/12/2022 - **Accepted for Publication:** 06/01/2023.**ABSTRACT**

Hypertension is one of the chronic disorders affecting humans and responsible for worldwide major morbidity because most of the patients are symptomless until a later stage of the disease leading to late diagnosis of the disease. WHO/ISH defines hypertension as SBP>140 mm of hg and DBP> 95-105 mm of hg. Increased in both systolic and diastolic BP may be detrimental to health making a greater risk for heart attacks, strokes, and failure. The primary goal of treatment is to achieve the maximum reduction in the long-term total risk of cardiovascular morbidity and mortality. Hypertension is a major medical ailment because people suffering from essential hypertension have a higher risk for cardiovascular and medical complications than normotensive people. Regular blood pressure checks, early diagnosis, and prompt treatment at an earlier stage are very helpful in reducing complications and disease burden. Early identification of etiological factors is prime important for the prevention of hypertension. Since the development of medical science, much research work has been done on this disease in order to understand the disease pathophysiology and to find out better treatment but still, there is a place for research for the discovery of better treatment. So, by research project it is need of time to understand and

find out better treatment and therapy by "Pharmaco-therapeutic evaluation of Pippalyadi yog (Kalpit Yog) In the Management of Ucch-Raktachap w.s.r. to Hypertension." *The study was conducted on 40 clinically diagnosed patients of Uccharaktachapa. They are randomly allocated into two groups after screening. Group-A (Pippalyadi Yog) is a trial group medicine & Group-B (sarpagandhadi Ghan Vati) is a control group medicine. Observation & results were assessed on the basis of differences in the score of signs and symptoms. All the details regarding the study are further detailed.*

Keywords: Uccharakta chap, Hypertension, Pippalyadi Yog, Sarpagandhadi Ghan Vati.

INTRODUCTION

Hypertension, also called high blood pressure, condition that arises when the blood pressure is abnormally high. Hypertension occurs when the body's smaller blood vessels (the arterioles) narrow, causing the blood to exert excessive pressure against the vessel walls and forcing the heart to work harder to maintain the pressure. Although the heart and blood vessels can tolerate increased blood pressure for months and even years, eventually the heart may enlarge (a condition called hypertrophy) and be weakened to the point of failure. Injury to blood vessels in the kidneys, brain, and eyes also may occur. Hypertension is a dangerous disease that affects a large portion of the world's population. The prevalence of hypertension was reported to vary around the world, with the lowest frequency in rural India. Day by day increasing stress and anxiety due to various socioeconomic factors are responsible for various chronic disorders in humans. This is adversely affecting the normal homeostasis of the body. This is leading to increased incidence of various psychosomatic diseases; cardiovascular disease might have existed from the time life id existing within the universe. The description of HTN (hypertension) isn't directly out there in the classical texts of the author. Though with less severity as a result of maladies like pakshaghata(paralysis), mutraghata (UTI), and hridaya roga (cardiac disease) are alright explained in our texts, they are common complications of cardiovascular sickness. cardiovascular disease may need to have existed in less severe types within history thanks to the actual fact that folks in those times were living in agricultural civilizations wherever they had enough time to follow daily routines like

ideal dincharya (healthy daily routine), ritucharya (healthy seasonal routine), sadvritta (discipline & adequate), etc and additionally had a chance to exercise frequently and follow healthy food habits. they board a serene atmosphere with the tranquillity of the mind. yogistic practises were additionally in all probability a lot common. While there are no identifiable symptoms in the early stages of hypertension, it cannot be considered a health problem on a piece of paper. It's thought to be an early stage of the biological process and a risk factor for the development of illnesses affecting the stomach, brain, kidneys, and eyes, among other organs. Improper eating habits, as well as the popular fast-paced manner, aroused and vitiated all of the Tridoshas(vata, pitta,kapha), triggering the biological process of high stress. The present study is a trial to know the aetiopathogenesis of cardiovascular unhealthiness on ayurvedic principles and to standardize an ayurvedic line of treatment which can prove effective within the management of hypertension. The present research work is aimed to perform the evaluation of the efficacy of "Pharmaco-therapeutic evaluation of Pippalyadi yog (Kalpit Yog) In the Management of Ucch-Raktachap (Hypertension)" and to draw a hypothesis regarding the mode of action of the drugs used in the present research work on the scientific basis. **nAims and objectives:** Clinical study to know the efficacy of Pippalyadi yog and sarpagandhadi ghan vati in Uccha- rakatchap.

Material and method: Selection of the drug: According to the nature of the disease it is essential to combine such herbs, which have Tridoshahar property rasayana properties (rejuvenate properties) and

also must have “MEDOHARA and HRIDYA” properties (statins & cardiac tonic). In the present study, a shaman remedy has been selected taking in view the aspect of the preventive, curative, and also dosapratyanic effect (opposite to the disease nature) of shaman yoga drugs. In essence the present study empowered “Pharmaco-therapeutic evaluation of Pippalyadi yog (kalpit yog) in the management of Uccharaktachapa w.s.r. to hypertension”

PIPPALYADI YOG is a hypothetical mixture which includes three ayurvedic herbal drugs- **pippali, arjuna, guduchi.**”

Preparation of medicine: After proper identification by morphologically and microscopically Contents of Trail drug formulation (concentrated aqueous extract) were taken in the above-explained ratio and coarse kwath was made of guduchi and arjuna then soaked with water overnight. Next day prepare the decoction by applying moderate heat. Out of 10 kg of trial drug taken for decoction preparation Then 16 parts of water were added and boiled till 8 parts of water remained (i.e. Kwatha). Then after filtering it, the filtered decoction was again boiled for Rasakriya until it became Ghana. Then dry Ghana powder was mixed with pippali powder and mixed well with all three drugs. Then filled in capsules (each of 500mg).

The following materials and methods were adopted for the present research study-

Selection of Patients

40 Uccharaktachapa patients of Group A & B would be selected from the OPD of Dr. S.R. Rajasthan Ayurved, University and hospital Jodhpur randomly, for study a special Performa would be prepared to incorporate all the signs and symptoms of hypertension based on both Ayurvedic and Modern clinical literature and accordingly the detailed history, a physical examination would be performed and investigations would be done with pathological laboratory confirmation on all patients.

Inclusion criteria:

1. Patients belonging between the age group 25 to 75yrs.

2. Patients who were diagnosed with raised blood pressure have been selected.

3. patient is willing to sign the consent form.

4. Isolated grade-1 Systolic or Diastolic hypertension.

Exclusion criteria:

i. Open and randomized clinical age less than 25 yrs. and more than 75 yrs.

ii. Patients having a history of untreated thyroid disorder and drug addiction.

iii. Pregnant women and lactating mothers.

iv. Drugs like Oral Contraceptive Pills, and steroids.

v. Ventricular hypertrophy, coarctation of the aorta.

vi. Portal hypertension.

vii. Renal artery stenosis-induced hypertension,

Study design: -

• **DRUG and DOSE: - group (A): - PIPPALYADI YOG 1gm, TDS with Luke warm water before a meal.**

group (B): - SARPAGANGHADI GHAN VATI 1gm, TDS with Luke warm water before a meal.

• **Duration: - 60 days**

• **Type of study: - open**

• **Randomization: - simple random sampling**

Clinical study

• Written informed consent would be obtained from every patient.

• Case history would be taken and a special case record form would be prepared.

• Clinical findings would be recorded as per case Performa.

• Group-A-20 patients have been received from RAU, hospital OPD “Pippalyadi yog capsule” 1 gm.

TDS per day before a meal with Luke's warm water for 60 days.

• Group-B-20 patients have been received from RAU, hospital “sarpagandhadi ghan vati” 1 gm. TDS per day before a meal with Luke's warm water for 60 days.

Criteria for Assessment: -

Subjective parameters: -

1. Shirshool (Headache)
2. Bhrama (Giddiness)
3. Klama (Easy Fatigability):
4. Hritspandan (Palpitation);
5. Anidra (Insomnia):
6. Swedadhikya (excessive sweating)

Objective parameters: -

1. Assessment of change in Blood Pressure.
2. Complete Blood count.
3. Lipid profile (Total lipids, Serum Triglyceride, Serum Cholesterol)
4. Fasting blood sugar.

Content of trial drug:

S. No.	Plant	Latin Name	Family	Part Used	Ratio
1.	Pippali	Piper longum	Piperaceae	Powder	1 Part
2.	Guduchi	Tinospora cardifolia	Menispermaceae	Ghan Satva	1 Part
3.	Arjun	Terminalia arjuna	Combretaceae	Ghan Satva	1 Part

Ethical approval & registration:

Ethical clearance was taken from the Institutional ethical committee before the commence of the trail "Trial REF/2020/12/039385" has been registered. The registration number for this trial is CTRI/2021/01/030220.

Observation:

The observation and results have been made in two groups of the present study the following headings – **General profile:** - In the present study, 43 patients were registered; patients dropped out of the trial and 40 patients completed the trial.

Age: -The incidence of hypertension in different age groups is worked out, the highest incidence of hypertension was 12 (30%) which was seen in the age group of 36-45 years. 10 patients (25%) from the 25-35 years of age group and 56-65 years of age group. 6 patients (15%) from the 46-55 years of age group. 2 patients (5%) from 66-75 years of age groups. This shows that the incidence of hypertension occurs more in middle age.

Sex: -This table shows that a maximum of 30 patients (75%) were reported to be males and 10 patients (25%) were females among the 40 patients with hypertension. This suggests that the incidence of hypertension is more common in males than females.

Religion: -It was observed that the incidence of hypertension was more in patients of hindu reliogon38 patients (95%) whereas 2 patients (5%) belonged to the Muslim community.

Marital status: -In the present study maximum of 33 patients (82.5%) were married and (17.5%) patients were unmarried.

Habitat: -It is clear that the incidence of hypertension was highest in the patients who belonged to urban areas i.e. 24 cases, while the lowest was 16 patients in the rural area.

Occupation: -Above table shows that in the present study incidence of hypertension of found maximum in businesses (42%).

Socio-economic: -The majority of cases registered for the current trial belonged to the middle class which includes 19 patients (47%), 7 patients (17.5%) from the lower class, and 35% from the upper class.

Socio-educational status: -In the present study maximum of 87.5% of patients were educated.

Addiction: -In the present study almost all the patients had a habit of taking tea 40(100%) patients while 9(22.5%) patients had a habit of smoking.

Agni: -The observation in the above table indicates that 25% of cases had vishmagni 27.5 % of cases had tikshnagni,47.5% of cases had mandagni and no one patient with samagni was found.

Diet: -In the present study,75% of patients were vegetarian while 25% of patients were having mixed diets.

Dietary habit: - Maximum of 52.5% of a patient had the habit of adhyashana and 17.5% of patients were having vishmashana and virudhbhojan. samashana habit was found in 12.5% of patients.

Kostha: -In this research work 50% of cases had kroora kostha, and 27.5% of cases had madhyam

kostha. While mridu kostha was found in 22.5% of cases.

Sharirika prakriti: - All the patients registered in the clinical trial belonged to only the dwandaja type of prakriti. Out of which maximum number of cases 57.5% were of Vatapitta prakriti., 15% cases were of pitta kapha prakriti and 27.5% cases were vata kapha prakriti. It can be concluded from the above table that vata pitta prakriti people are maximum.

Mansika prakriti: - All the patients registered in present trial maximum number of 62.5% were of Rajasika prakriti ,37.5% cases were of tamasika prakriti and no one patients have satvika prakriti.

Sara: - In the current series of patients,50% of patients were madhyama sara and 50%patients were avara sara and no one has pravara sara.

Ahara jaran shakti: - The observation revealed that 67.5% of cases had madhyama ahara shakti, 20% of patients had avara ahara shakti, and 12.5% of patients had pravara ahara shakti.

Intra-group comparison-

Table showing the effect of therapy on subjective parameters:

variables	Groups	Mean v.		Mean Differ.	% Relief	SD±	SE±	P	Significance
		BT	AT						
Shirshool	A	2.000	1.100	0.9000	45.00	0.7182	0.1606	<0.0001	HS
	B	2.050	1.250	0.8000	39.02	0.6156	0.1376	<0.0001	HS
Bhrama	A	1.950	1.300	0.6500	33.33	0.4894	0.1094	0.0001	HS
	B	1.950	1.250	0.7000	35.89	0.4702	0.1051	<0.0001	HS
Klama	A	1.950	1.050	0.9000	46.15	0.7881	0.1762	0.0001	HS
	B	2.000	1.150	0.8500	42.50	0.6708	0.1500	0.0001	HS
Hritspandan	A	1.450	0.700	0.7500	51.72	0.6387	0.1428	0.0002	HS
	B	1.550	0.750	0.8000	51.61	0.6156	0.1376	<0.0001	HS
Anidra	A	0.9000	0.300	0.6000	66.66	0.8208	0.1835	0.0034	HS
	B	0.6000	0.250	0.3500	58.33	0.7452	0.1666	0.0420	S
Swedadhikya	A	0.8500	0.250	0.6000	70.58	0.5026	0.1124	0.0002	HS
	B	0.7500	0.450	0.3000	40.00	0.6569	0.1469	0.0527	NS

Vyayama shakti: - Shows a maximum of 47.5% of patients had madhyam vyayama shakti followed by 30% of patients had avara vyayam shakti and 22.5% of patients had pravara vyayam shakti.

Family history: -In the present research work 45 % of cases have a family history of hypertension, which shows that genetic influence is an important factor.

Results: All the results are calculated by using software: instat graph pad 3.

Intra-group comparison-

The Wilcoxon matched-pairs signed ranks test was used for nonparametric data, whereas the paired 'T'-test was utilised for parametric data, and the results were calculated.

Inter group comparison-

The Mann- Whitney test was employed for nonmetric variables. The findings of the parametric data were determined using an unpaired 't'-test.

The results were calculated.

Not significant :P>0.05

Significant :P<0.05

Very significant :P<0.01

Extremely significant :P<0.001

abbreviation - BT: Before treatment, AT: After treatment, Diff.: Difference, S.D.: Standard Deviation, S.E.: Standard Error, P: P value, V.S.: Very Significant, S: Significant, E.S.: Extremely Significant)

Table: Showing the % Relief in Both the Groups in Subjective parameter:

Subjective parameter	% Relief in group A	% Relief in group B
Shirshool	45.00	39.02
Bhrama	33.33	35.89
Klama	46.15	42.50
Hritspandan	51.72	51.61
Anidra	66.66	58.33
Swedadhikya	70.58	40.00

•In Group-A patients shows up

maximum relief percentage respectively in **swedadhikya** (70.58%) & **anidra** (66.66%).

•In Group-B patients show up maximum relief percentage respectively in **anidra** (58.33%) and **Hritspandan**(51.61%).

DISCUSSION

After undertaking the clinical trial and registering the observations thereof, a thorough discussion is required to explore if any rational pattern was observed during this study and to draw any suggestive conclusion. Discussion on all parameters of research work is very necessary.

Though many Ayurvedic medicines are used for the management of Hypertension, a holistic broad-spectrum formulation containing ingredients that can address all possible pathways of Hypertension is not available in the market.

Various terms have been suggested for essential hypertension. Raktagata Vata, Raktavritta Vata, Vyan avrittaprana, Uccha-Raktachapa etc. Aacharya Charak has quoted that the physician should not worry about the naming of particular disorders if he does not know the name, He should start treatment after assessing the pathogenesis, location, and etiological factors of the disorders.

Uccharaktachapa, the main pathogenesis occurs due to vitiation of -

Dosha

- Vata (Prana, Apana, Vyana)
- Pitta (Sadhaka)
- Kapha (Avalambaka)

Dushya

- Dhatu-Rasa, Rakta & Meda
- Upadhatu-Sira, Dhamani

Srotasa

- Rasavaha, Raktavaha, Pranavaha & Manavaha Strotas

Hridaya & Oja

Hridaya and Oja are mandatory for the proper circulation of blood. The seat of Para Oja is Hridaya.

Vitiation of the above factors occurs due to -

- Agnimandya- Jatharagni & Dhatvagni
- Doshadushtias such or Avaranajanya

After focussing on Dosha, Dushya, Adhithana, and Lakshana it is easy to give a statement that it is a Vata vyadhi particularly Avritta Vata vyadhi be-

cause like Vata vyadhi, hypertension is initially asymptomatic (Avyakta lakshana) and later on manifests rapidly (Apya and laghuta).

The disease hypertension should be considered in Ayurvedic fundamentals from its symptomatology and involvement of dosha, dushya, strotasa, etc. The hypertension is a Tridoshaja vyadhi in which Rasavaha, Raktavaha, and Manovaha strotasa are involved.

discussion regarding the probable mode of action of the trial drugs: -

Ingradients of the drugs included in the present research work may have different pharmacodynamic and pharmacokinetic properties and multiple mechanisms of action at different sites.

For hypertension, multiple etiological pathways are described for its pathogenesis. Drugs in the present research study may be acted at the different levels of these multiple etiological pathways; that is why these are producing remarkable results due to the disruption of the pathogenesis of essential hypertension at a different level. Drugs working at multiple sites and having multiple modes of action usually have good results by blocking the disease process at multiple levels.

The ingredients of the study drug "Pippalyadi yog capsule" have appears to be: -

Improper diet and lifestyle cause vitiation of vata and kapha. Vata gets obstructed by kapha in the head region causing headaches. As the pain intensifies vata also vitiates pitta which impairs digestion leading to the production of digestive impurities known as ama. This ama gets stored in manovahi srotas (mind channels), thereby becoming the cause for headaches the trial drugs relieve the symptom Shirashula which is a common symptom in hypertension

For this research work patients were diagnosed according to WHO hypertension criteria symptoms described in Ayurvedic classic texts. A minimum of 40 & more patients were randomly selected from the hospital's outdoor patient department & indoor patient department, the University college of Ayurveda, Jodhpur.

group-a: It included 20 well-diagnosed patients of Hypertension who were administered Pippalyadi yog capsule 1 gm./tds with lukewarm water for 60 days.

group-b: It included 20 well-diagnosed patients of Hypertension who were administered Sarpagandhadi ghan vati 1gm./tds with lukewarm water for 60 days.

Comparison:

An apparent difference of improvement in all the cardinal symptoms was recorded, from the above discussion, it can be said that the treatment schedule of group A proved to be better than the test drug of group B.

The above-described discussion clarifies that the therapies given to group A and group B decreased the Blood pressure in all groups but it was decreased in Group A compared to Group B. The order of decrease in Blood pressure was found as group **A>B**.

CONCLUSION

The trial drug showed a highly significant reduction in Blood pressure in both groups when given at a dose of 2 capsules (1 gm) twice a day after a meal for 60 days.

Since both Extracts showed more effective results than Ghanvati, it can be concluded that drug A (extract) can be used for patients of hypertension to offer an-cost effective drug in comparison to Modern extract.

The study showed that 58.3 % of patients sustained the effect of becoming normotensive up to 30 days after withdrawal of the drug whereas a rise in BP was observed in the rest 41.67% of patients. Thus the study suggests that the medication can be attempted to be withdrawn after 2 months of treatment but with close monitoring and follow-up.

The trial drug was well tolerated by all the patients and no toxic or unwanted effects were observed in any patient.

Hence as per the statistical finding of the study Null hypothesis (HO) is rejected and the Alternate hypothesis (H1) is accepted.

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