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Clinical study in the management of essential hypertension with Brahmi Vati and yoga modalities

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Abstract

Hypertension is the most prevalent cause for cerebro vascular and cardiovascular disorders, causing high rate of mortality and morbidity. So, hypertension is gaining more and more attention globally. Despite of so many researches have been carried out in modern as well as Ayurveda field, Essential Hypertension is yet troublesome and problematic disease for patient and physician also. The regimen of modern side is effective to Essential Hypertension, but it is also responsible for having troublesome side effects. As both the physiological and psychological factors are responsible for hypertension and no specific single disease in Ayurveda can be correlated to hypertension, Yoga has been proved to cure physiological as well as psychological pathology. Many researches in relation with Yoga modalities have been proved to be effective in respiratory, skeletal and cardiovascular system especially hypertension. So Yoga modalities in combination with proved antihypertensive herbal preparation '*Brahmi Vati*' was chosen for clinical study in 15 patients in the management of Essential Hypertension. The study was carried in 15 patients in VYDSAM, Khurja, Bulandshahr (U.P.) and it was found that *Brahmi Vati* with Yoga modalities plays a highly significant role in the management of Essential Hypertension.

Keywords: Ayurveda, Essential Hypertension, Brahmi Vati, Yoga, Naturopathy, Swasthvritta

Introduction

The 21th century is described as the age of anxiety and stress. The modern man is constantly facing symbolic stress. This stress and strain of day to day life affects one's bodily organs through several psycho-physical mechanisms. The progress of medical science has helped us to conquer disease like plague, smallpox etc., but stress related diseases are rapidly increasing. Among the several psychosomatic diseases, the cardiovascular disorder like Hypertension is quite significant. The term Essential Hypertension (EHT) is reserved for about 95% of hypertensive patients, in which no immediately evident underlying renal or adrenal cause can be found for the raised Blood Pressure. It can be only detected on routine medical check-up or when patient goes to hospital with its dangerous complications like stroke, angina, myocardial infarction etc. In medical parlance, this psychosomatic hemo-dynamic disease is known as the 'Silent' or 'Hidden Killer' because of its end organ (*Tri mahamarmas*) damages, having disastrous and menacing effects on human beings which ultimately leads to death of a person. Even Indian Council of Medical Research (ICMR) All India Institute of Medical Science (AIIMS) study declared India a nation of hypertension. The prevalence of hypertension in India 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^[1]. About 33% urban and 25% rural Indians are hypertensive. Of these, 25% rural and 42% urban Indians are aware of their hypertensive status. Only 25% rural and 38% urban Indians are being treated for Hypertension^[2]. One-tenth of rural and one fifth of urban Indian hypertensive population have their BP under control. 40-45 million Indians are believed to be suffering from the disease that is a key risk factor for coronary artery disease, diabetes and renal failure. According to data from National Health Profile (NHP) 2018^[3], more people were diagnosed with hypertension than diabetes in India in 2017. This is due to the remarkable change in their life style and dietary habits. Another important factor in today's generation is facing more stress, anxiety and tension as compare to previous generations.

Yoga is emerging as an important modifying factor for health and behaviour to achieve better physical and mental well-being. Yoga in particular can help to promote cardiopulmonary fitness. Practice of yoga is expected to work at physical and mental levels. The practice of *asanas* improves the muscle strength, mind-body co-ordination and balance [4]. Further it improves the blood flow, tissue perfusion and oxygenation, enhancing functions at cellular level. Meditation and breathing technique calms down the mind, improves the concentration enhancing better work output. By maintaining tranquillity of mind it can promote clear thinking, better judgment and effective decision making [5]. It also alters the autonomic balance to promote health. Regulated breathing practice makes the respiration more co-ordinated, facilitating a better ventilation and perfusion [6]. It is reported that regular practice of *pranayama* improves hypersensitive responses of the respiratory passage by working at local and mental levels. In this study, a humble effort was made to derive a standard and easily accessible management for essential hypertension with Yoga modalities and *Brahmi Vati* following Ayurveda principles. In Yoga, various types of *asanas* have been mentioned. As there is no specific reference for name of Yoga *asanas* which should be practiced by a hypertensive patient, so yoga *asanas* mentioned according to MDNIY, New Delhi [7] i.e. *Tadasana*, *Katicchakrasana*, *Hastotanasana*, *Vajraasana*, *Ustraasana*, *Gomukhasana*, *Shashankasana*, *Vakraasana*, *Bhujangasana*, *Makrasana*, *Shavasana*, *Pranayama*, *Bhramari*, *Nadishodhan* were taken into consideration. Therefore a study was planned with pharmacological and non-pharmacological interventions to see their combined effect in the management of Essential Hypertension. Drug chosen for the study was *Brahmi Vati*, which is economic by virtue of less number of easily available ingredients and a time tested classical formulation [8]. The present study was undertaken in camps and OPD on 15 patients randomly. The parameters considered for the evaluation of the patients and assessment of progress, objective i.e. systolic blood pressure and diastolic blood pressure, without making any claim in this subject to succeed, this is only a humble beginning. For better evaluation of efficacy of Yoga and drug there is a need to conduct the study on large sample and for longer duration.

Aims and Objectives of the study:

- To study Essential Hypertension in detail according to Ayurveda classical texts and modern science.
- To assess the efficacy of *Brahmi Vati* and Yoga modalities in the management of Essential Hypertension.

Materials and Methods

Source of data

A. Patient

Patients suffering from Essential Hypertension were selected from the OPD and camps organised, irrespective of the age, caste, sex, economic status, marital status, occupation and religion. The cases were recorded with the help of a special proforma prepared for this purpose.

B. Literary

Literary aspects of study were collected from classical Ayurveda, Yoga and Modern texts.

C). Plan Of study

15 patients of Essential Hypertension were randomly selected

and advised as follows:

Brahmi Vati (12 *ratti* in 2 divided doses) and Yoga exercises were advised for 45 minutes for the duration of 30 days.

- **Source of Drug:** *Brahmi Vati* as a classical preparation was brought from an authentic, GMP & ISO 9001:2008 certified nationalized company SDL, Mumbai.
- **Yoga exercises** for hypertension were advised according to MDNIY, New Delhi 24
- **Anupan:** Milk
- **Duration:** 30 days

D. Sample size: A minimum of 15 patients

E. Exclusion criteria

- Patients below 30 yrs and above 70 yrs
- Patients suffering from any major systemic disorder.
- Patients who are not able to do yoga exercises or not cooperative.

F. Inclusion Criteria

- Pre diagnosed cases of essential hypertension.
- Patients between the age group of 30 to 70 years.
- Patients with Stage 1 hypertension according to JNC (7) were selected.
- Patients of both sexes were selected indiscriminately.

G. Criteria of Diagnosis

- The symptom of essential hypertension explained in modern text was the basic diagnostic criteria.
- Only Stage 1 Hypertensive patients according to JNC (7) on Prevention Detection
- Evaluation and Treatment of High Blood Pressure (U.S. Department of Health and
- Human Services) were taken for study.
- Diagnosis was made on the basis of measurements of sphygmomanometer.

H. Criteria for Assessment

Objective Parameters

- On the basis of cardinal sign i.e. persistent elevated blood pressure.

By noting the alterations in the systolic and diastolic blood pressure, before and after treatment.

Scoring

Present Before Treatment	2
Improvement after Treatment	1
Absent After Treatment	0
No Change after Treatment	2

3. 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	51-75%
Moderate Improvement	25-50%
Mild Improvement	< 25%

Diet: Patients of all the groups were advised to take salt restricted dietary regimen.

Statistical Analysis

The information gathered on the basis of observation were subjected to statistical analysis in terms of standard deviation (S.D.), standard error (S.E.), paired 't' test, was carried out at $P<0.05$, $P<0.01$ and $P<0.001$. The obtained results were interpreted as:-

- ✓ Significant $P<0.05$
- ✓ Highly Significant $P<0.01$
- ✓ Very Highly Significant $P<0.001$

Follow Up Study

Patients after completion of the treatment were advised to report in the O.P.D. after 15 days for the follow up study. Their blood pressure after 15 minutes rest was recorded. The condition of other signs and symptoms were also being noted.

Estimation of Overall Response

Table 1

Assessment	Objective Parameters			
	Systolic BP		Diastolic BP	
	No. of patients	%	No. of patients	%
Excellent responses (>75%)	00	00	02	13.3
Marked response (51-75%)	00	00	03	20
Moderate response (25-50%)	15	100	08	53.3
Very mild response (<25%)	00	00	02	13.3

Results

It is observed from the above mentioned result that *Bhrami Vati + Yoga 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.

Discussion on Probable action of Yoga Exercises

Physical exercise in general and yoga in particular is reported to reduce the occurrence of cardiopulmonary diseases and possible complications arising out of them. Yoga is reported to promote physical and mental health by performance of postures (*asanas*), regulated breathing (*Pranayama*) and meditation (*dhyana*). Yoga begins to work on the outermost aspect of the personality, the physical body, which for most people is a practical and familiar starting point. When imbalance is experienced at this level, the organs, muscle and nerves no longer function in harmony, rather they act in opposition to each other. Yoga is directed at bringing different bodily functions into perfect coordination and maintaining it to achieve good health. Yoga acts at mental and emotional level aiding to achieve integration, harmony between thought, feeling and deeds. It helps in developing awareness of interrelationship between emotional, mental, physical levels and how a disturbance in one can affect the others. Yoga may not provide a cure for illness but it is a proven method in coping with it. In present scenario, it's important to establish an authentic scientific basis for the claims of yoga, as it can be complementary to the present discipline of preventive and therapeutic medicine. We are deficient in tools which can effectively quantify the changes brought about by each of the eight aspects of yoga, and also scarcity of yoga practitioners who have mastered all aspects of yoga.

Benefits of Yogasanas used for present study are as follows [9, 10]

Benefits of Tadasana

- It gives vertical stretch to whole body muscles.
- It strengthens thighs, knees and ankles.
- It helps improve height of the children.
- This posture plays an important role in increasing one's self-awareness.
- It helps to remove laziness and lethargy.

Benefits of Makrasana

- It helps you to breathe slowly, efficiently and deeply.
- It keeps you alert.
- It releases all the tight knots in the body and makes it flexible.
- This asana turns your mind inward, calming it and preventing anxiety.
- It treats hypertension, heart disease and mental disorders.
- It relaxes your body completely and keeps you rejuvenated.

Benefits of Shavasana

- It removes stress and tension.
- It is useful to reduce high blood pressure.
- It relaxes the body and mind.
- It removes fatigue from the body.
- It is beneficial in the case of insomnia as it helps to induce sleep.

Benefits of Bhramri

- The sound resonating in the brain is very soothing and removes tension and anxiety.
- It is very useful to reduce high blood pressure.
- It energises the mind and refuels it with new energy.
- It pacifies the mind and helps reduce anger, anxiety and insomnia.
- It helps in enhancing the concentration.
- It improves memory.
- It alleviates throat ailments.

Benefits of Anuloma viloma

- It cures all diseases caused by a disturbance in *Vatadosha*.
- It is useful in serious conditions of asthma, heart problems, diabetes and high blood pressure.
- For those who have paralysis, this *pranayama* is beneficial.
- Benefits to heart patients, it removes the blockage of the heart and makes our heart healthy.
- Beneficial for those who have epilepsy, migraine pain, depression, stress and anxiety problem.

Conclusion

1. It may be concluded from our observations that even a short term practice of yoga reduces sympathetic tone and maintains it at an optimal level.
2. Yoga modalities with *Bhrami Vati* were associated with a significant reduction in blood pressure in this population.

These reductions are of clear clinical significance and suggest that yoga modalities with *Brahmi Vati* in proper dosage may offer an effective intervention for reducing blood pressure among people with essential hypertension.

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