

PREVENTION AND MANAGEMENT OF HYPERTENSION AND ASSOCIATED DISORDERS BY BHASTRIKA PRANAYAMA (A BREATHING EXERCISE)

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ABSTRACT:

Hypertension is a very commonly prevailing problem in our community, which is increasing day by day with an alarming rate. Excessive eating of saturated fatty oily foods, sedentary life style and avoidance of physical exercise produces deposition of cholesterol in the blood veins and arteries which results hypertension and further cardiac disorders. It becomes necessary to find a non-invasive medical solution to this problem. Therefore in the present study, *Bhasatrika Pranayama* was selected and performed on 30 patients for 60 days to evaluate its efficacy on hypertension and related signs and symptoms. It was observed that *Bhasatrika Pranayama* alone may diminish hypertension and associated symptoms because it not only produces symptomatic improvement but also improves various mental faculties to produce significant improvement in metabolism of all the patients. Therefore, *Bhasatrika Pranayama* can be administered effectively to the healthy people as well as patients of hypertension as a remedy for preventive and curative aspect.

Key Words: Hypertension, Yoga, *Bhasatrika Pranayama*.

INTRODUCTION:

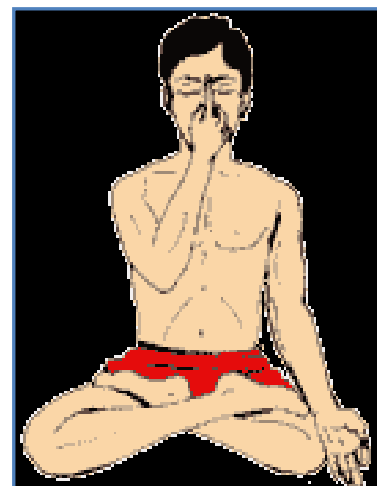
Hypertension is a very commonly prevailing problem in our community, which is increasing day by day with an alarming rate. Now it is not a problem of developed countries, as deemed earlier but vastly and rapidly increasing in developing countries like India also. Aetiology of hypertension is multi factorial but excess intake of fatty and spicy foods, smoking, use of alcohol, psychological stress, overload of the work, fast growing competitions in every field to achieving targets and ultra modernized life style, food habits are in the roots as well¹. Excessive mental stress, anxiety, strains, fatigue and excessive intake of fast foods leads to disturbance at level of third ventricle's grey matter and hypothalamus. Excessive eating of saturated fatty oily foods, sedentary life style and avoidance of physical exercise produces deposition of cholesterol in the blood veins and arteries which results hypertension and further cardiac disorders². So it is necessary to invent a good remedy for hypertension and associated disorders. *Bhasatrika Yogic Kriya* is a type of *Pranayama* which is considered better for both preventive and curative aspect in hypertension and associated disorders.

MATERIAL AND METHODS:

30 patients suffering from hypertension and associated disorders of age group 40 years to 50 years were selected for the study. These patients were advised to perform *Bhasatrika Pranayama* for 30 minutes after completing *Sookshma Vyayama* upto 60 days. Patient

of age below 40 years and above 60 years, patients having severe hypertension, hypotension, I.H.D., tuberculosis and other conditions that needed hospitalisation were excluded from the study.

Assessment criteria and gradation³: Cardinal symptoms like hypertension, anxiety, constipation, lack of concentration and insomnia were assessed by assigning a scoring pattern to each of these symptoms (Table 1).



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Table 1: Gradation of signs and symptoms:

Grading	Score
Lack of concentration	
Normal	0
Rarely loss of power of thinking and decision for short duration disturbs functions but not daily activities	1
Rarely loss of power of thinking and decision for long duration disturbs functions and daily activities	2
Frequently loss of thinking and decision for short duration disturbs functions but not daily activities	3
Continuous loss of thinking and decision disturbs functions and daily routine	4
Insomnia	
Sound Sleep	0
Disturbed Sleep wake up 1-2 times a night (Khandita Nidra)	1
Difficult to onset Sleep remains disturbed in night (Alpa Nidra)	2
Very less Sleep in small intervals makes patient irritable (Ati alpa Nidra)	3
Not getting sleep without medicine (Anidra)	4
Anxiety	
Normal	0
Rarely irritation of mind, by major provocation and for very short duration	1
Rarely irritation of mind by moderate to major provocation for long duration	2
Often irritation of mind by mild to major provocation for short duration	3
Continuous irritation of mind by any provocation	4
Diastolic B.P. (mm Hg)	
80 > Optimal	-1
85 > Normal	0
85 – 89 High-Normal	1
90-99 Stage 1 Hypertension	2
100-109 Stage 2 Hypertension	3
110 < Stage 3 Hypertension	4
Systolic B.P. (mmHg)	
120 > Optimal	-1
130 > Normal	0
130 – 139 High Normal	1
140 -159 Stage 1 Hypertension	2
160 – 179 Stage 2 Hypertension	3
180 < Stage 3 Hypertension	4
Constipation	
No constipation	0
Slight constipation with one stool/day	1
Marked constipation with one motion in two days	2
Marked constipation with one motion in more	3

than two days	
Marked constipation with drug abuse	4

Method of *Bhastrika Pranayama*⁴:

All the selected patients were advised to perform *Bhastrika Pranayama* at morning time after evacuation of natural urges. The patients had to sit upon the plane floor on blanket in *Padmasana* or *Sukhasana*.

The method of performing *Padmasanam* and *Bhastrika*:

After sitting on the plane floor, unfold the both legs straight. Now establish the left foot on the right thigh (groin), in the position that ankle remain near to umbilicus. Again by using same method, place the right foot on the left thigh, keep both ankles near the umbilicus and keep straight the backbone. Keep both knees touch the floor. After sitting in *Padmasanam*, patients should be advised inhale slowly, deeply as long as possible and with the mouth closed, to exhale forcibly through both the nostrils in a series of sixty expulsing within one minute. Initially this procedure was repeated for total three rounds of one hundred and eighty expulsions, gradually the repetition were increased according to the capacity and practice of the patient or maximum for 30 minutes (Figure 1).

Precautions:

Patients were advised to eat sweet, bitter (*Tikta Rasa*) food, cow's ghee, and cow's milk, light meals, bitter gourd, Dalia, Papaya, pomegranates, rest and do moderate walking. Patients were asked to avoid over eating, unctuous food, spicy and putrefied food, very rough food, banana, jack fruit, and acidic foods, overexertion, worry, anger, day time sleeping, suppression of natural urges during the course of therapy⁵.

STATISTICAL ANALYSIS:

The obtained data was analyzed statistically. The values have been expressed as mean ± SEM. The data were analyzed by applying ONE WAY ANOVA followed by post hoc test, TUKEY. A level of P<0.05 and P<0.001 were considered as statistical significant and highly significant respectively.

OBSERVATION AND RESULTS:

30 patients received the treatment in form of *Bhastrika Pranayama* as scheduled for 60 days. Evaluation of the effect of *Bhastrika Pranayama* was recorded on the basis of assessment criteria and grading of chief signs and symptoms. Results obtained have been place at Table 2. *Bhastrika Pranayama* had significant effect in lowering systolic blood pressure, anxiety and relieving constipation. It was also highly significant and effective in lack of concentration and insomnia. Diastolic

hypertension was relieved by 38.79 % and was statistically significant.

Table 2: Clinical Evaluation of patients treated with *Bhastrika Pranayama*

Symptoms	N	Mean		Dif	% of Change	H	q	P	
		BT	AT						
Hypertension	Diastolic	30	2.45	1.50	0.95	38.79	22.73	6.27	<0.05
	Systolic	30	2.95	1.50	1.45	49.15	49.89	9.21	<0.05
Anxiety		30	2.91	1.36	1.55	53.26	47.67	9.10	<0.05
Constipation		28	2.48	1.19	1.29	52.02	32.59	7.62	<0.05
Lack of Concentration		30	1.22	0.44	0.78	63.64	16.96	5.43	<0.01
Insomnia		27	1.74	0.37	1.37	78.72	31.08	7.33	<0.01
P < 0.05 – significant, P < 0.001 – highly significant, P > 0.05 – non significant									

DISCUSSION:

According to *Bhagavadgita*, *Yoga* is the state of that eternal tranquillity of mind which keeps the mind being non-distracted and allows self realization⁶.

In present era due to ultra modernization and mechanization human being bears a great amount of mental stress and strain. This has resulted into marked increase of mental unrest causing various psychological and psychosomatic disorders. And here is exactly where *Yoga* plays a very important role in averting and treating them. *Yoga* is not the science of particular field but it is the science of human life itself. Yogic practices are not mere physical exercise but they recondition mind and body to their utmost. *Yoga* constitutes an overall effect on human body. *Yoga* procedures affect the vital organs and the vital systems to their utmost⁷.

It has been proved that *Yoga* in general, achieves voluntary control over the autonomous nervous system by establishing equilibrium between the sympathetic and parasympathetic nervous systems through the hypothalamic limbic system⁸. Thus *Yoga* easily achieves control over mind which depends entirely on an autonomous nervous system.

According to various texts of *Yoga* i.e. *Hatha Yoga Pradipika*, *Bhastrika Pranayama* liberates the human being from these *Granthis* or *Karmas* (*Aagami*, *Samchita* and *Prarabdha*) and may be helpful in achieving the main target of life or birth, that is *Nirvana* (*Moksha*)⁹

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Proper practise of *Pranayama* regulates cardiac, nervous and respiratory system related functions. *Pranayama* practise improves lung circulation and cardiac output is increased by about 20 %. Mental stress, insomnia, anxiety and other related disorders are easily relieved by practise of *Pranayama*. The *Pranayama* is mainly known for increasing the consumption of oxygen with the minimal physical exertion¹⁰.

Bhastrika Pranayama removes the excess of the *Vata*, *Pitta*, *Kapha*, vitalizes the *Agni*, arouses the *Kundali*, removes defects in the mouth, bestows auspiciousness, removes impediments such as *Kapha* remaining in the interior of the opening of the *Brahma Nadi* and is capable of bursting through the three knots as the result of effectively practicing *Bandhas*¹¹. The *Bhastrika Pranayama* balances and strengthens the nervous system as well as endocrine system by inducing peace, tranquillity and one-pointedness of mind. It works on microcirculation of blood and improves that. It results in the regulation of pineal, pituitary and adrenaline glands, which are responsible for metabolism. It works on microcirculation of blood and improves that. It results in the regulation of pineal, pituitary and adrenaline glands, which are responsible for metabolism¹².

Bhastrika regulates the functions of three knots (*Trayagranthi*) pineal, pituitary and adrenaline glands. There are so many scientific views regarding with these three glands hormones and effects on metabolism are available in modern medical science.

In the present study 30 patients were selected on the basis of hypertension and associated complaints. This study schedule was for 60 days and after completion the duration of treatment same patients were again counselled and examined properly for assessment the effect of the treatment received. The changes were recorded and compiled according to assessment criteria and these findings concluded that *Bhastrika Pranayama* is very effective in prevention and management of the hypertension and associated disorders. *Bhastrika Pranayama* was also found to be effective in management of insomnia¹³.

Hypertension is considered as a psychosomatic disorder and *Bhastrika Pranayama* is an effective non medicinal remedy for physical and psychological disorders as well. *Bhastrika* relieves constipation and makes digestion proper. *Bhastrika Pranayama* reduces the excess

cholesterol from blood vessels by increasing blood circulation in the body. *Bhastrika Pranayama* mainly affects Pituitary gland, Thyroid gland and adrenal gland by regulating their function thus both physical and mental relaxation is obtained which shows antihypertensive effect on body. *Bhastrika Pranayama* balances and strengthens to nervous system along with endocrine system, so induces peace, tranquillity and one-pointedness of the mind. *Bhastrika Pranayama* is also seen beneficial in obesity, diabetes and respiratory system disorders.

CONCLUSION:

Bhastrika regulates the functions of three knots (*Trayagranthi*) pineal, pituitary and adrenaline glands. There are so many scientific views regarding with these three glands hormones and effects on metabolism are available in modern medical science. It is clear that, *Bhastrika Yogic Kriya* regulates these three glands and this study establishes the *Bhastrika Pranayama* as a best non-medicinal Yogic remedy for hypertension and associated complaints.

Bhastrika Pranayama alone may diminish above symptoms because it not only produces symptomatic improvement but also improves various mental faculties to produce significant improvement in metabolism of all the patients. Nowadays a large no of the people are affected from hypertension and associated disorders due to having improper life style with anxiety and stress. *Bhastrika Pranayama* can be administered effectively to the healthy people as well as patients of hypertension as a remedy for preventive and curative aspect.

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