

Yoga Therapy For The Management Of Hypertension

Reetu Singh¹ , Dr. Sanjit Sardar^{1*} (SUPERVISOR)

¹*Department of Physical Education, Guru Ghasidas Vishwavidyalaya (A Central University) Bilaspur C.G.*

ABSTRACT

Hypertension is a major public health problem and is an important risk factor for stroke, coronary heart disease and renal failure. The blood pressure is not well controlled with drug therapy in large number of individuals, especially in the developing countries. There is a need for less expensive non-pharmacological alternative methods to control blood pressure. Yoga may be such cost-effective alternative. Several uncontrolled and randomized control trials have evaluated short-term and long-term effects of yoga/meditation-based techniques in prehypertension and mild hypertension. During the period of treatment, the symptom relief in the subjects is assessed periodically by a sphygmomanometer. Yoga is proved to be a best method to treat high blood pressure.

KEYWORDS: - Yoga, Asanas, Pranayama, Lungs, Stress, Hypertension, Obesity, Primary health care.

INTRODUCTION

The flow of blood throughout the body requires sufficient force or pressure to be adequately distributed. The initial contraction of the heart muscles is what creates the flow that can be measured by the pressure the blood exerts. When the body is exerted, the requirement for oxygen is increased and as a result the metabolic rate increases, thus increasing the heart rate and blood pressure.

Increased blood pressure may be the result of physical exertion or negative emotions like fear and anger, or mental tensions like anxiety or stress. The heart has to exert itself to provide more blood for all these reasons. The heart also subdues the rate and intensity of its beating and the pressure this evokes after the cause that called forth the exertion vanishes. A temporary rise in the pressure of blood is a natural response to the body's needs and is not a disease. A permanent elevation in the level of blood pressure is a disease, although increased blood pressure is not the disease but rather the consequence of the

disease (which is the root cause of increased levels of blood pressure).

Blood is forced out of the heart because of the contraction of the heart muscles. Pressure is generated on the walls of the blood vessels by this flow of blood. The pressure increases in proportion to the amount of blood being pumped out of the heart. In some instances, a rise in blood pressure is not due solely to the amount of blood being pumped but due to the reduced circumference of the blood vessels through which the blood flows, either because of vessel narrowing or loss of vessel elasticity. As a result, the blood vessels are not able to expand to the required extent hence increasing blood pressure. Blood pressure is never even all over the body. The pressure is at its maximum at the point where it is pumped out from the heart and is at a low point as it re- enters the heart. It is measured near the blood vessel of the arm for the sake of creating a standard location for comparison. A belt is tied to the arm before measuring the blood pressure. The blood pressure is of two types- the 'upper pressure' (Systolic) and the 'lower pressure' (diastolic). The pressure that is created

when the heart is in a contracted state is the upper pressure and that when the heart is in expanded state is the lower pressure. That means the lower pressure is the constant pressure in the body. It starts increasing with the contraction of the heart and then falls down to the limit of the lower pressure.

Tension is an unnatural state. Tension is created in case of performing some work. If the work is physical, the tension is physical, whereas if the work is mental the tension is at the mental level. That means the body or the mind has to work excessively due to this tension. The body needs extra oxygen and digestive fluids to perform this work. These are supplied through the medium of blood and hence the blood supply has to be increased. This increases the work of the heart as blood supplier. The heart has to exert itself each and every time tension increases. Frequent or constant tension implies enhanced work for the heart without rest. As a result, the blood vessels contract, sufficient blood is not supplied, and the impurities from the cells are not carried away. This results in slowing down the functioning of the cells and ordinary rest or sleep is not sufficient to release this tension.

HYPERTENSION (HIGH BLOOD PRESSURE/ SILENT KILLER)

- Blood Pressure is the force / pressure exerted by the blood on the walls of the arteries.
- High blood pressure can be defined as a rapid/elevated blood pressure greater than 140/90 mmHg (contraction pressure greater than 140 or expansion pressure greater than 90).
- Untreated hypertension increases the risk of heart disease and stroke.

HYPERTENSION

- Normal blood pressure is 120/80 mmHg.
- Prehypertension refers to an increase in blood pressure that is a warning sign of hypertension.
- It is higher than normal blood pressure, up to 139/89 mm/Hg.
- High blood pressure is greater than 140/90 mm/Hg.

TYPES OF HYPERTENSIONS

- The cause of hypertension in 95% of people with high blood pressure is unknown, this is called primary or primary Hypertension or early Hypertension.
- When the cause is found, that condition is called secondary/ secondary hypertension.

PREVALANCE (EXTENSION)

- An analysis of data collected from around the world in 2005 under the analysis done by global burden of Hypertension found that 20.6 Indian men and 20.9 Indian women suffer from Hypertension.
- An average of 22.9% Indian men and 23.6 Indian women are projected to develop Hypertension by 2025.

CAUSES

1. PRIMARY HYPERTENSION

- There is no definite cause, five have been known to cause stress, obesity, alcoholism and hereditary hypertension.

2. SECONDARY HYPERTENSION

- Kidney damage or impaired functioning tumors.
- Over activation of the adrenal glands.
- Narrowing of the aorta (abnormally narrowing/narrowing of the aorta).
- pregnancy related conditions.
- drugs, alcohol and food intake.

SYMPTOMS

There is usually no obvious symptom. But the patient may have the following problems: -

- Shortness of breath (difficulty in breathing)
- Headache
- Nausea
- Vomiting
- Ringing in the ears Excessive sweating
- Blurred vision

COMPLICATIONS

- Brain strokes a stroke is caused by a reduced blood supply to the brain.
 - Atherosclerosis is the cause of hypertension, narrowing of the arteries can lead to heart attack and stroke.
 - Kidney failure due to the damage to the blood vessels in the kidney, the filtration does not happen properly, as a result of which the foreign matter starts accumulating.
 - Bone loss High blood pressure increases the amount of calcium in the urine. Due to this excessive removal of calcium. Bone density decreases.
 - In heart attack hypertension, the heart has to face difficulty in pumping blood. Over time, the heart muscle thickens, restricting blood flow, which can lead to heart failure.
- Loss of vision (hypertensive retinopathy) High blood pressure damages the blood vessels of the retina. As a result, there is a problem of vision impairment.

The easiest and primary form of contemplation is chanting Aum in a voice that can be heard by our own ears. If hypertension patient chanting Aum for half an hour daily, their hypertension will surely be reduced.

YOGA NIDRA

Yoga Nidra is a kind of contemplation in an easy form. Yoga Nidra brings about relaxation on physical, emotional and mental levels. This is what the hypertension patient needs. Hence regular performance of just Yoga Nidra will also cure the patient. The instructions of Yoga Nidra can be listened to in recorded form. There is no need of an instructor for this purpose.

YOGA PRACTICES FOR HYPERTENSION

YOGIC PRACTICES FOR THE MANAGEMENT OF HYPERTENSION



Preparatory Practices:

- Start the training with Shavasana Practice for 3 minutes.
- Basic movements (Yoga Sopan book)
- Preparatory movements (Yoga Pravesh book)

Useful Practices

Asanas are to be practiced on Level 3 Asanas; Tadasana, Vajrasana series from Yoga Sopan book, Pavanamuktasana, Ardha Chakrasana, Bhujangasana– Shalabhasana, Dhanurasana, Ardha Matsyendrasana (1 minute each side) Tadasana, Triyak Tadasana, Kati Chakrasana, Trikonasana, Virasana, Shavasana.

Cleansing Practices

- Uddiyana Bandha 3 rounds (each round 30 seconds)
- Jal neti (Once a week)

Pranayama

Anulom Vilom Deep Breathing 15 minutes
Ujjayi Pranayama without Kumbhak for 10 minutes
Sheetali Purak followed by Bhramari Rechak (21 rounds)

Meditation on Anahata Chakra with mantra “Yam”
Yoga Nidra for stress relief Walking for 60 minutes, once a day.

Optional Practices

Asanas: Vakrasana, Uttanpadasana, Ushtrasana, Marjariasana, Shshankasana.

Pranayama: Left nostril breathing, Bhramari Pranayama without Kumbhak

Cleansing Practices: Neti – Agnisar 100 strokes total in 3 to 4 rounds

Contraindications: Sarvangasana, Halasana, Sirsasana (Head stand) & its variations. Fast breathing, Right nostril breathing. Bhastrika. Any Pranayama with Kumbhak. Vaman Dhouti, Shankha Prakshalana (Laghu / Poorna.)

Food Habits

Suitable: Normal food with less fats & carbohydrates but with high fibers. use minimum salts. Best food is fruits & vegetables.

Avoid: Nonveg food, Milk & milk products (Skimmed milk can be taken), Rice, Oily & Spicy food, refined foods, Fast Food, Preserved Food. Salts.

OBJECTIVES:

- To Study Yoga and Hypertension
- To define Blood pressure of patients
- Statistical analysis of blood pressure levels at first and last visit in control and yoga groups

Table 1. Blood pressure levels at each visit in control and yoga groups.

- To Analyze the Blood pressure Reduced Patients

RESEARCH METHODOLOGY:

The study was conducted with 100 subjects for a period of 3 months. The patients were recruited from the Outpatient of cardiology department and these patients were daily subjected to yoga session. The study protocol was executed after approval by the Institutional Ethical Committee. Informed consent was obtained from study participants. All subjects were screened by taking a medical history and clinical examination. The same number of age/sex matched control group with high blood pressure were also enrolled and kept without yoga techniques. Both groups were advised to continue their regular medicines. Their Blood Pressure recorded at their first visit and thereafter before and after the yoga session for every 5 days. The Blood Pressure measurements were recorded by using digital Blood Pressure apparatus with the subject seated.

RESULT AND DISCUSSION:

Total number of subjects included in this study was 100. These were no dropouts during the treatment period. Before, during (every weekend) and one week after completion of the treatment the observed average blood pressure scores were found to be as follows. Among all the subjects before yoga, the mean value of systolic blood pressure is 154.2 ± 8.2 mmHg and mean diastolic blood pressure is 100.3 ± 6.4 mmHg and the mean BMI was observed as 27.4 ± 2.1 kg/m². In control group, the mean value of systolic blood pressure is 155.3 ± 9.6 mmHg and mean diastolic blood pressure is 100.2 ± 8.2 mmHg and the mean BMI was observed as 27.1 ± 2.3 kg/m². (Table1) After 3 months of yoga, the mean value of systolic blood pressure is 122.3 ± 4.3 mmHg and diastolic blood pressure is 81.7 ± 4.5 mmHg in yoga group. Whereas, in control group, the mean value of systolic blood pressure is 127.5 ± 5.9 mmHg and diastolic blood pressure is 84.4 ± 4.1 mmHg were observed after 3 months. (Figure 1)

No OF VISITS	YOGA GROUP		CONTROL GROUP	
	SYSTOLIC	DIASTOLIC	SYSTOLIC	DIASTOLIC
1	154.2 ± 8.2	100.3 ± 6.4	155.3 ± 9.6	100.2 ± 8.2
2	150.7 ± 7.1	100.1 ± 5.7	153.4 ± 6.3	98.6 ± 7.8
3	146.9 ± 6.8	100.1 ± 4.6	150.9 ± 6.6	96.1 ± 6.9
4	144.3 ± 6.5	98.4 ± 6.7	149.3 ± 5.9	95.7 ± 5.4
5	141.6 ± 7.1	97.1 ± 6.2	145.7 ± 6.4	92.6 ± 6.1
6	138.4 ± 5.8	95.9 ± 5.3	142.5 ± 5.1	91.5 ± 4.6
7	136.6 ± 6.7	94.6 ± 5.9	140.9 ± 5.9	90.8 ± 4.3
8	133.9 ± 6.1	90.9 ± 7.4	137.5 ± 6.1	88.6 ± 6.1
9	130.5 ± 5.2	88.6 ± 6.1	135.2 ± 5.4	86.9 ± 5.7
10	128.6 ± 5.6	85.9 ± 5.3	133.9 ± 6.3	86.1 ± 4.2
11	125.9 ± 6.1	83.4 ± 4.9	130.5 ± 5.7	85.6 ± 3.8
12	122.3 ± 4.3	81.7 ± 4.5	127.5 ± 5.9	84.4 ± 4.1

There was significant difference observed in SBP and DBP levels between first and last visit in yoga and control group. But, DBP shows complete

normal in yoga group than compare with control group. (Table 2)

Table 2. Statistical analysis of blood pressure levels at first and last visit in control and yoga groups

YOGA GROUP	First visit	12 th Week	P VALUE
SBP	154.2 ± 8.2	122.3 ± 4.3	0.003
DBP	100.3 ± 6.4	81.7 ± 4.5	0.001
CONTROL GROUP			
SBP	155.3 ± 9.6	127.5 ± 5.9	0.005
DBP	100.2 ± 8.2	84.4 ± 4.1	0.043

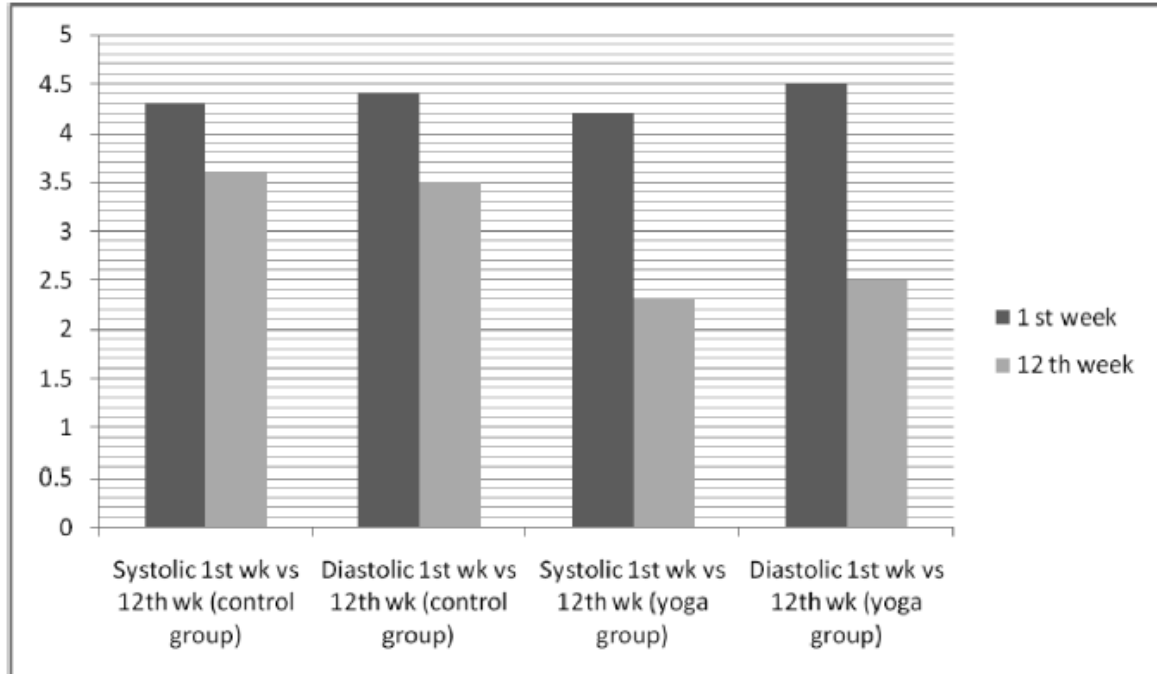


Figure 1. Blood pressure levels at first visit and 12th week in control and yoga groups

DISCUSSION:

Hypertension leads to heart attack, stroke, and other cardiovascular events. Which is the condition, the pressure of the blood vessel walls is high. It increases the work load of the heart and it leads to hardening of the arteries, rupture of the vessel walls, and ailments of heart. Stress is a major reason for hypertension and modern-day life, sedentary life, poor diet, can also induce HTN individually. Hypertension is commonly called as 'silent killer' because it doesn't show any symptoms and signs in earlier stage. When the blood pressure is high the feedback system cannot maintain homeostasis because the heart is sending signals to the brain that it needs more oxygen, there for the heart beats faster and harder to get the extra oxygen needed possibly causing higher blood pressure and this unable the heart's homeostasis. The effects of yoga on lowering blood pressure in more recent studies have mostly been modest however data from the Framingham Heart Study showed that a 2 mm Hg reduction in DBP could reduce the risk of stroke or transient ischemic attack by 14%. While a 10 mm Hg reduction in SBP, seen with prescription drugs and in some meditation studies, is associated with a 30% relative reduction in risk of stroke. Thus, smaller reductions in BP [5 mm Hg in SBP or 2

mmHg in DBP] achievable through diet, some dietary supplements and mind body therapies can be expected to significantly reduce blood pressure.

CONCLUSION:

Helping the patients understand their condition, finding the root cause of the problem and creating a healthy opportunity for them to change themselves, is the dharma of the therapist. Amma ji, Yogacharini Meenakshi Devi Bhavanani has defined dharma as doing the right thing for the right person at the right place and at the right time in the right manner. It may take many months before we start to witness benefits of these yogic lifestyle changes and yoga chikitsa practices. We must continue to motivate the patient (and ourselves too) to keep up their and efforts without allowing any slackening to occur. It all may seem to be a 'big asks', but it is necessary to do all of this if we want to practice yoga chikitsa. Otherwise please remember it is merely yogapathy, the suppression of symptoms though yoga and not yoga chikitsa.

REFERENCES:

1. Pramanik, Tarak Nath (2017) *Yoga Vigyan*, Sports Publications, New Delhi.
2. Saraswati, Swami Niranjananand (2013) *Yogic Jeevan*, Yoga Publications Trust, Munger, Bihar, India.
3. Saraswati, Swami Satyanand (2006) *Asana Pranayama Mudrabandha*, Yoga Publications Trust, Munger, Bihar.
4. Saraswati, Swami Satyanand (2012) *Kriya Yoga*, Yoga Publications Trust, Munger, Bihar.
5. Digambarji, Swami (2008) *Shri Krishna Yoga Method*, Yoga Publications Trust, Munger, Bihar.
6. Maheshanandji, Swami (1991) *Shiva Samhita*, Kaivalyadham, Shrimanyadhan Yoga Mandir Samiti, Pune, Maharashtra.
7. Saraswati, Swami Karmanand (2013) *Diseases and Yoga*, Yoga Publications Trust, Munger, Bihar.
8. Dashora, Nandlal (2017) *Patanjali Yogsutra Yogdarshan*, Randhir Prakashan, Haridwar.
9. Saraswati, Swami Satyanand (2000) *Nav Yogini Tantra*, Yoga Publications Trust, Munger, Bihar.
10. Saraswati, Swami Shankar Devanand (2008) *Effect of Yoga on Hypertension*, Yoga on Hypertension, Yoga Publications Trust, Munger, Bihar.
11. Saraswati, Swami Niranjananand (1995) *Yoga Sadhana Mala* Yoga Publications Trust, Munger, Bihar.
12. Kumar, Dr. Kamakhya (2007) *Yoga Mahavigyan*, Standard Publishers, New Delhi.
13. Saraswati, Swami Niranjananand (2001) *Dharana Darshan*, Yoga Publications Trust, Munger, Bihar.
14. Saraswati, Swami Niranjananand (2004) *Gherand Samhita*, Yoga Publications Trust, Munger Bihar.