



ORIGINAL RESEARCH PAPER

Biochemistry

"LIPID PROFILE AND CARDIOVASCULAR PARAMETERS MODULATION BY DOING REGULAR PRACTICE OF OM CHANTING AND YOGA NIDRA FOR 6 MONTH IN HYPERTENSION."

KEY WORDS: Yoga nidra, OM chanting, Blood pressure, Lipid profile

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ABSTRACT

Hypertension (HTN) is a major public health concern, and elevated blood pressure (BP) is a distinct risk factor for all - causes of morbidity and mortality. Considering the growing evidence of Om chanting and yoga nidra interventions in the management of hypertension, The objective of the current randomized controlled study is to assess the effect of OM chanting and yoga nidra (Relaxation technique) on BP and lipid profile in individuals with HTN. Hypertension is a major global problem which is exacerbated by stress. The prevalence of stress is increasing day by day. Yoga is a mind-body relaxation technique that has been used as preventative and therapeutic tool. The aims of this study was to investigate whether regular practice of OM chanting and yoga nidra for six month can improve the lipid profiles and cardiovascular parameters function in hypertension.

INTRODUCTION

Hypertension is a global public health challenge and elevated blood pressure is one of the leading risk factors for mortality globally.^[1] Over 10.4 million deaths have been reported worldwide due to hypertension (HTN) and it is the most preventable and modifiable vascular risk factor for premature morbidity and mortality as well.^[2,3] Dyslipidemia is a common metabolic abnormality observed in patients with hypertension, elevated blood pressure lead to endothelial dysfunction, vascular inflammation., vascular remodeling and atherosclerosis.^[4].. Reduction in blood pressure, as little as 10 mm Hg in systolic blood pressure (SBP) and 4 mm Hg in diastolic blood pressure (DBP), is reported to reduce the risk of myocardial infarction and stroke by 23% and 30% respectively.^[5] . Thus, achieving even a smaller reduction in SBP and DBP through non-pharmacological means such as diet, exercise and complementary therapies like OM chanting and yoga nidra would be of greater significance in the management of hypertension alongside conventional management.

American Heart Association (AHA) task force guidelines have emphasized on the importance of lifestyle interventions such as regular exercise and yoga in the effective management of hypertension.^[6] . Keeping in mind the increase in cardiovascular mortality in low and middle income countries, a community based intervention would be a more effective strategy in the management of hypertension.^[7] the effect of integrated relaxation practices of Yoga nidra and Om meditation on blood pressure and lipid profile in patients with elevated blood pressure.

Aims & Objective:

The aim of present research was to study the effect of six month Om chanting and yoga Nidra over lipid profiles and cardiovascular parameters on hypertension.

MATERIALS & METHOD:

This study was a prospective randomized controlled study conducted on patients with diagnosed HTN. The study was conducted in Physiology department of Physiology, in Sukh Sagar Medical college. Cardiovascular parameters and lipid profile parameters were evaluated at before and after 6 months of Om chanting and yoga Nidra.

Study Design

A prospective randomized controlled study.

Place Of Research: Department of Physiology, S.S.M.C. & H Jabalpur (M.P.)

Study Period: March to August 2024, Six months.

Study Subjects: Thirty hypertensive patients, age group 25 to 60 years.

Inclusion Criteria: All Thirty hypertensive patients, age group 25 to 60 years. who were under a hypertension diet and taking essential pharmacological therapy, history of hypertension and stress related diseases and not doing any type of physical exercise.

Exclusion Criteria.

Subjects who were taking other physical activity like gym, athletics etc. smokers, alcoholic, with respiratory disorders, jaundice, diabetes, and stress related diseases. Patients who are practicing yoga or any form of exercise more than 3 days a week.

Methodology:

The present study was conducted on thirty male patients of hypertension in S.S. medical college & Hospital underwent thorough clinical examination with proper history was taken with special emphasis on history related to hypertension and stress related diseases and not doing any type of physical exercise.

BP was measured in supine posture by Sphygmomanometer.^[8] After 10 min of rest Two reading were taken in five minutes interval and the mean of two was taken as the BP.

Om Chanting

Patients were trained in 'Om' chanting by an experienced yoga trainer. The patients were trained to chant the vowel (O) part of the 'Om' followed by the consonant (M) part of the 'Om' for second in each chanting. They were trained to chant 'Om' 3 times per minute for a period of 5 min, twice a day.

Yoga Nidra

After 'Om Chanting', yoga nidra developed by Swami Satyananda Saraswati, Bihar School of Yoga, India, was given to the patients in a supine position for a period of 20 min^[9]. Than All patients were taking yoga nidra by yoga trainer.

A fasting blood sample (5 mL) was collected for assessment of lipid profile markers such as triglyceride (TG), total cholesterol (TC), low-density lipoprotein (LDL), and high-density lipoprotein (HDL) before start Om chanting and yoga Nidra, after 3rd month and after 6th month of taking Om chanting and yoga Nidra in all the patients. Total cholesterol was carried out by enzymatic method and using the separated serum of the subject's. The enzymatic assessment was done by using biochemical assay kits prescribed for the

Analyzer BA 88 of Nicholas Company.

All the 30 male volunteers of study group were trained under the guidance of a certified "yoga" teacher for 15 days in the Department Of Physiology. They carried out "Chanting of Om followed by Yoga Nidra and in a prescribed manner. The schedule consisted of-

- Chanting of Om- 05 minutes
- Yoga Nidra -20 minutes

Statistics

The data was analyzed statistically by using statistical software Graph Pad in Stat vs.3.10 and MS Excell (2003). Statistical analysis of BP and triglyceride (TG), total cholesterol (TC), low-density lipoprotein (LDL), and high-density lipoprotein (HDL) were done, using student t-test and $p < 0.01$ was considered as significant.

RESULTS

Table No. 0 1: In study group, Showing basal values and effects of Om chanting and yoga Nidra after 3 and 6 month on Sys.B. P., Dias. B. P. and Pulse rate/ min, with their Mean & Standard Deviation and p value in study group , the values of all parameters of Blood pressures were more significantly decreased ($p < 0.001$).

Parameters	Basal value	Effect of three month of om chanting and yoga nidra	Effect of six month of om chanting and yoga nidra	P value
Systolic Blood Pressure(mm Hg)	147.53 ± 3.70	124.1 ± 2.82	120.0 ± 1.98	($p < 0.01$)
Diastolic Blood Pressure(mm Hg)	96.13 ± 2.40	86.68 ± 3.13	78.25 ± 4.15	($p < 0.01$)
Pulse rate/ min	90/ min	77.79 ± 5.14	75.28 ± 4.89	($p < 0.01$)

Table No. 2: In study group Showing basal values and effects of Om chanting and yoga Nidra after 3 and 6 month, on triglyceride (TG), total cholesterol (TC), low-density lipoprotein (LDL), and high-density lipoprotein (HDL), with their Mean & Standard Deviation and p value The values of all parameters of lipid profile were more significantly decreased ($p < 0.001$) except high-density lipoprotein (HDL) were significantly increased,

Parameters	Basal value	Effect of three month of Om chanting and yoga nidra	Effect of six month of Om chanting and yoga nidra	P value
Triglyceride (TG) (mg/dl)	194.17 ± 73.27	184.83 ± 72.67	176.52 ± 32.17	($p < 0.001$)
Total cholesterol (TC) (mg/dl)	243.75 ± 35.07	237.32 ± 35.07	231.22 ± 15.07	($p < 0.001$)
Low-density lipoprotein (LDL) (mg/dl)	164.9 ± 34.421	155.93 ± 34.39	150.62 ± 14.09	($p < 0.001$)
High-density lipoprotein (HDL)(mg/dl)	40.10 ± 4.58	34.91 ± 5.44	34.78 ± 5.43	($p < 0.001$)

DISCUSSION

On analyzing the effect of Om chanting and yoga Nidra on 30 cases of hypertension age group 25 to 60 years, in our study In the study group, the combination of the two relaxation practices- 'Om' chanting and Yoga nidra, showed a statistically significant reduction in SBP, DBP. Pulse rate, Triglyceride, Total cholesterol and Low-density lipoprotein except High-density lipoprotein was increased.

The mechanism of action and impact of 'Om' chanting on breathing pattern is well-documented. During Om chanting, the breathing rate is slowed down and airway resistance is induced due to the laryngeal contraction to generate the

particular sound and vibrational effects, thereby increasing the vagal tone, and resultant physiological relaxation via parasympathetic arousal.^[10,11] The changes induced in the respiratory tract impact the ascending vagal activity which would produce a widespread action in critical regulatory centers of the brain. The parasympathetic nervous system (PNS) which gets stimulated by the neurotransmitter GABA from the pre-frontal cortex and insular cortex reduces the hyper activity of the amygdale.^[12] The American College of Cardiology/American Heart Association (AHA) task force guidelines have emphasized on the importance of lifestyle interventions such as regular exercise and yoga in the effective management of hypertension^[13]. Keeping in mind the increase in cardiovascular mortality in low and middle income countries, a community based intervention would be a more effective strategy in the management of hypertension.^[14]

The integrated response of Yoga nidra on the hypothalamus results in decreased sympathetic nervous system activity and simultaneously increases the parasympathetic activity as well, by possible activation of the HPA axis.^[15,16]

A MRI study has demonstrated that 15 s loud 'Om' chanting stimulates the auricular part of the vagus nerve.^[17] Similar to 'Om' chanting, Yoga nidra is also an equally effective relaxation practice. Yoga nidra is considered to be a state of relaxation with an altered state of consciousness.^[18] The integrated response of Yoga nidra on the hypothalamus results in decreased sympathetic nervous system activity and simultaneously increases the parasympathetic activity as well, by possible activation of the HPA axis..^[19] EEG studies showed an initial increase in the beta wave activity during the practice, indicating a calm state of mind being induced in the practitioners.^[20] Serum cholesterol levels may be elevated during sympathetic overactivity. Chronic stress may raise cholesterol levels independent of dietary measures.^[21] Studies on yoga nidra proved that Yoga nidra effectively reduces stress and anxiety^[22].

CONCLUSION

It was concluded that Combination of the two well-known relaxation practices chanting of Om and yoga nidra has shown to be beneficial in the reducing high BP and lipid profile in patients with hypertension. With no adverse events being reported during the entire duration of the intervention, these specific yogic relaxation practices could be used as a complementary therapy alongside conventional management of hypertension. bring the lipid profiles normal , improve the sense of well being, slowed ageing process, and improving physically, mentally, spiritually and financially spiritual growth. Thus society becomes more disciplined

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