

RESEARCH ARTICLE

Immediate benefits of “Om” chanting on blood pressure and pulse rate in uncomplicated moderate hypertensive subjects

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ABSTRACT

Background: Chronic stress plays major role in the development of hypertension (HTN) in young-aged and middle-aged adults in the present scenario of fast lifestyle. Such patients can be treated better by stress reduction techniques such as yoga and meditation with or without medication as per individual case. People are aware of many pranayama and meditation techniques, but there is no standard and scientifically proven advice to the patients for reduction of blood pressure (B.P). **Aims and Objectives:** In our study, we have tried to study the immediate effect of 5 min Om chanting on heart rate and B.P in uncomplicated moderate hypertensives. **Materials and Methods:** The study group comprises 50 hypertensive subjects (male and female) between the age group of 40–60 years who were already on drugs but demonstrated poor control of B.P. **Results:** The significant reduction of 14/05 mmHg in B.P and 6 beats of pulse rate was observed immediately after 5 min of Om chanting. **Conclusions:** Hence, Om chanting can also be added as supportive therapy with drugs in mild or moderate cases of HTN. Om chanting can be suggested as daily practice at least for 5 min for the better control of B.P along with regular medication.

KEY WORDS: Om Chanting; Blood Pressure; Meditation; Hypertensives

INTRODUCTION


Hypertension (HTN) is one of the preventable risk factors for heart disease. With over 1 in 5 adults is suffering from HTN in the whole world.^[1] The prevalence of disease is increasing in the present scenario in both the developing and developed countries due to fast lifestyle. In the past, it was seen in elderly people in the form of essential HTN, but these days, HTN is diagnosed in middle-aged as well as in young adults and children also.

HTN is a chronic cardiovascular disease that may result in cerebrovascular accidents, ischemic heart disease, chronic

renal disease, and retinal hemorrhages. Among stroke deaths, 57% of deaths are due to uncontrolled HTN, and in deaths, due to coronary heart disease, 24% are contributed by HTN.^[2] Therefore, it is very important to diagnose and treat HTN at an early stage to avoid long-term complications and untimely deaths.

It is becoming challenging to treat HTN in such hurry and worry style of life. It has been observed that stress-induced hypertensive patients respond poorly to antihypertensive drugs. They need to modify their lifestyle for control of blood pressure (B.P). Such patients can be treated better by stress reduction techniques such as meditation and yoga with or without medication.

The techniques of meditation and yoga are non-invasive, cost-effective, and easy to practice. No appreciable side effects or symptoms have been observed with this relaxation technique.^[2] Not only that, practice of yoga and meditation induces positive attitude toward life. The patients are

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self-motivated to live a healthy life, eat balanced diet, care for the self, and better adherence to drugs for the treatment of the disease.

These days’ people are aware of many techniques of pranayama and meditation, but there is no standard and scientifically proven advice given to the patients for reduction of B.P. In this study, modest attempt has been made to scientifically define the benefits of a particular type of meditation for a particular period in hypertensive subjects. We have used Om chanting in our study because it is the most commonly practiced spiritual technique by the people since the time of Upanishads.

According to Upanishads, Om is the name or symbol of God. Om is the force behind all thoughts and chanting or thinking about Om will cause quiet mental state.^[3] It was reported that chanting of Om reduces heart rate, B.P, and reduces skin resistance. Earlier studies reported that effective “Om” chanting causes vibration sensation around the ears, which is transmitted through the auricular branch of the vagus nerve and stimulates vagal nerve.^[3] Hence, hyperactivity of parasympathetic nervous system due to Om chanting could demonstrate lowering of B.P.

We have tried to assess the immediate effects of 5 min Om chanting on heart rate and B.Ps in moderate hypertensives who had poor control of their B.P even with drugs.

MATERIALS AND METHODS

The effects of Om meditation were studied in 50 cases of moderate essential HTN under medication who were in the age group of 40–60 years Table 1. The subjects of the study were selected from cardiac outpatient department. The subjects, who had poor control of B.P even with antihypertensive drugs, were selected for the study. Of 60, only 50 subjects qualified the inclusion criteria because we excluded severe hypertensives (B.P > 179/109 mmHg) as per AHA 7 classification and hypertensives with complications.

In selected subjects, there were 28 males and 22 females. Their mean age was 50 years. The subjects suffering from HTN for 1–20 years were included in the study. The mean duration of HTN for these subjects was 5 years. All the subjects were on antihypertensive drug therapy, out of which 40 subjects were on lipid-lowering drugs also, however, at the time of the study; their fasting lipid profile was within normal range.

The detailed case history was taken regarding family history of HTN, duration of the disease, duration of treatment, type and dose of drugs, adherence to drugs, and diet regime. Detailed medical examination was done to rule out cardiac and neurological complications.

Inclusion Criteria

The following criteria were included in the study:

- Males and females
- Age 40–60 years
- Moderate hypertensives (systolic 140–179 mmHg) and diastolic (90–109 mmHg) (2017 AHA guidelines)
- Under antihypertensive therapy
- Without any cardiac or neurological complications.

Exclusion Criteria

The following criteria were excluded from the study:

- Secondary HTN of any etiology
- Significant cardiovascular complications
- Thyroid disorders
- Uncontrolled diabetes mellitus
- Addiction to alcohol
- Grossly abnormal liver/kidney function tests
- Subjects practicing yoga/meditation/stress reduction technique.

Measurement of B.P and Pulse Rate (PR)

- PR
- Systolic and diastolic B.P.

Radial pulse was counted for 1 min by palpating the radial artery with three finger method against the styloid process of radius. The standard procedure of measurement of B.P as described by N.S. Korotkoff, in 1902, was used for the measurement of systolic and diastolic B.P with the help of mercury manometer and stethoscope.

The subject rested on a comfortable chair with hands and feet gently crossed for 5 min in a silent room. The PR and B.P were measured before starting meditation practice by gently extending the left arm on the table. The subjects were instructed to do “Om” chanting for 5 min accompanied with the expert facilitator while sitting in the same position.

The subject was instructed to gently close the eyes by drooping the eyelid and was instructed to inhale gently and deeply and then while exhaling should produce sound (chant) Om with the ability to continue until further exhalation is not possible. Exhale: “Ommmmmmmm...”

The chanting was continued for 5 min concentrating deeply into the belly. While chanting, patients were alert but relaxed with total focusing on the word Om. They were instructed to hear their own sound while chanting. That helped them to remain focused and less conscious of the external environment. After chanting, patients were instructed to slowly take deep breath and open the eyes with warm smile and with the feeling of gratitude for the God for the peace they felt in meditation.

The subjects were asked to stay in same position after chanting Om. The left arm was gently extended, and the PR and B.P were recorded again by palpatory and auscultatory method.

Statistical Analysis

The data were collected, tabulated and were analyzed using SPSS software (version20). Mean \pm standard deviation of PR, systolic B.P, and diastolic B.P before and after 5 min of Om chanting were obtained, and paired *t*-test was used to compare the results.

RESULTS

As shown in Table 2, reduction of 14/05 mmHg in systolic/diastolic B.P was observed after 5 min of Om chanting. Systolic B.P dropped from 152.57 ± 11 mm of Hg to 138.27 ± 10 mm of Hg and diastolic B.P dropped from 90.8 ± 8.3 mm of Hg to 85.4 ± 6.8 mm of Hg. The PR also dropped after Om chanting and showed mean difference of 6 beats/min in just 5 min of Om chanting.

As per paired *t*-test, highly significant reduction in systolic B.P ($P < 0.001$) is observed after the chanting. At the same time, diastolic B.P and PR showed just significant results as $P < 0.05$.

DISCUSSION

In our study, the reduction of mean B.P of 14/05 mmHg is observed immediately after 5 min of Om chanting. The

Table 1: Distribution of subjects according to age and sex

| Sex | Age | Number of subjects (%) |
|----------------|-------|------------------------|
| Male (years) | 40–50 | 12 (24) |
| | 50–60 | 16 (32) |
| | Total | 28 (56) |
| Female (years) | 40–50 | 8 (16) |
| | 50–60 | 14 (28) |
| | Total | 22 (44) |

Table 2: Changes in B.P and PR before and immediately after Om chanting

| B.P | Mean \pm SD | | P |
|------------------|-------------------|------------------|--------|
| | Before meditation | After meditation | |
| Systolic (mmHg) | 152.57 \pm 11 | 138.27 \pm 10 | <0.001 |
| Diastolic (mmHg) | 90.8 \pm 8.3 | 85.4 \pm 6.8 | <0.05 |
| PR (beats/min) | 78.07 \pm 6.5 | 71.93 \pm 7.3 | <0.05 |

B.P: Blood pressure, SD: Standard deviation, PR: Pulse rate

reduction of 14 mmHg in systolic B.P is found be highly significant ($P < 0.001$) and drop in diastolic B.P of 5 mmHg and drop in PR of 6 beats after Om chanting is just significant ($P < 0.05$). This reveals that Om chanting has greater benefit in systolic HTN which could be seen in subjects with higher sympathetic activity. Parasympathetic predominance and cortico-hypothalamo-medullary inhibition help in reduction of stress induced hypertension.^[4] The drop in diastolic B.P is comparatively less which could be due to lesser effect of Om chanting on arteriolar resistance.

In a previous study by Stone and Deleo,^[2] 6 months of practice results in drop of 9/8 mmHg in mean systolic/diastolic B.P in supine position and drop of 15/10 mmHg was found in standing positions. We performed study only in sitting position so postural variations could not be discovered. In another study in the past by Barnes *et al.*^[7] found a significant reduction in mean systolic B.P the cardiovascular performance also showed improvement in meditators. We found highly significant reduction in systolic B.P and just significant reduction in diastolic B.P and PR. The drop in PR in our study could also be a sign of improved stroke volume in the subjects who practiced Om chanting.

As per Andrews *et al.*,^[1] clinically important reduction in mean B.P is defined as a decrease in excess of 10 mm of Hg in 3 months or more after treatment. We need to extend our study further for clinically relevant results. However, immediate effects of Om chanting reveal that regular chanting of Om may benefit the patients on long-term basis also.

Ather Ali *et al.*^[1] reported the importance of practicing yoga and meditation together as compared to practice of meditation alone. Yoga practice mainly affects diastolic B.P, but practice of both yoga and meditation results in greater drop in systolic B.P. In our study, subjects practiced only meditation and results have revealed the higher significant reduction in systolic B.P. Here, it can also be concluded that meditation mainly helps in reduction of systolic B.P which is due to increase stress, increased sympathetic tone of the blood vessels.

Brownstein and Dembert,^[1] significant drop in diastolic B.P was found after yoga in mild hypertensives who responded poorly to thiazides and suggested yoga as an optional treatment for mild hypertensives.

Our study supports earlier studies as we have also observed highly significant reduction in the systolic B.P and significant reduction in diastolic B.P and PR followed by Om meditation. These results may be due to the effect of Om meditation on autonomic functions which causes psychophysiological relaxation. Earlier studies reported that effective "Om" chanting spreads vibration sensation around the ears and this stimulates vagal nerve. Earlier studies reported that Om chanting deactivates limbic system. Om chanting is an

important exhalation exercise and significantly improves pulmonary functions also in healthy subjects. In all, Om chanting is a meditation technique that reduces HTN by increasing parasympathetic activity and reducing sympathetic activity. Meditation regulates the HPA axis to balance ANS and reduces cortisol secretion.^[5] All these help in reduction of stress-induced HTN.

We need to extend this study in a bigger group and follow-ups are likely to show long-term beneficial effects of Om chanting.

Hence, OM chanting can also be added as supportive therapy with drugs in mild or moderate cases of HTN. This may help in reducing dose of the drug and reduce the load of unwanted drug combinations on patient's body and pocket. Om chanting can be suggested as daily practice at least for 5 min for the better control of B.P along with regular medication.

CONCLUSION

The immediate effect of 5 min of Om chanting in uncomplicated moderate hypertensives showed statistically highly significant reduction in systolic B.P and just significant reduction in PR as well as diastolic B.P. Now to summarize, Om chanting can be used to control B.P in moderate hypertensive subjects and to manage B.P in mild hypertensives even before starting the drug therapy. It can be added to the lifestyle of subjects in the prehypertensive stage and in subjects having strong family history. In the present scenario of higher stress in routine life, 5 min Om chanting can be incorporated in the routine of school-going children and adults to reduce the overall prevalence of HTN in the country.

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