Effect of left nostril breathing in hypertensives

Anshuman Naik*, DA Biswas**, Shashikala Patel***

Abstract

Background: Hypertension, a “psychological classical silent killer” is the hallmark of various cardiovascular disorders. Hypertension would become a greater global burden in the next 15 - 20 years. Hypertension is an important and growing public health challenge worldwide. If one believes that ‘old is gold’, then yoga is quite effective and widely believed to reduce blood pressure. Some varieties of pranayama require the practitioner to inhale and exhale through one nostril selectively. When each respiratory cycle is completed through the left nostril alone, the practice is called Chandra anuloma viloma pranayama, which means a ‘heat dissipating or cooling breathing practice’.

Aims of study: The present study has been carried-out to assess the immediate effect of left nostril breathing (LNB) on BP of hypertensive patients.

Material and methods: 30 hypertensive patients who were on regular treatment took part in the study. A baseline record (which served as control) of pulse rate/min, systolic blood pressure (mmHg), diastolic blood pressure (mmHg) were recorded. They carried-out LNB for 5 minutes only and all parameters were recorded again. Student t test was used as the statistical tool to analyse the acquired data.

Results: The mean pulse rate dropped from 84.73 ± 1.89 per minute to 81.80 ± 1.84 per minute. Systolic blood pressure dropped from 144.50 ± 3.68 mmHg to 133.83 ± 3.66 mmHg. Diastolic blood pressure dropped from 100.96 ± 2.48 mmHg to 94.83 ± 2.41 mmHg.

Conclusion: This study indicates that BP and pulse rate can be decreased in a non-pharmacological way. Hence this technique can be used as a regular practice for combating the stress and strain of everyday life.

Key words: Chandra anuloma viloma pranayama, hypertension, stress.

Introduction

Hypertension, a “psychological classical silent killer” is the hallmark of various cardiovascular disorders mainly occurring due to increase in the total peripheral resistance because of several aetiological factors – genetic, obesity, glucose intolerance, high salt intake, cigarette smoking, heavy alcohol consumption, increased serum renin levels.

Due to plenty of aetiological factors, hypertension would become a greater global burden in the next 15 - 20 years. The estimated total number of people with hypertension in India and world wide are as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Year</th>
<th>2000</th>
<th>2025</th>
</tr>
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<tbody>
<tr>
<td>Worldwide</td>
<td></td>
<td>9.72 billion</td>
<td>15.6 billion</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>11.82 billion</td>
<td>21.25 billion</td>
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It is predicted that the total number of hypertensive patients would increase by about 60%, i.e., a total of 15.6 billion high blood pressure sufferers, by the year 2025. For more than 50% of all stroke deaths and about 25% of coronary heart disease deaths, in which the main cause is hypertension. Hypertension is an important and growing public health challenge worldwide. If we believe in the principle of ‘old is gold;’ then yoga is most effective and widely believed to reduce blood pressure (BP). Patanjali, the foremost exponent of yoga, described pranayama as the gradual unforced cessation of breathing. Pranayama is derived from two Sanskrit words – prana (life) and yama (control). Patanjali in his yoga sutra describes yama, niyama, asana, pranayama, pratyahara, dharana, dhyana and samadhi as the eight angas of yoga.

Amongst them, in the present materialistic world, the 3rd and 4th parts – pranayama and asana – are considered very important parts and prescribed by modern medicine too.

Some varieties of pranayama require the practitioner to inhale and exhale through one nostril selectively. When
each respiratory cycle is completed through the left nostril alone, the practice is called Chandra anuloma viloma pranayama, which means a ‘heat dissipating or cooling breathing practice’.

The present study has been carried-out to assess the immediate effect of left nostril breathing (LNB) on BP of hypertensive patients.

Material and methods

30 hypertensive patients who were on regular treatment took part in the study. A baseline record (which served as control) of pulse rate/min, systolic blood pressure (SBP in mmHg), diastolic blood pressure (DBP in mmHg) were recorded. A standard sphygmomanometer of (Diamond, India) of ISI mark was used along with microtone stethoscope to assess blood pressure. They carried-out LNB for 5 minutes only and all parameters were recorded again. Patients were asked to close their right nostril by the thumb and slowly breathe in up to maximum, through left nostril. Student t test was used as the statistical tool to analyse the acquired data. p < 0.05 was considered significant.

Table I: Different variables before and after 5 minutes of left nostril breathing (LNB)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Before (mean ± SEM)</th>
<th>After (mean ± SEM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse rate (PR/min)</td>
<td>84.73 ± 1.89</td>
<td>81.80 ± 1.84</td>
</tr>
<tr>
<td>SBP (mmHg)</td>
<td>144.50 ± 3.68</td>
<td>133.83 ± 3.66</td>
</tr>
<tr>
<td>DBP (mmHg)</td>
<td>100.96 ± 2.48</td>
<td>94.83 ± 2.41</td>
</tr>
</tbody>
</table>

*p value 0.000, p < 0.05.

Results

The mean pulse rate dropped from 84.73 ± 1.89 per minute to 81.80 ± 1.84 per minute. Systolic blood pressure dropped from 144.50 ± 3.68 mmHg to 133.83 ± 3.66 mmHg. Diastolic blood pressure dropped from 100.96 ± 2.48 mmHg to 94.83 ± 2.41 mmHg.

Discussion

Regarding optimal management of Indian hypertensive population according to CUPS (Chennai Urban Population Study), prevalence of hypertension in men (22.8%) and in women (19.7%) is still a dream by pharmacological management, because the rule of halves for hypertension states that half the people with high BP are not known, half of those known are not treated, and half of those treated are not controlled. Thus, by this rule, 1 out of 8 patients is optimally treated by pharmacological measurement. Hypertension has been reported to be generally associated with sympathetic overactivity. In our study, the mean pulse rate/min, systolic and diastolic blood pressure decreased significantly just after 5 minutes of left nostril breathing (LNB). It may be due to the fact that in our body the right and left nostrils do not function simultaneously. One of the nostrils is always more congested than the other even when the nasal passages are clean and unobstructed by mucus. In the yogic system of breathing the left nostril dominance corresponds to “ida” svara with parasympathetic activation. Hence this left nostril dominance corresponding to parasympathetic activation may be the cause for the changes seen. Nidhi Jain et al had previously shown that LNB for 15 minutes decreased SBP, DBP, and after 8 week of LNB decrease in SBP and DBP was same. Rai et al found that induced LNB produced decreased systolic, diastolic and mean blood pressures. They suggested that LNB could be used as a prophylactic means to combat rises in BP associated with everyday stress and strain of life. Telles et al have demonstrated that pranayama breathing through right nostril results in an increase in sympathetic activity, whereas left nostril breathing reduces it. LNB increased oxygen consumption by 24% (LNB practiced as 27 respiratory cycles, repeated 4 times a day for 1 month) and LNB also increased spatial memory scores by 16%.
after performing LNB for 45 minutes only6-9,10.

Conclusions

This study indicates that BP and pulse rate can be decreased in a non-pharmacological way. SBP, DBP and pulse rate decrease with short-term practice of LNB, i.e., only 5 minutes. Other studies have shown that there is no further decrease in all these parameters even after 8 weeks practice; and that practice of LNB increases spatial memory scores. Hence this technique can be used as a regular practice for combating stress and strain of everyday life and also enhancing memory scores.

References


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