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EFFECT OF CHANDRA NADI (SVARA YOGA) PRANAYAMA (LEFT NOSTRIL BREATHING) IN PATIENTS OF RAKTAGATVATA (ESSENTIAL HYPERTENSION)

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ABSTRACT:

Introduction: The present study was designed to determine effects of Chandra nadi (svara yoga) Pranayam exclusive left nostril breathing, on patients of Raktatgatvat (Essential hypertension). Breathing through right nostril represents increased sympathetic activity while left nostril breathing decreased sympathetic activity. It means these phenomena are interrelated to each other. This research work reported differential physiological and psychological effects produced by Chandra nadi pranayam (exclusive left nostril breathing) and prove immediate and sustained efficacy of this techniques in psychosomatic condition such as Raktatgatvat (essential hypertension). **Materials and methods:** 450 diagnose cases of Raktatgatvat (essential hypertension) taking standard medical management were individually trained to perform chandra nadi pranayam (left nostril breathing) by author himself for 8-10 minute and perform four times per day upto three month continuously. Systolic and diastolic blood pressure measured before and after treatment were recorded using non-invasive semi-automatic BP monitor and severity of symptom also assessed on basis of grading system. Data was analyzed by using SPSS 16.0 version software. **Results:** Chandra nadi pranayama (left nostril breathing) produced satisfactory symptomatic relief in all the symptoms of raktatgatvata (essential hypertension). Severity of all symptoms decreased in third follow up i.e.F3. Within group comparison was done by using Friedman test and found that result was statistically significant. **Discussion and conclusion:** After analyzing the data it become clear that CNP is effective non pharmacological procedure to reduce the severity of raktatgatvat (Essential hypertension. This may be due to a normalization of autonomic cardiovascular rhythms with increased vagal modulation and/or decreased sympathetic activity along with improvement in baroreflex sensitivity . There is strong relation between nasal cycle and autonomic nervous system. Breathing through right nostril represent increased sympathetic activity while left nostril breathing decreased sympathetic activity. It means these phenomenon are interrelated to each other. In our busy and stressful life the balance of nasal cycle get disturbed which leads to several ailments. Manifestation of ailments occurs due to disturbance of balance of autonomic nervous system. Further studies are required to enable a deeper understanding of the mechanisms involved as well as determine how long such a BP lowering effect persists

KEYWORDS: Chandra nadi pranayama, Essential hypertension Raktatgatvat, , Svara yoga

INTRODUCTION

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The part of the *Vedic* science which deals with understanding the function of the nasal cycle (alternate nostril breathing) is known as *Swarodaya Vijnan* (*swara* = sonorous sound produced by the airflow through the nostrils in the nasal cycle, *udaya* = functioning state, and *vijnan* = knowledge)¹.

The science of *svara yoga* (nasal cycle) that has recently caught interest of The scientists of all over the world, had been analyzed extensively by Indian *yogis* of lore. At the time of *vedic* period the *Yogis* and *Tantric* lacked the equipment available to modern science, but these *yogis* through their, self-analysis (*swadhyaya*), regular practice (*abhyasa*) and inner vision (*antar drishti*) had made extensive observations on the concept of *svara yoga*. Ancient tantric literature advises that all passive activities (*soumya karya*) should perform during left nostril (*ida / chandra swara*) is dominating.²

Physiologically *svara yoga* (alternate

nostril breathing) controlled by activity of the limbic autonomic nervous system with hypothalamus as the control centre and also upon the level of catecholamines and other neuro-hormones in the blood circulation³. This research work reported effects produced by *svara yoga Chandra nadi pranayam* (exclusive left nostril breathing). Before this research work several study have done in healthy individual and potential health benefits of *Chandra nadi Pranayam* (Left nostril unilateral breathing) have been postulated, further clinical research is required to prove the duration of effect is how long. In this research work study was planned to understand and evaluate the effect of *Chandra nadi pranayam* on psychosomatic conditions such as *Raktagat vata* (Essential hypertension)⁴.

MATERIALS AND METHODS

This study was conducted at the deptt of *Rachana Sharir* and *Kaya chikitsa* OPD of *Sir Sundarlal* Hospital at B.H.U. Varanasi. Ethical approval has been obtained by Institute of Medical sciences B.H.U. Varanasi for M.D. research work. The name of research topic was “**A critical study on *Ida, Pingala and Sushumna Nadis with their clinical significance*”** This thesis work was done to see the effects of *Svara Yoga Chandra Nadi Pranayam* on *Raktagatavata* (EHT) .

Total 50 randomly selected and diagnosed patients of *Raktagatvata* (EHT) attending the *Kaya Chikitsa* OPD run by Sir Sundarlal Hospital B.H.U Varanasi were selected for this study.

EXCLUSION CRITERIA

1. Patient with co-morbidity affecting mental or physical health
2. Patient with extreme age groups > 65yrs or < 15yrs
3. Abuse of drugs and alcohol
4. Patients, whose Systolic pressure was less than 120 mm Hg with medication.
5. Patients of secondary HT, and those with history/signs and symptoms/laboratory report suggestive of nephrologic, neurologic and ophthalmologic complications were excluded from the study.

INCLUSIVE CRITERIA

1. Patients between age group 16 – 60 years.
2. Patients diagnosed with *Raktagatavata* (essential hypertension) only.

The selected 50 patient of *Raktagatavata* (essential hypertension),

Svara Yoga Candra nadi pranayam and the relevant procedure for modifying the status of flow *Nadis* and the resultant symptomatic changes were recorded and correlated with the available concepts. Ultimately the findings of the above clinical study were correlated with the available literature in both *Ayurveda*, *Yoga*, *Tantric*, ancient & modern sciences.

Technique of *Svara Yoga Candra Nadi pranayam*

The following technique of *Svara Yoga Candra Nadi Pranayam* was advised to the selected patients. The patients were allowed to sit on *Sukhasana* or in any posture in which he/she feels comfortable then they were asked to close their right nostril with the help of cotton or simply with the right thumb after which they were asked to breath normally (forceful breathing was avoided) with their left nostril for 8- 10 minute. After this, they were prescribed with direction that they must do this breathing *Svara Yoga Candra Nadi Pranayam* four times per day for three months.

OBSERVATION AND RESULTS

Observation Table No.1 : Showing distribution of the effect of *Svara Yoga Candra Nadi Pranayam* on *shirahshool* (headache) in *Raktagata Vata* (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison test	group Friedman
		BT	F1	F2	F3		
<i>Shirahshool</i> (headache)	0(absent)	0 (0)	0(0)	0	15(30)	$\chi^2=125.75$ P< .001	
	1(mild)	3(6)	6(12)	14(28)	28(56)		
	2 (moderate)	13(26)	24(48)	31(62)	7(14)		
	3(moderate severe)	34(68)	20(40)	5(10)	0		
	4 (very severe)	0	0	0	0		

The Observation Table no.1 clearly depicts that the severity of the symptom *shirahshool* (headache) decreases with

each follow up. The initial number of cases with absence of headache was nil which 30% becomes after the 3rd follow up. The decrease in the severity of symptom is found statistically significant.

Observation Table No.2 : Showing distribution of the effect of *Svara Yoga Candra Nadi Pranayam* on *Krodhisvabhava* (short temper) in *Raktagata Vata* (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison test	group Friedman
		BT	F1	F2	F3		
<i>Krodhisvabhava</i> (short temper)	0(absent)	5(10)	5(10)	7(14)	30(60)	$\chi^2=102.60$ P< .001	
	1 (mild)	3(6)	7(14)	29(58)	13(26)		
	2 (moderate)	33(66)	31(62)	9(18)	5(10)		
	3 (moderately severe)	8(16)	7(14)	5(10)	2(4)		
	4(very severe)	1(2)	0	0	0		

Observation Table no. 2 clearly show that the severity of symptom short *Krodhisvabhava* (short temper) decreases with every follow up while this symptom was absent in 10% cases before treatment,

it became absent in 60% after 3rd follow up. The decrease in severity of symptom has been found statistically significant.(P<0.001).

Observation Table No. 3 : Showing distribution of the effect of *Svara Yoga Candra Nadi Pranayam* on *Nidranasha* (insomnia) in *Raktagata Vata* (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison test	group Friedman
		BT	F1	F2	F3		
<i>Nidranasha</i> (insomnia)	0(normal)	0 (0.00)	0(0)	8(16)	26(52)	$\chi^2=116.225$ P< .001	
	1 (mild)	8(16)	20(40)	25(50)	21(42)		
	2 (moderate)	32(64)	22(44)	15(30)	2(4)		
	3(moderately severe)	9 (18)	8(16)	2(4)	1(2)		
	4(insomnia)	1(2)	0	0	0		

The Observation Table no. 3 clearly depicts that the severity of the symptom *Nidranashaa* (insomnia) decreases with each follow up. The initial number of cases

with absence of *Nidranasha* (insomnia) was nil which becomes 52% after the 3rd follow up. The decrease in the symptom is found statistically significant

Observation Table No.4 : Showing distribution of the effect of Svara Yoga Candra Nadi Pranayam on Hridaya (palpitation) in Raktagata Vata (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within group comparison Friedman test
		BT	F1	F2	F3	
<i>Hridaya</i> (palpitation)	0 (absent)	5(10)	5(10)	8(16)	29(58)	$\chi^2=95.14$ P< .001
	1 (1-2/ day)	9(18)	25(50)	31(62)	20(40)	
	2 (3-5/ day)	31(62)	18(36)	11(22)	0(0)	
	3 (5-10/ day)	5(10)	2(4)	0	1(2)	
	4(7-10/ day)	0	0	0	0	

Observation Table no. 4 clearly signify that *Hridaya* (palpitation) symptom decreases with every follow up while this symptom was absent in 10% of cases

before treatment and it became absent in 58% of cases after 3rd follow up. The decrease in symptom has been found statistically significant (P<0.001).

Observation Table No.5: Showing distribution of the effect of Svara Yoga Candra Nadi Pranayma on Klama (fatigue) in Raktagata Vata (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within group comparison Friedman test
		BT	F1	F2	F3	
<i>Klama</i> (fatigue)	0(nil)	40(80)	40(80)	45(90)	45(90)	$\chi^2=21.66$ P< 0.001
	1(occasionally)	5(10)	6(12)	3(6)	4(8)	
	2(alternate day)	5(10)	4(8)	2(4)	1(2)	
	3(everyday)	0	0	0	0	
	4(not able to do work)	0	0	0	0	

Observation Table no. 5 signifies that statistical data of effect on symptom *Klama* (fatigue) that the subjects with nil symptoms before treatment were 80%, it

increases to 90% after 3rd follow up. The severity of symptom decreases with each follow up and the decrease in severity of symptom is statistically significant (P<0.001).

Observation Table No. 6: Showing distribution of the effect of Svava Yoga Candra Nadi Pranayam on shirolaghuta (light headness) in Raktagata Vata (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison Friedman test
		BT	F1	F2	F3	
Shirolaghuta (light headness)	0 (absent)	30(60)	30(60)	35(70)	46(92)	$\chi^2=39.25$ P<0.001
	1 (mild)	15(30)	17(32)	13(26)	3(6)	
	2 (moderate)	3(6)	2(4)	2(4)	1(2)	
	3 (moderately severe)	2(4)	1(2)	0	0	
	4 (very severe)	0	0	0	0	

Observation Table no. 6 clearly signify that *Shirolaghuta* (light headness) symptom decreased with every follow up

while this symptom was absent in 60% before treatment, it was absent in 92% after 3rd follow up. The decrease in symptom has been found statistically significant (P<.001).

Observation Table No.7: Showing distribution of the effect of Svava Yoga Candra Nadi Pranayama on Bhrama (giddiness) in Raktagata Vata (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison Friedman test
		BT	F1	F2	F3	
Bhrama (giddiness)	0 (absent)	8(16)	10(20)	15(30)	33(66)	$\chi^2=94.305$ P<0.001
	1 (mild)	10(20)	14(28)	25(50)	16(32)	
	2 (moderate)	27(54)	23(46)	9(18)	1(2)	
	3 (moderately severe)	5(10)	3(6)	1(2)	0	
	4(very severe)	0	0	0	0	

Observation Table no. 7 clearly show that *Bhrama* (giddiness) symptom decreases with every follow up while this symptom was absent in 16% of cases before

treatment, and it became absent in 66% after 3rd follow up. The decrease in severity of symptom has been found statistically significant (P<0.001).

Observation Table No. 8: Showing distribution of the effect of Svava Yoga Candra Nadi Pranayama on Raktmukhanetrata (Face or eye turn red) in Raktagata Vata (essential hypertension)

Symptom	Grade	Number and percentage of cases				Within comparison Friedman test
		BT	F1	F2	F3	
Raktmukhanetrata (Face or eye turn red)	0 (absent)	32(64)	33(66)	34(68)	46(92)	$\chi^2=31.92$ P<.001
	1 (mild)	10(20)	13(26)	15(30)	3(6)	
	2 (moderate)	8(16)	4(8)	1(2)	1(2)	
	3 (moderately severe)	0	0	0	0	
	4 (very severe)	0	0	0	0	

Observation Table no. 8 signifies that severity of *Raktmukhanetrata* (Face or eye turn red) decreases with every follow-up. Subjects with absent symptom were 64% initially which increases to 92% after 3rd follow-up. This decrease in severity of the symptom is found statistically significant.

DISCUSSION

The intra group comparison was done by Friedman test. It shows highly significant improvement of all subjective parameters. Decrease in all cardiovascular parameters relief in all the symptoms of *Raktagatavata* (essential hypertension) in our patients can be explained by changes in the autonomic balance as the sympathetic activity become lower during left nostril breathing. Mitti Mohan tested the nostril dominance with reference to the bilateral volar GSR (galvanic skin resistance) that is an indicator of sympathetic activity. He found that sympathetic activity was lower in ida swara, (left nostril breathing) followed by pingala swara (right nostril breathing) and was the maximum in the sushumna swara (bilateral nostril breathing)⁵. Backon has shown that right nostril breathing significantly increases blood glucose levels, whereas left nostril breathing lowers it⁶. L.Rai et al found that left nostril breathing produced decreased systolic, diastolic and mean blood pressures⁷. Shirley Telles et all have

shown that right nostril breathing can significantly increase the metabolism measured by the increased baseline oxygen consumption with one month of practice several times a day. They have also shown that breathing through the left nostril exclusively, repeated 4 times a day produced a significant increase in the baseline GSR suggestive of reduced sympathetic activity⁸. They suggested that the left nostril breathing could be used as a quite effective method in all symptoms of *Raktagatavata* (essential hypertension) the patient shows significant improvement in the intensity of all symptoms, this is quite clear that all the clinical symptoms are mainly due to over activity of *Pingala* (sympathetic activity). The practicing of *Svara Yoga Chandra nadi pranayama* causes significant improvement in all the symptoms of *Raktagatavata* (essential hypertension) as the *Raktagatavata* (essential hypertension) is mainly manifested due to hyper activity of *Pingala Nadi*. The registered cases shows the short term effectiveness as well as long term effect of this treatment as they started feeling improvement since 2-3 days after they started *Chandra Nadi Pranayama* also the long term affect is evident from the fact that maximum number of patient in their third follow up shows substantial improvement in all the symptoms.

SUMMARY AND CONCLUSION

The practicing of *Svara Yoga Candra Nadi Pranayam* causes significant improvement in all the symptoms of *Raktagatavata* (essential hypertension) as the *Raktagatavata* (essential hypertension) is mainly manifested due to hyper activity of *Pingala Nadi* (sympathetic activity). The registered cases shows the short term effectiveness as well as long term effect of

this treatment as they started feeling improvement since 2-3 days after they started *Svara Yoga Candra Nadi Pranayam* also the long term affect is evident from the fact that maximum number of patient in their third follow up shows substantial improvement in all the symptoms.

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REFERENCES

1. Block RA, Arnott DP, Quigley B, Lynch WC. Unilateral nostril breathing influences lateralised cognitive performance. *Brain Cognit* 1989; 9:181-90
2. Bhavanani AB. Swarodaya Vigjan- A Scientific Study of the Nasal Cycle. *Yoga Mimamsa*. 2007;39:32-8.
3. Deshmukh VD. Limbic autonomic arousal: Its physiological classification and review of the literature. *Clin Electroencephalogr*. 1991;22:46-60. [PubMed]
4. Immediate effect of chandra nadi pranayama (left unilateral forced nostril breathing) on cardiovascular parameters in hypertensive patients (Ananda Balayogi Bhavanani, Madanmohan,1 and Zeena Sanjay2)
5. Mitti Mohan S. Reversal of nostril dominance by posture. *J Indian Med Association* 1991; 89:88-91
6. Backon J. Changes in blood glucose levels induced by differential forced nostril breathing, a technique which affects brain hemisphericity and autonomic activity. *Med Sci Res* 1988; 16: 1197-99

7. Rai L et al. Effect of induced left nostril breathing on body functions in adult human males. *Indian J Physiol Pharmacol* 1983(Supplement 1); 5: 74-5

8. Shirley Telles, R Nagaratna & HR Nagendra. Breathing through a particular nostril can alter metabolism and autonomic activities. *Indian J Physiol Pharmacol* 1994; 38: 133-7.

9. Joseph CN, Porta C, Casucci G, Casiraghi N, Maffeis M, Rossi M, et al. Slow breathing improves arterial baroreflex sensitivity and decreases blood pressure in essential hypertension. *Hypertension*. 2005;46:714–8. [PubMed]

10. Telles S, Nagaratna R, Nagendra HR. Breathing through a particular nostril can alter metabolism and autonomic activities. *Indian J Physiol Pharmacol*. 1994;38:133–7. [PubMed]

