WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 6.805
Volume 6, Issue 1, 1236-1242. Research Article ISSN 2277– 7105

EFFECT OF YOGIC PRACTICES ON PREGENANCY INDUCED HYPERTENSION – A CLINICAL STUDY

Agarwal Ram Kumar*[1], Nathani Neeru[2] and Dwivedi Manjari[3]

[1]Deptt of Swasthavritta, Govt. Ayu., College, Jabalpur.

[2]Deptt of Swasthavritta and Yoga, FoA, BHU.

[3]Deptt. of Prasuti Tantra, FoA, BHU.

Article Received on
19 Nov. 2016,
Revised on 09 Dec. 2016,
Accepted on 29 Dec. 2016

DOI: 10.20959/wjpr20171-7703

***Corresponding Author**
Dr. Neeru Nathani
Asso. Prof, Swasthavritta & Yoga Department, FoA, B.H.U.

ABSTRACT

Pregnancy may induce hypertension in some normotensive women or aggravate already existing hypertension Hypertensive disorders complicating pregnancy are common and form one of the deadly triad along with hemorrhage and infection, which result in a large number of maternal deaths. Asanas and Pranayama are inexpensive, non-pharmacological techniques for hypertensives without any side effects and the patient can practice them easily at any stage of life, with little training. Regular observance of yogic practices may reduce the dose requirement of drugs or helps to withdraw the pharmacological therapies in the patients of hypertension. In this clinical study 10 pregnant women of control group were subjected to standard drug therapy and 10 cases of trial group were subjected to selected yogic practices along with standard drug therapy. They were followed up three times, at the interval of 15 days each. The selected yogic practices including asana and pranayama revealed significant additive effect along with standard drug therapy, on subjective symptoms and Systolic and Diastolic Blood Pressure.

KEYWORDS: Hypertension, Asana, Pranayama, Standard drug therapy.

INTRODUCTION

Hypertension is a chronic disorder, posing a major public health challenge worldwide. Hypertension may also be called as silent killer, as it does not causes symptoms until it leads to complications. Pregnancy may induce hypertension in normotensive women or aggravate already existing hypertension. Generalized oedema, proteinuria or both, often accompany the pregnancy induced hypertension. Convulsions may also develop in association with

hypertension, especially if hypertension is ignored. Hypertensive disorders complicating pregnancy are common and form one of the deadly triad along with hemorrhage and infection, which result in a large number of maternal deaths. Hypertension diseases of pregnancy appear to be the largest single cause of maternal death (Zuspan FP, 1984). Not only maternal deaths, but it is the leading cause of perinatal mortality and morbidity according to WHO (MacGillivray, 1983). Predisposing factors are race (blacks more prone), socio economic status (middle income group), Genetic Predisposing, Twin pregnancy (25.3 %) , Hydatidiform mole, Climate (cool and humid day), Smoking (incidence is half), Diet and trace elements (calcium deficiency, magnesium deficiency, zinc deficiency).

Pregnancy induced hypertension: Diagnosis is made when B.P. is more than 140/90mmHg or an increase of 30mmHg systolic or 15mmHg diastolic over baseline values on at least two occasion 6 hours apart.

Previous researchers made their best efforts to simulate hypertension with the diseases like Raktagata vata, Siragata vata, Vyana-bala, Avritta vata etc described in texts. Naming of an ailment, rather than cure, is not must. As stated by Charak (Ch.Su. 18/44-47). In the present study we have hypothesized the disease as “Kaphavritta-Siragata-Vyana vayu”, which comes under Avritta vata roga. Along with sharirika doshas, manasika dosha(mainly Raja) may also have additive effect on hypertension.

Yoga is ancient Indian paradigm for harmonizing the body-mind complex. Asana and pranayama, the important parts of yoga, improves physical, mental and spiritual health. For the hypertensives, asanas and pranayama are inexpensive, non-pharmacological techniques and patient can do it easily at any stage of pregnancy, with little training. Regular observance of yogic practices may reduce the dose requirement of drugs or helps to withdraw the pharmacological therapies. Due to safety and efficacy of yogic practices, these can be incorporated in the routine treatment of Pregnancy Induced Hypertension.

In spite of various benefits conferred by Yoga, comparatively very few scientific studies have been carried out to find out the exact mode of action of yogic practices in human body. Different yogasana and pranayama may have selective action on specific organs and tissue to improve their functional status. Aiming on the above said knowledge, the present study was conducted to assess the effect of yogic practices (selected asanas and pranayam) on Pregnancy Induced Hypertension.

MATERIAL AND METHODS

Study has been conducted in the department of Swasthavritta & Yoga with collaboration of Department of Prasuti Tantra, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

Research Design

Research design selected for the present study was intra-group comparison of BT & AT and inter-group comparison between group A and B of hypertension cases and Pregnancy Induced Hypertension cases, separately. It was an open perspective and randomized clinical trial.

Criteria for selection of sample

20 patients of pregnancy Induced Hypertension satisfying the criteria of diagnosis for PIH were selected randomly from the OPD of Prasuti Tantra, SSH, IMS, BHU, Varanasi after a written consent. 20 patients of PIH were divided into two groups A and B having 10 patients each. Group A (n=10) control group and Group B (n=10) trial group.

Diagnostic criteria

The diagnosis of PIH has been made according to history, clinical features, blood investigations, radiological investigations etc. Patients were routinely investigated to rule out other diseases. Pregnancy induced hypertension was defined as BP≥ 140/90mmHg or an increase of at least 30mmHg in the systolic and 15mmHg in the diastolic pressure noted twice at least six hours

Assessment Criteria

The assessment of the effect of treatment was based on both subjective and objective parameters.

A) Subjective Parameters

Subjective parameters include the clinical features of the patients of PIH. Clinical assessment of symptoms and severity was done in terms of gradation of score at the initial stage and subsequent follow ups.

B) Objective Parameters: Systolic and Diastolic Blood pressure.

Method of Study

Group A (control group) = Standard drug therapy

Group B (Trial group) = Yogic practices along with standard drug therapy

(Standard drug therapy includes Methyldopa for PIH in different doses according to the severity of disease)

Method of Yogic Practices

Patients were advised for yogic practices twice a day with empty stomach. Before the practice of Asana and pranayama they were advised to do preparatory practice of joint movements for 10 minutes.

Schedule of yogic practices per sitting

I) **Asana**

Titliasana = 3 rounds of 20 movements each

Marjariasana = 3 rounds

Vajarasana = 15 minutes

Shavasana = 15 minutes

II) **Pranayama**

Anuloma-viloma = 3 rounds of 20 inspiration & expiration

Bhramari = 3 rounds of 10 inspiration & expiration

Patients were studied up to three follow-ups at the interval of 15 days each. Final assessment of results was done on 20 patients of PIH.

STATISTICAL METHODS

All data were collected in tabulated form and shown in graphic representation also. The intra-group comparison was done to see the effect of treatment using χ^2 test for symptoms and paired t test for other investigations. The effect of yogic practices was seen by inter-group comparison between group A and B using the unpaired t test. Probability score was fixed at 5% level. Standard statistical formulas were applied to obtain results. Whereas, expected frequency came less than 5, Chi- square had been calculated after suitably pooling the row and/or columns.

OBSERVATIONS AND RESULTS: The objectives of the present study were to find out the role of yogic practices on pregnancy induced hypertension. The observations are as follows:

Table A: Inter-group comparison of subjective parameters in PIH cases

Symptoms	χ^2 value (Intergroup comparison between groups A & B)			
	BT		AT	
Headache	$\chi^2 = 0$	P > 0.05	$\chi^2 = 10.44$	P < 0.001
Palpitation	$\chi^2 = 1.41$	P > 0.05	$\chi^2 = 15.44$	P < 0.001
Easy fatigability	$\chi^2 = 0$	P > 0.05	$\chi^2 = 10.22$	P < 0.001
Oedema	$\chi^2 = 0$	P > 0.05	$\chi^2 = 2.0$	P < 0.05
Irritability	$\chi^2 = 0$	P > 0.05	$\chi^2 = 14.29$	P < 0.001
Vertigo	$\chi^2 = 1.07$	P > 0.05	$\chi^2 = 0.56$	P < 0.05
Insomnia	$\chi^2 = 0.56$	P > 0.05	$\chi^2 = 7.27$	P < 0.001
Constipation	$\chi^2 = 0$	P > 0.05	$\chi^2 = 1.57$	P < 0.05
Tingling sensation	$\chi^2 = 0$	P > 0.05	$\chi^2 = 0$	P < 0.05
Burning sensation	$\chi^2 = 1.88$	P > 0.05	$\chi^2 = 0$	P < 0.05
Oliguria	$\chi^2 = 0$	P > 0.05	$\chi^2 = 2.38$	P < 0.05
Anorexia	$\chi^2 = 0$	P > 0.05	$\chi^2 = 5.95$	P < 0.01
Nausea	$\chi^2 = 0.01$	P > 0.05	$\chi^2 = 3.53$	P > 0.05
Drug dose	$\chi^2 = 0.24$	P > 0.05	$\chi^2 = 1.82$	P > 0.05

On intra-group comparison (between BT and AT), the effect of therapy was significant in both groups A and B. There was significant improvement in all the symptoms of both groups. On inter-group comparison between group A and B, the effect of therapy in group B was found Highly significant in case of anorexia, headache, palpitation, easy fatigability, irritability and insomnia. Statistically similar results found in both groups in case of oedema, vertigo, constipation, tingling sensation, burning sensation, oliguria and nausea in PIH patients. These observations signify the additive effect of yogic practices with standard drug therapy for the symptomatic relief in the patients of PIH.

Table B: Intergroup comparison of objective parameters in PIH cases

Variable	t value on difference of BT & AT (unpaired t test	
Systolic BP	t = 10.90	P < 0.001
Diastolic BP	t = 5.29	P < 0.001

On Intra-group comparison (between BT and AT), the effect of therapy was significant with respect to systolic and diastolic blood pressure. These values were reduced significantly after therapeutic intervention in both groups. Hypertension, a major risk factor for various cardiovascular disorders, could be controlled by regular practices of Yoga. On inter-group comparison between A and B the effect of therapy was found better in group B as compared to group A. It shows the additive effect of selected asana and pranayama to reduce PIH.

During the evaluation of therapeutic response we have selected only those cases of PIH taking methyldopa, with different doses according to severity of disease. A significant reduction in the dose of antihypertensive drugs was observed with this combined therapeutic measure of drug therapy along with selected yogic practices.

CONCLUSION

Yoga, the ancient Indian science has been developed for mental transformation and personality development and not as a health science. However, it has been observed by recent studies that different yogic practices are beneficial for the treatment of various disorders. It was observed that asanas and pranayama selected for this study have definite additive effect with standard drug therapy in control of PIH, as shown by the subjective and objective assessments. During the period of trial no side effects were observed. Thus due to efficacy and safety of yogic practices, these should be incorporated with routine treatment of Pregnancy Induced Hypertension (PIH).

REFERENCES

1. Gheranda Samhita, by Dr. Chamanlal Gautam, Sanskrita Sansthan, Bareli, Reprint Ed., 2003.
2. Hatha Yoga Pradipika, by Swami Muktibodhananda, Yoga publication Trust, Munger, Bihar, 1st Ed. 1985.
3. Harrison's Principles of Internal Medicine, Edited by Kasper et al, Mc Graw-Hill companies, Inc. 16th Ed., 2005.
4. Ishwadi Nau Upanishad, by Harikrishnadas Goyandaka, Gita press, Gorakhapur, 1st Ed., 1953.
5. Madhava Nidanam English translation, critical introduction and appendix by Prof. K.R. Shrikantha Murthy, Chaukhambha orientalia, Varanasi, 3rd Ed., 2000.
6. Patanjali yoga Pradipa, commentary by Swami Omanand Tirth, 24th Reprint, 2004. . s
7. Srimadbhagabhadgita, by Shri Shrimad A.C. Bhaktivedanta swami Prabhupada, Bhaktivedanta Book Trust, Mumbai, 2nd Ed., 1990
8. Susruta Samhita, English translation, Bhishagaratna Kunjalal Kaviratna, Chaukhambha Sanskrit series office, Varanasi, 5th Ed., 1999.
9. Text book of Medical Physiology, by Guyton and Hall, Narcourt Brace & company Asia Pt. Ltd, 9th Ed., 1998.

10. Vedic Index, by Macdonell A.A. and Keith A.B., Hindi Translatation by Rai Ram Kumar, Chaukhamba Vidyabhawan, Varanasi, 1962.
11. Yoganaka, Gita press, Gorakhapur, 10th Ed., 2007
12. Datey KK et al. Management of hypertension by Shavasana, Angiology, 1969; 20: 325.
13. Udupa KN, Singh RH, Shettiwar RM: Studies on physiological endocrine and metabolic response to the practices of 'Yoga' in young normal volunteers. Jour. Res. Ind. Med., 1971; 6(3): 345-353.
14. Patel C; Yogic management of hypertension. Lancet, 1973; 2.
15. Udupa KN, Singh RH, Shettiwar RM, Singh MB: Studies on the physiological effect of the yogic relaxation postures, Shavasana, J. Res. Ind. Med. Yoga and Homeo, 1978; 13(11): 141.
16. Prokodi K, Subramaniam S, Kanika JS: Effects or yoga and meditation in health and disease. Proc. First National Conference on Yoga, Science and Society, Banaras Hindu University, 1979; 104-106.
17. Rajalakshmi: Yoga therapy in diabetes, Bronchial Asthma and hypertension. Mimeograph of the Indian Institute of Yoga and Allied Sciences, Tirupati, 1980.