

# PRANAYAMA – A BOON FOR ANTENATAL MOTHER WITH PREGNANCY INDUCED HYPERTENSION

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**ABSTRACT:** *Pranayama is a philosophy and a way of life where art and science meet. It is the study of functioning of body, mind and intellect process of attaining freedom. A woman's body is biologically created for certain specific functions like adapting with growing fetus. It is the art of knowing oneself and knowing to the eternal truth. A high risk pregnancy is one with a significant probability for a poor maternal or fetal outcome. The practice of pranayama in such crucial condition makes the journey of pregnancy very easier one. During pregnancy induced hypertension (PIH) breathing exercises do miracles, to avert from pregnancy induced hypertension preferring pranayama makes a boon to the mother for enhancing her health in day to day life.*

*In the current study, we present a practical method to determine the effect of pranayama for pregnancy induced hypertension. It is based on the data gathered from the mothers with PIH by structured interview questionnaire and COHEN perceived stress scale. In our previous study, we have analyzed the feasibility of this method.*

**Key Words:** *Pregnancy Induced Hypertension, Pranayama, Stress, Fetal outcome*

## Introduction

Pregnancy is a period where physiological and psychological changes occur rapidly in the body, adapt to growing fetus and perinatal outcome. PIH is defined as an increasing of blood pressure more than 140/90 mmHg that occurs after 20<sup>th</sup> week of conception<sup>1</sup>. It is one of the major conditions that occur during pregnancy and it contributes equally to the maternal mortality, morbidity and peri-natal mortality. The clinical features are increased blood pressure, sudden weight gain, puffiness of face and cheeks, and proteinuria<sup>2</sup>. The treatment of PIH is to reduce maternal and fetal complications from the advancement of disease. If the hypertension is uncontrolled it is so dangerous and that will affect the mother as well as the fetus. It may cause IUGR, and silent fetal demise. Physiology of PIH is due to increasing premature aging of the placenta on the maternal surface and there is an obstruction of lumen that leads to atherosclerosis of spiral arteries, this ends in placental changes, which are responsible for fetal demise<sup>3</sup>. In kidneys, there is reduced blood flow and glomerular infiltration due to the impairment of tubular reabsorption. It may cause damage to the vascular walls of endothelium, due to the thrombosis of arterioles hemorrhage occurs and the liver gets necrosis.

Management - The mother must be placed in bed preferably in left lateral position to reduce the effects of vena caval compression. The mother and fetal condition should be monitored from the day of admission. Rest should be continued until the features subside. The rest may induce increased urination and improves placental perfusion and reduction of blood pressure. Salt is strictly restricted. Fluids are not restricted. The mother should intake 100g of protein daily.<sup>4</sup> Calcium supplementation helps to reduce serum level among gestational hypertension mothers. If blood pressure is not controlled the mother is supposed to take Tab. Nifedipine, calcium channel blockers 10-20 mg twice a day. Sedatives like diazepam 5mg should be given before to the bed. Laxative like milk of magnesium 4 teaspoons to be given for preventing constipation. There may be a chance of increasing hypoxia during antenatal and intranatal period<sup>5</sup>. The mother may be prone to get placental abruption and pre-rupture of membrane before the term and sometimes intrauterine death may also occur.

## PRANAYAMA – PREGNANCY INDUCED HYPERTENSION

The word "Pranayama" is derived from Sanskrit that originates to expressing of meditative postures that was discovered by the pranayama sutras and it came in the period of 3000BC<sup>6</sup>. The pranayama gives impact of sympathovagal equilibrium between the sympathetic over activity and vagal withdrawal contributes to the genesis of pregnancy induced hypertension. The pranayama breathing practice in pregnancy that decreases the complications of maternal stress, personal risks and improves pregnancy outcomes<sup>7</sup>.

In order to prevent the complications the women should follow regular practice of all these pranayama breathing exercise which brings the elevated blood pressure into normal level. If the pranayama in supine position it may give good effect of venacaval compression and also to increasing renal blood flow, improves the placental perfusion and reduces blood pressure<sup>8</sup>. A Study was examined the effect of Yoga on clinical and psychological outcomes. In a 40-days yoga practices at the medical sciences, ambulatory subjects with pregnancy induced hypertension not having significant complications (n=35). At the end of the study, there was a reduction of body mass index (BMI), psychological outcome and improvement in total general wellbeing respectively (26.514 +/- 3.355 to 25.771 +/- 3.40; P < 0.001), (6.20 +/- 3.72 to 4.29 +/- 4.46; P < 0.05) and (48.6 +/- 11.13 to 52.66 +/- 12.87; P < 0.05). The study findings reveals that CAM is effective for reducing clinical and psychological outcomes in subjects with pregnancy induced hypertension. The practice of pranayama during pregnancy induced hypertension condition makes the journey of pregnancy a very easier one<sup>9</sup>.

Pranayama has been effectively used to reduce blood pressure among mothers with PIH. In pranayama is known to alternate the output and restoring the balance between the sympathetic and parasympathetic autonomic nervous system. Since the sympathetic over activity has been claimed to be one of the factors in aetiopathogenesis of pranayama has been reported to stimulate parasympathetic nervous system. By using of pranayama there is an adjuvant therapeutic measure to prevent pregnancy induced hypertension from the further complications.

Pranayama breathing interacts the nervous system affecting metabolism and autonomic functions. Hyperpolarization currents propagated through neural and non-neural tissue which synchronizes neural elements in the heart, lungs, limbic system and cortex. The voluntary slow deep breathing resets the autonomic nervous system, through stretch induced inhibitory signals. Stretching of lung tissue produces inhibitory signals during inspiration. Actions of slowly adapting stretch receptors and hyperpolarization current are known to synchronize neural elements, leading to the modulation of the nervous system and decreased metabolic activity indicative of the parasympathetic state.

Pranayama should done regularly for 15 minutes daily has a definite role in successful maintenance of pregnancy and in preventing the complications of pregnancy especially early pregnancy, pre-term delivery, eclampsia and insomnia. The pranayama is the full cosmic, three distinct vibratory sounds of OM, AH and MM. Thus, it is possible that pranayama employed early in pregnancy and prevent the pregnancy induced hypertension and may be useful in averting the maternal and fetal mortality associated with it<sup>10</sup>.

## Conclusion

Pregnancy induced hypertension is the commonly occurring during pregnancy. Day by day the incidence rate was increasing and also morbidity and mortality. In 20<sup>th</sup> century our life style and dietary pattern was changed. To avert from pregnancy induced hypertension preferring pranayama make boon to the mother for enhancing health in day to day life.

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