



A Narrative Review on Garbhajanya Vishamayata: The Pregnancy Induced Hypertension

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Abstract: Gestation, also known as Pregnancy, is the period during which one or more progeny develops inside a woman's womb. It is a crucial stage for a woman as several physiological changes occur during this period in her body. Now a day's, Pregnancy induced hypertension (PIH) is becoming the primary cause of maternal and prenatal mortality and morbidity. The prevalence of PIH is 2-8% of all pregnancies. In India, PIH incidence is higher in primiparae than in multipara. Therefore, finding all possible measures to prevent this disease is essential. In Ayurveda, Acharya Harit explains these conditions under *Garbhiniyadhi*. *Garbhajanya Vishamayata* is a condition in which hypertension develops after 20 weeks of gestation. Therefore, it is a primary concern during Pregnancy and can be prevented by early detection and appropriate treatment. Our Objective is to gain knowledge of ayurvedic aspects of Pregnancy induced hypertension, its prevention and treatment. This review is emphasized the ayurvedic aspects of Pregnancy induced hypertension. Detailed information was gathered by studying related classical texts of Ayurveda, research articles and websites. Collected data was later compiled, analyzed and discussed. This review concluded that by following Antenatal care (*manumatic paricharya*), Dos and don'ts (*Pathyapathya*), this disease can be prevented and treated effectively with safe motherhood and a healthy child.

Keywords: *Garbhajanya Vishamayata*, Pregnancy Induced Hypertension, PIH, *Masanumasic Paricharya*, *Pathayapathayin* PIH

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I. INTRODUCTION

Gestation, also known as Pregnancy, is the period in which one or more progeny develops inside a woman's womb. Pregnancy-induced hypertension (PIH) is one of the most critical medical conditions during gestation and postpartum. It originates directly from a gravid state, including gestational hypertension, pre-eclampsia and eclampsia. The causes may include poor maternal nutrition, poor anti-natal care, poor health awareness, Lack related to Pregnancy and women's health, and poor reproductive education. ¹.PIH usually develops in the second or third trimester of Pregnancy, marked by high blood pressure and high level of protein in the previously healthy woman's urine².Common complications include maternal morbidity, mortality and intrauterine fetal growth restrictions. The prevalence is about 2-8% of all pregnancies, and the incident has continued to increase worldwide³.Risk factors include nulliparity, multifetal Pregnancy, previous history of pre-eclampsia, obesity, diabetes, smoking etc., but the connection between pre-eclampsia and its risk factor is still poorly understood⁴. Though there is no direct reference regarding PIH in Ayurveda, this ailment affects the functions of various systems that can be met in different disease conditions of Ayurveda⁵. Hence the Aim &Objectiveof this review is to focus on ayurvedic aspects of Pregnancy induced hypertension, its prevention and treatment. PIH can be correlated with *GarbhajanyaVishamayata*, which can be identified as a pathology in the manifestation of different diseases. In Ayurveda, it is mentioned that it is essential to know the characteristics of the disease with the help of *Dosha*, *Dushya* and *Samprapti* to begin the management. As *Vatadosha* is responsible for the average circulation of blood in the body due to its *Chalaguna*, vitiated *Vata* can be considered the main factor responsible for this condition, especially *vyanvayu*. This can happen directly due to *Vataprakopakaaharvi* intake or by

average.⁶ So it becomes our primary concern to comprehend the PIH from an ayurveda perspective. If *garbhini* is followed by *garbhini*, then most pregnancy diseases can be prevented. A detailed description of this is also found in various *Samhitas*. This condition can be understood by studying some concepts of Ayurveda, such as *StrotoDushti*, *Shonita Dushti*, *Aam* and *Agni*. Considering oneself, regimens during the antenatal period and synchronization with nature can attain strong resistance to such conditions, which has been highlighted across Ayurveda's classical scriptures. Considering all these details, an attempt has been made to discuss the prevalence, risk factors, and prognosis of PIH with its ayurvedic aspects.

2. MATERIALS AND METHODS

This review article emphasizes prevalence, risk factors, prognosis and Ayurvedic remedies for protecting PIH. First, classical texts of Ayurveda were studied in detail, and information was gathered along with related research articles and websites. Collected data was later compiled, analyzed and discussed for a comprehensive understanding of effective pharmacological action to think about utilizing it.⁷.

1.1 Observation and Result

"Ayurveda essentially illustrates various remedies and protective care through *Dinacharya*, *Ritucharya*. In Ayurveda, multiple regimens are explained for pre-conceptional, Antenatal, and post-delivery periods. Improving health in regards to PIH has been emphasized in several ways in classical texts. Though PIH is not directly described in Ayurveda, some similar symptoms as a complication have been described. This can be termed *GarbhajanyaVishamayata*. Details are summarized in table no. 1,2,3 and 4.

Table 1: Classification of Pregnancy Induced Hypertension⁸

Severity	Range
mild	Systolic BP 140-149 and Diastolic BP 90-99 mmHg
moderate	Systolic BP 150-159 and Diastolic BP 100-109 mmHg
severe	Systolic BP ≥ 160 and Diastolic BP ≥ 110 mmHg

Table 2: Etiopathogenesis for manifestation of PIH⁹

As per modern medicine	As per Ayurveda
Nulliparity	<i>Kaphaprakopa</i> (vitiation of <i>Kapha dosha</i>)
Obesity	<i>Shopha</i> (Oedema)
Diabetes mellitus	<i>Madhumeha</i> (DM)
Placental perfusion	<i>Doshadushti</i> , <i>Dhatudushti</i> (vitiation of <i>dosha and dhatu</i>)
Oxidative stress	<i>Pandu</i> (anaemia)
Dietary deficiencies or excess.	<i>Viruddhaaahara</i> (incompatible/antagonistic food), <i>Abhihiyandiahara</i> , <i>Lavanaahara</i> (excessive intake of salt)

Table 3: Sampraptighatak (Pathogenesis) of Pregnancy Induced Hypertension¹⁰

Dosha (bodily humour)	Vatapradhantridosha
Dushya (tissue)	Rasa, Rakta
Agni (digestive and metabolism strength)	Jatharagni, Dhatavaagnimandya
Strotas (body channel)	Rasa, Rakta
Strotodushtiprakar (type of affliction of body channel)	Sanga
Udhbhavsth (site of origin of disease)	AmashayaPakshyasa
Vyaktasthana (the place where symptoms appear)	Sarvasharir
Rogmarga (site of pathogenesis)	BahyamadhyamAvayavaHridayadhamani
Sadhyasadhya (prognosis)	Kricchasadhya

Table 4: Sigh and symptoms of PIH		
Sr. No.	As per Modern Medicine	As per Ayurveda
1.	Abnormal weight gain.	Paadshotha(Pedal Oedema)
2.	Rise of BP.	Akshepa (Convulsions)
3.	Diminished urinary output	Mutraaplata (oliguria)
4.	Oedema	Shoph (Oedema)
5.	Eye symptoms(Changes in vision, blurred vision, light sensitivity)	Vamana (Vomiting)
6.	Nausea, Vomiting	Atisar (Diarrhea)
7.	Severe headache	Sangyanash (Coma)

Table 5: Investigations & Screening test for the diagnosis of PIH ¹¹		
Sr. No.	Investigations	Screening tests
1.	CBC (HB%, PVC, Platelet count etc.)	Doppler ultrasound – at 24 weeks or less to get information regarding impaired blood flow to the fetus
2.	Urine test for protein urea	Diastolic notch presence- to get information regarding uteroplacental circulation.
3.	Renal function test for blood urea, ser. Creatinine etc	End Diastolic frequency – to determine the placental insufficiency.
4.	Uric acid	Rollover test – between 28 and 32 weeks
5.	Liver function test	Average mean arterial pressure – to determine the risk of pre-eclampsia or PIH.
6.	Coagulation test	-
7.	Ophthalmoscopic examination	-

Table 6: Treatment and preventive measures for the diagnosis of PIH: An Ayurveda perspective ¹²		
Sr.No.	Name of drug	General Dose & duration
1.	Gokshuradi guggul	250 mg. Twice a day or as advised by the physician.
2.	PunarnavaMandur	125 mg Twice a day or as advised by the physician.
3.	Yshtimadhuchurna + GuduchiSatwa	Ten central mornings with milk a day or as advised by the physician.
4.	Balajirakadikashay	15ml Twice a day or as advised by the physician.
5.	Punarnavakashay	15 ml Twice a day or as advised by the physician.
6.	Punarnavarishta	10 ml Twice a day or as advised by the physician. Avoid in Summer and the hot season.
7.	SwarnamaliniVasanta rasa	125 mg Twice a day or as advised by the physician with milk.
8.	Kalyanakghruta	10 ml once a day or as advised by the physician with milk.
9.	Pipallyadighruta	10 ml before food Twice a day or as advised by the physician.
10.	Garbhiniparicharya& Yoga sanaas	Yogasana Marjariasana, Konasana, Veerbhadrasana, Trikonasana, Badhakonasana, Shavasana, Bhramari pranayama ¹³

3. DISCUSSION

Garbhajanya Vishamayata(PIH) is grouped as a hypertensive disease in the late second and third trimesters of Pregnancy. Increased blood pressure, oedema and raised protein urea are its core symptoms.^{xiv} Other symptoms may include abnormal weight gain, changes in vision, blurred vision, light sensitivity, headache, nausea and vomiting. This is a poorly understood disease with a broad range of indications and severity. Most cases remain unnoticed and may lead to morbidity and mortality or severe complications, which are uncommon but include eclampsia, stroke, severe bleeding from the placenta after birth, HELLP syndrome, premature birth, and stillbirth. There are scattered references regarding these symptoms in Ayurveda. All these symptoms are classified under *Garbhiniyadhi*, i.e. the illness during Pregnancy. There is a separate chapter named *Antarvartinichikitsa Upadhyay* in *Khil than* of Kashyap samhita, which deals with the management of shopha in the sixth month of Pregnancy.^{xv,xvi} Acharya Sushruta also explained the use of *Gokshur Siddha yavagu*(gruel prepared from *Gokshura*) in the sixth month of gestation^{xvii}. All this highlighted that the pathology is caused by *dushti* of (vitiated) *Vata dosha*, specially *Vyan Vayu* and *Rakta dhatu*^{xviii}. By studying the *nidan* of *rasa* and *rakstavahastrotas**dushti*, most of the factors match with PIH^{xix}. When *siragatVata Prokop* (vitiation of *siragataVata*) occurs, it causes the diseases like *shopha*(swelling), loss of elasticity and thickening of blood vessels, *spandana* (palpitations) etc., which can be related to cardiovascular system^{xx}. Ayurveda has illustrated the *pathyapathy* (use of a healthy diet and lifestyle), *garbhiniyapacharya*(month-wise regimens), *garbhasthapakdravya* (substance beneficial for the maintenance of Pregnancy) and some treatments for the better fetal outcome. The main purpose is to provide normal growth of fetus and mother, uncomplicated Pregnancy and normal delivery with a healthy child.^{xxi} Medicine with *raktashodhak*, *anulomaka*, *hrudya*, *medya*, *mutral*, and *vatashamak* properties should be used in such conditions. Medications which contain *Gokshur*(*Tribulus Terrestris* L.) and *Punarnava*(*Boerhaaviadiffusa*) possess *rasayana*, *raktajanan* and *mutrala* action and induced diuresis. These include a large quantity of potassium and alkaloids, which nourishes the *dhatu*s, cause *Vatasamshaman* and increase the Osmo regulation of plasma. This drug also possesses antioxidant and anti-inflammatory properties, which are helpful in the breakdown of

the pathogenesis of PIH.^{xxii,xxiii,xxiv}. *Guduchi* (*Tinospora cordifolia*) and *Arjuna* (*Terminalia arjuna*) possess cardioprotective, antioxidant, hypotensive and diuretic activity. Drugs like *Sarpagandha* (*Rauvolfia serpentina*) and *Jatamansi*(*Nardostachysjatamansi*) possess hypotensive and diuretic activities. *Yashtimadhu* (*Glycyrrhiza glabra*) possess antioxidant and anti-inflammatory activity^{xxv}. *Pippali*(*Piper longum*) possess bioavailability enhancement properties which promote fast absorption of the nutrients^{xxvi}. It is antioxidant^{xxvii}, anti-inflammatory^{xxviii} and also possess vasodilator activity^{xxix}. These medicines help in limiting the complications of this disease. However, non-responsive cases of PIH should not be considered for the same treatment. Such conditions are explained under *arista Lakshana*, *upadrava*, *vyapada* and *asadhya* *Lakshana* of *mudhagarbha*.^{xxx} As the main responsible factors for PIH are vitiated *Vata* and *rakta*, the drugs which possess anti-atherosclerotic, vasodilator, cardiotonic, hypotensive, antioxidant and diuretic properties should be advised^{xxxi}. Apart from the use of medicine, Ayurveda explains such as healthy and quality diet, restrictions of salty food, yoga, meditation, taking adequate rest, elevating the foot, avoid caffeine, alcohol, and nicotine. Practising *garbhiniyapacharya*, *yoga* and *pranayam* can improve sleep, relieve low back pain, reduce headache, nausea, and vomiting, and lower the risk of preterm labour and PIH.

4. CONCLUSION

Aggravation of all three *doshas*, predominantly *Vatadosha*, *dushita rasa* and *rakta*, vitiated *rasavaha*, and *Rautavaara strotasa*, are mainly responsible for the manifestation of PIH. Ayurveda treatment improves the health of the mother and fetus and relieves the symptoms. Regimens like pre-conceptional, antenatal and post-delivery care are well explained in the literature of Ayurveda for the prevention of PIH. Hence the early diagnosis of the condition at its initial stages can prevent complication and helps in better management of the disease. With this conception, it can be concluded that with ayurvedic medicine and proposed regimens, this condition of PIH can be treatable with support to healthy fetal growth. But further clinical studies are required to establish appropriate and exact results.

5. AUTHORS CONTRIBUTION STATEMENT

Pargaonkar AS, Jibkate B, and Deshpande M. contributed to the research's design and implementation, the analysis of the results, and the writing of the manuscript.

CONFLICT OF INTEREST

Conflict of interest declared none.

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