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CLINICAL APPROACH TO GARBHAJANYA VISHAMAYATA (TOXAEMIA DURING PREGNANCY): A CONCEPTUAL STUDY

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ABSTRACT

Pregnancy is a unique, exiting and often joyous time in a women's life, as it highlights the woman's amazing creative and nurturing powers while providing bridge to the future. Garbhajanya vishamayata (Pregnancy induced hypertension) is the development of new hypertension in a pregnant women after 20 weeks of gestation. It is a major medical problem encountered during pregnancy. It is preventable by early detection & appropriate treatment & possibly by prevention of disease itself. So, it becomes our responsibility to prevent these disorders through *Ayurvedic* approach by ensuring safe motherhood & healthy child & to decrease maternal & fetal mortality. On looking to the symptoms present in this disorder with an *Ayurvedic* approach, we find most of the symptoms are because of *Vata & Pitta* vitiation. So drugs which are having *Vata-Pitta shamana, Hridya, Shothahara, Garbhasthapaka, Medhya, Balya & Brimhana* will be beneficial in treating PIH (*Garbhajanya vishamayata)*. As a preventive care, *Pathyapathya* during Antenatal period is described under the heading of *Masanumasika paricharya* & what should be avoided is mentioned under the heading of *Garbhopaghatakara bhava's*. All these regimen's were sicerely followed at that time.

KEYWORDS: Pregnancy, Garbhajanya Vishamayata, PIH, Ayurveda.

INTRODUCTION

Garbhajanya vishamayata is the major medical problem encountered in pregnancy. where it is associated with hypertension and It is a sign of an underlying pathology which may be pre-existing or appears for the first time during pregnancy and it remains an important cause of maternal and fetal morbidity and mortality.[1] It complicates almost 10% of all pregnancies around the world. A report "Global Statistics –PREGNANCY INDUCED HYPERTENSION" estimated that Global prevalence of pregnancy induced hypertension among women is 13%.

In Asia & Africa, nearly one tenth of all maternal deaths are associated with hypertensive disorders of pregnancy.

It is one of the major cause of death among women in their reproductive age group. Pregnancy induced hypertension is seen in approximately **10-20%** of all pregnant women in India, according to ICMR studies. Pregnancies complicated by hypertension are associated with increased risk of adverse fetal, neonatal and maternal outcomes, In maternal, it includes preterm birth, acute renal & hepatic failure, antepartum haemorrhage, postpartum haemorrhage and maternal death. In fetal & neonatal it includes intrauterine growth restriction (IUGR), perinatal death.

Classification of Hypertensive Disorders By Nhbpep (2000).

S. No	Disorder	Definition
1.	Gestational Hypertension	BP > 140/90mmHg for the first time in pregnancy after 20 weeks, without proteinuria.
2.	Pre-eclampsia	Gestational hypertension with proteinuria.
3.	Eclampsia	Women with pre-eclampsia complicated with convulsions & or coma.
4.	Chronic hypertension	Known hypertension before pregnancy or hypertension diagnosed first time before 20 weeks of pregnancy.
5.	Superimposed pre-eclampsia or eclampsia	Occurance of new onset of proteinuria in women with chronic hypertension.
6.	Chronic hypertension with super imposed Pre-eclampsia & eclampsia.	**The common causes of ch.hypertension:** (a) Essential hypertension. (b) Chronic renal disease (reno vascular). (c) Coarctation of aorta. (d) Endocrine disorders (diabetes mellitus, pheochromocytoma, thyrotoxicosis). (e) Connective tissue diseases (lupus erythematosus). **The criteria for diagnosis of super imposed pre-eclampsia:** (i) New onset of proteinuria.i.e; >0.5gm/24hour specimen. (ii) Aggravation of hypertension. (iii) Thrombocytopenia. (iv) Raised liver enzymes.

❖ **Pregnancy Induced Hypertension:** The term "pregnancy induced hypertension (PIH)" is defined as the hypertension that develops as a direct result of the 'Gravid state'.

- It includes

(i) Gestational hypertension
(ii) Pre-eclampsia and
(iii) Eclampsia

(I)Gestational Hypertension: According to the NHBPEP & ACOG, A sustained rise of blood pressure to 140/90mmHg or more on atleast two occasions 4 or more hours apart beyond 20th week of pregnancy or during the first 24 hours after delivery without significant proteinuria in a previously normotensive woman is called Gestational Hypertension.

- BP levels return to normal within 3 months of postpartum.
- **Toxaemia during pregnancy-Pre eclampsia:** *Garbhajanya vishamayata* - An outdated medical term for pre-eclampsia is toxemia of pregnancy, a term that originated in the mistaken belief that the condition was caused by toxins.

(II) What is pre-eclampsia?

- Pre-eclampsia is a multi system disorder of unknown etiology characterised by development of hypertension to the extent of 140/90mmHg or more with proteinuia after the 20th week in a previously normotensive & non-proteinuric woman.
- Some amount of edema is common.
- The pre-eclampsia features may appear even before the 20th week as in cases of hydatiform mole.

- **Diagnostic criteria**

1) Hypertension
2) Proteinuria
3) Oedema

- **Calculation based on Mean Arterial Pressure(MAP)**

$$\textbf{MAP=}\ \frac{\text{Systolic pressure} + (\text{diastolic pressure} \times 2)}{3}$$

- A rise of 20mmHg of MAP over the previous reading, or when the MAP is 105mmHg or more should be considered as significant.
- The rise of BP should be evident at least on 2 occasions at least 4 or more hours apart.

- **Risk Factors**

1) Primigravida
2) Family history
3) Placental abnormalities
4) Obesity
5) Pre-existing vascular diasease
6) New paternity
7) Thrombophilias

Etio-Pathogenesis And Its Contributary Factors[3]

- The underlying basic pathology is

"Endothelial Dysfuction & Intense Vasospasm".

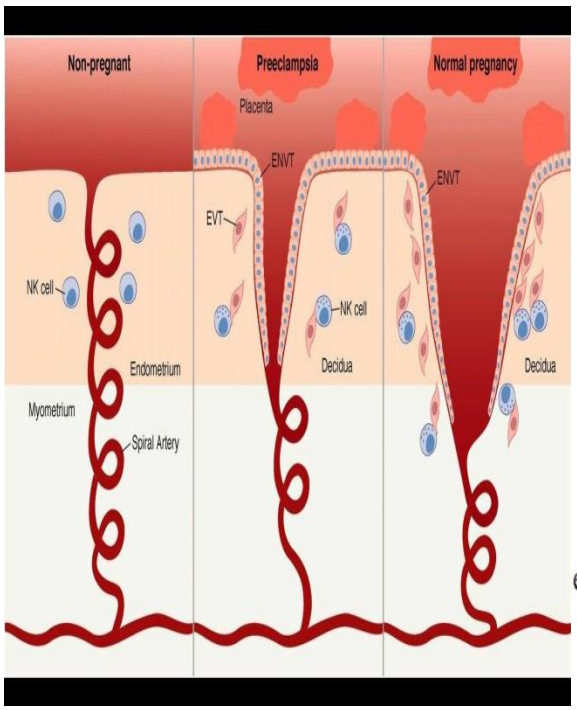
- Affecting almost all the blood vessels, particularly those of Uterus, Placental bed, Kidney & Brain.
- The responsible agent for endothelial dysfunction & vasospasm, still has not been isolated precisely, but itseems Certain to be Humoral in origin.

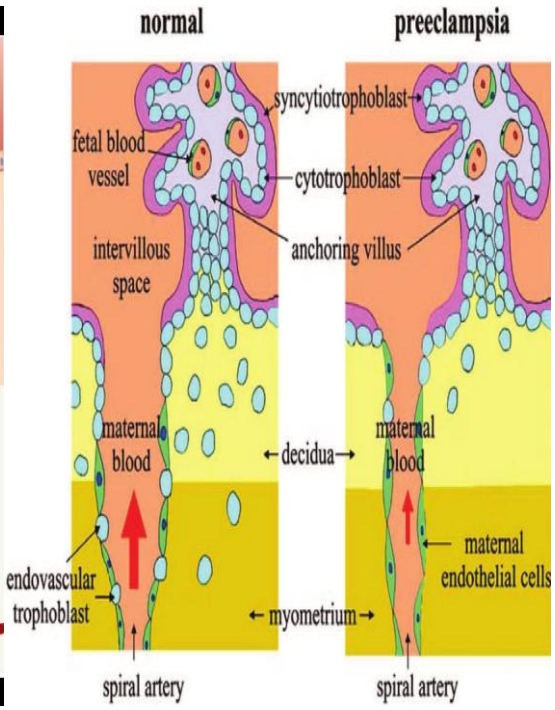
The following are the considerations

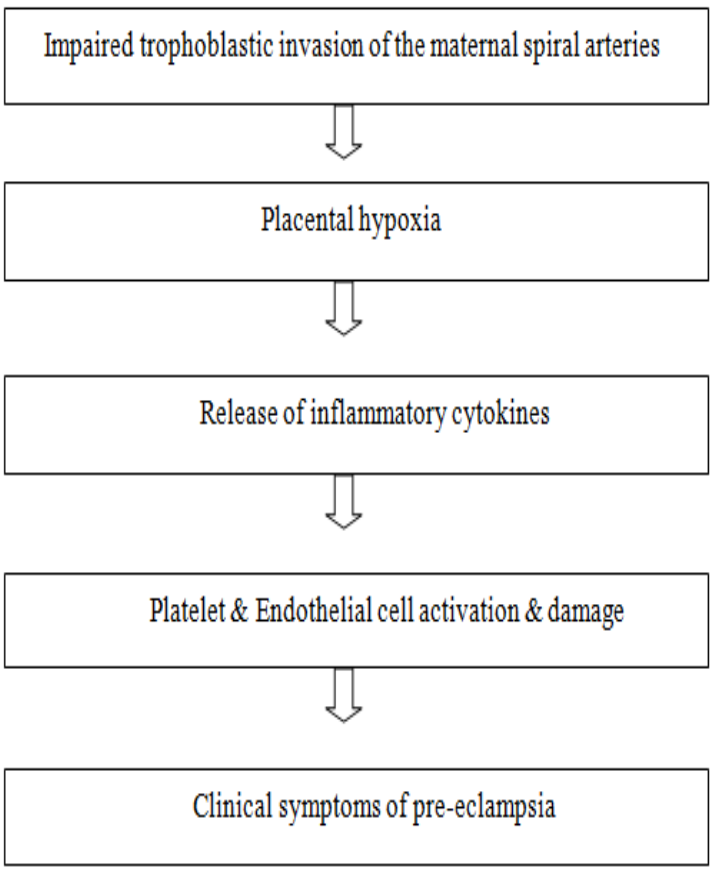
1) Increased circulating pressor substances.
2) Incresed sensitivity of the vascular system to normally circulating pressure substances.

Responsible Factors

1) Failure of trophoblastic invasion (Abnormal Placentation).
2) Vasular endothelial damage.
3) Inflammatory mediators (cytokines).
4) Immunological intolerance between maternal & fetal tissues.
5) Coagulation abnormalities.
6) Increased oxygen free radicles.
7) Genetic predisposition.
8) Dietary deficiency or excess.







Pathophysiology
Pathological changes in different organs
Uteroplacental bed: Premature aging of the placenta. areas of occasional acute red infarcts & white infarcts on the maternal surface of palcenta.
Villi: Syncitial degeneration.
Kidney: Glomerular endotheliosis.
Blood vessels: There is intense vasospasm.
Liver: Periportal haemorrhagic necrosis.
HELLP syndrome: Haemolysis(H), Elevated Liver Enzymes (EL), Low Platelet Count (LP).
Brain: Posterior reversible encephalopathy syndrome involving the parietal & occipital lobes.
Heart: Sub-endothelial haemorrhages
Lungs: There is evidence of oedema or bronchopneumonia.
Stomach: Haemorrhagic gastritis.

Clinical Types
The clinical classification of pre-eclampsia is arbitary & principally dependent on the level of BP for management purpose. But PROTEINURIA is more significant than BP to predict fetal outcome.

Mild
Mainly 2 types: Severe

Clinical Features
Pre-eclampsia usually occurs in Primigravidae (70%).
Pre-eclampsia is principally a syndrome of signs & when symptoms appear, it is usually late.

Signs
- Abnormal weight gain.
- Rise of BP.
- Oedema
- Pulmonary oedema
- Abdominal examination reveal evidences of placental insufficiency like scanty liquor or growth retardation of the fetus.

Thus, the manifestation of pre-eclampsia usually appear in the following order. i.e;
Rapid gain in weight visible oedema & hypertension
Proteinuria
Mild **Symptoms**
Alarming symptoms
Mild: Pre-eclampsia oedema.

Alarming Symptoms
Headache
Disturbed sleep
Diminished urinary output
Epigastric pain
Eye symptoms

Complications: The complications are more likely to occur if the patients are left untreated & uncared for.

Immediate
1) Maternal
2) Fetal Remote

Prognosis: Depends on the period of gestation, severity of disease & response to treatment.
Maternal mortality & perinatal mortality.

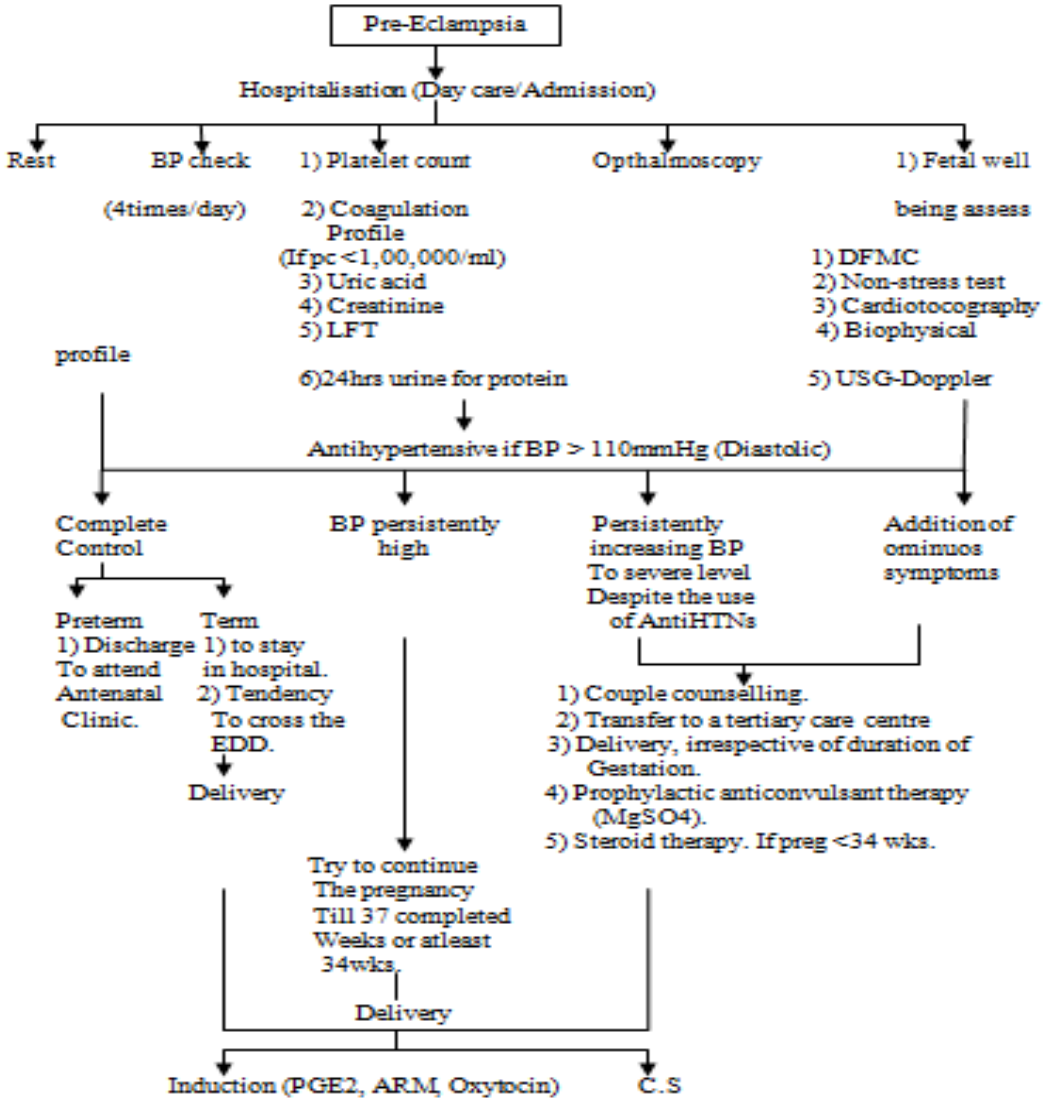
Investigations
Urine routiene & microscopy :for proteinuria.
Blood values – CBC-Hb%, PCV, Platelet count,

RFT-Blood urea, Serum creatinine, Uric acid, LFT,
Coagulation test-PT/APTT
Opthalmoscopic examination.
Antenatal fetal monitoring.

❖ **Screening tests for prediction & prevention of pre-eclampsia**
1. Doppler ultrasound
2. Presence of diastolic notch
3. Absence of end diastolic frequencies
4. Average mean arterial pressure (MAP)
5. Fetal DNA
6. Roll over test

Prophylactic measures for prevention of pre-eclampsia
Regular antenatal check up
Antithrombotic agents
Heparin or low molecular weight
Calcium supplementation
Antioxidants
Balanced diet.

Management of pre-eclampsia



Ayurveda Vivechana

Garbhajanya Vishmayata

- Though there is no direct reference regarding hypertension during pregnancy in Ayurvedic classics. This pathology develops as a direct result of "Gravid state" & affecting the functioning of various systems that can be encountered in different disease conditions of Ayurveda.[4]
- Garbhajanya vishamayata rather than a disease entity, moreover, it is identified as a pathology involved in the manifestation of different diseases.
- A few scattered references when put together give the idea about this entity. *Garbhajanya vishamayata* can be understood with the concept of following criteria's:

Concept of AGNI
Concept of AMA
Concept of SROTO DUSHTI
Concept of SHONITA DUSHTI
Concept of SIRAGATA VATA

❖ **Concept of Pih Wrt Shonitha Dushti**

प्रदुष्टबहुतीक्ष्णोष्णैर्मद्यैरन्यैश्च तद्विधैः|
तथाऽतिलवणक्षारैरम्लैः कटुभिरेव च||५||
दध्यम्लमस्तुसुक्तानां सुरासौवीरकस्य च||७||
विरुद्धानामुपक्लिन्नपूतीनां भक्षणेन च|
भुक्त्वा दिवा प्रस्वपतां द्रवस्निग्धगुरूणि च||८||
अत्यादानं तथा क्रोधं भजतां चातपानलौ|
छर्दिवेगप्रतीघातात् काले चानवसेचनात्||९||
श्रमाभिघातसन्तापैरजीर्णाध्यशनैस्तथा|
शरत्कालस्वभावाच्च शोणितं सम्प्रदुष्यति||१०|

Symptoms of Shonitha dusti are Shiro ruk, Shrama, Krodhaprachuratha, Shiro brhama, Klama, tamasaatidarshan, Kampa, Akshi raga, Raktha meha.[5]

❖ **Concept Of Pih Wrt Srotas Involved**

Rasavaha srotas

गुरुशीतमतिस्निग्धमतिमात्रं समश्नताम्|
रसवाहीनिदुष्यन्ति चिन्त्यानां चातिचिन्तनात्||१३||

Raktavaha srotas

विदाहीन्यन्नपानानि स्निग्धोष्णानि द्रवाणि च|
रक्तवाहीनि दुष्यन्ति भजतां चातपानलौ||१४||

So by looking at the nidanas of both rasa and raktavaha srotas, most of the causative factors matches with that of hypertension.

Both rasa and rakta flows in the same srotas after the process of pachana.[6]

Concept of Pih Wrt Siragata Vata

शरीरं मन्दरुक्शोफं शुष्यति स्पन्दते तथा|
सुप्तास्तन्व्यो महत्यो वा सिरा वाते सिरागते||३६||

Siragata vata is described under vatavyadhi. When there is vata prokopa in siras, it causes many diseases related cardiovascular system.

Lakshanas: Mandaruk, Shopha, Shusyathi, Spandathi, loss of elasticity, thinning or thickening of blood vessels.[7]

Predisposing Factors From Ayurvedic Point Of View

Acharya Charaka has mentioned that,[8]
shukra shonita prakriti,
Kala-Garbhashaya prakriti, leads to constitution
Matura Ahara Vihara prakriti, of the fetus.
Mahabhuta Vikara prakriti
Any *vikriti* in these factors leads to disease in pregnant state.

❖ ***Nidana***

Garbha Aharaja Viharaja Manasika
Atilavana ahara Vegadharana Krodha
Kshara sevana Prajagarana Chinta
Atisnigdha ahara Diwaswapna Shoka
Adhyashana
Vishamashana
Asatmya ahara

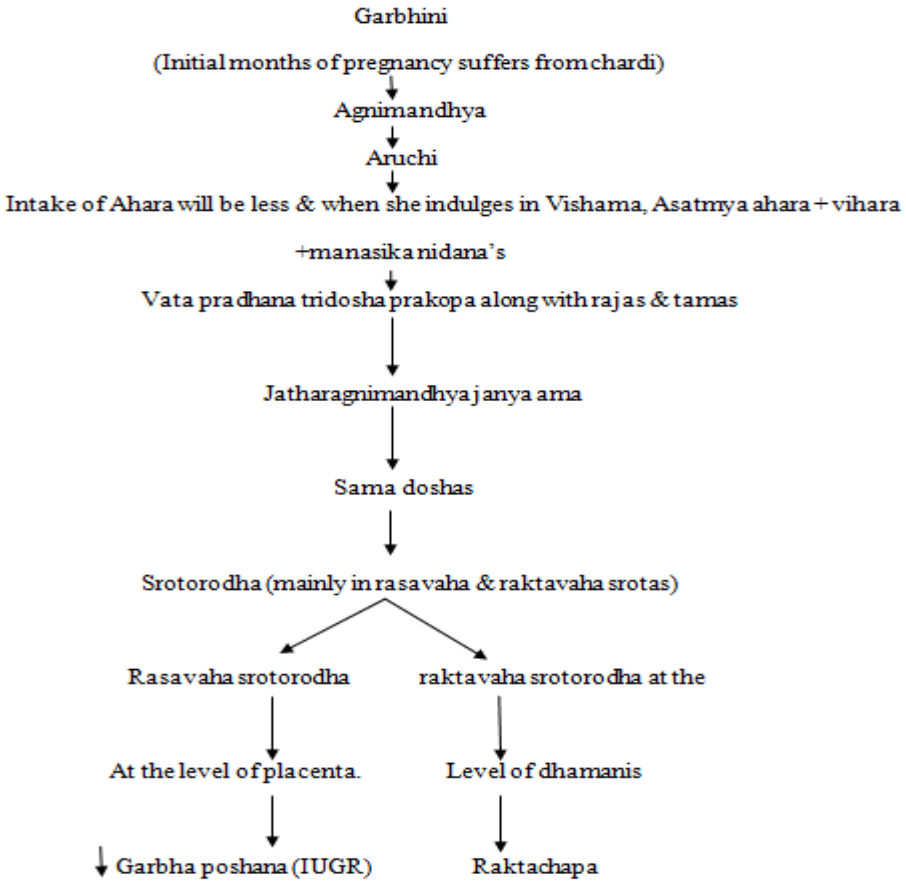
❖ **Anushanghika Lakshana's**

- Vamana
- Atisara
- Mutralpata

❖ **Mukhya lakshana's (cardinal features)[9]**

- Shopha as a garbhini upadrava.
- Akshepa
- Moorcha Asadhya lakshanas of mudhagarbha.

Samprapti



❖ **Samprapti Ghataka**

✓ Dosha - Vata pradhana Tridosha
✓ Dushya - Rasa, Rakta
✓ Srotas - Rasavaha, Raktavaha
✓ Sroto dushti - Sangha
✓ Agni - Jatharagni & Dhatvagni mandya
✓ Udbhavasthana - Amashaya
✓ Vyaktasthana - Sarva shareera
✓ Adhishtana - Garbhashaya & Hrudaya
✓ Rogamarga - Abhyantara
✓ Sadhya asadhyata - Yapya

❖ **Chikitsa**

The management is purely based on symptomatic, the drugs which are having tridoshahara properties, hrdhya, shothahara, garbhasthapaka, agnideepaka pachaka, balya & brmhaniya are helpful in garbhajanya vishamayata. Nidana parivarjana Chikitsa Shamana line of treatment.

➢ **Some of the Shamana Aushadhi's** (which are commonly used in opd are):

1. Gokshuraadi guggulu
2. Gokshuradi choorna
3. Punarnava mandura
4. yashtimadhu choorna+yashtimadhu choorna+guduchi satva

➢ **kashaya**

1. Balajeerakadi kashaya
2. Punarnavadi kashaya
3. Punarnavarishta

➢ **Rasaushadhi's**

1. Swarnamalini vasanta rasa
2. Prabhakara vati

➢ **Grtha**

1. Pippalyadi ghrta
2. Kalyanaka ghrta
3. Mahapaishachaka ghrta
4. Panchagavya ghrta

Garbhini paricharya as pathya apathya

Garbhini paricharya comprises of Masanumasik Pathya (month wise dietary regimen), Garbhopaghatakar Bhavas (activities and substances which are harmful to fetus) and Garbhasthapak Dravyas (substances beneficial for maintenance of pregnancy). The main intend behind advicing Garbhini Paricharya is Paripurnatya (provide proper growth of the fetus and mother), Anupaghata (uncomplicated pregnancy), Sukhaprasava (for normal healthy delivery and healthy child of desired qualities and longevity).[10]

DISCUSSION

1. Safe Motherhood is an essential factor for all women. Maternal mortality rate is an important

Indicator for monitoring the utilization of Maternal and child health services.

2. Based on the above statement intervention during pregnancy which includes detection of pregnancy induced hypertension may improve Maternal & Fetal outcomes.
3. Pathyapathya during Antenatal period is described under the heading of Masanumasika paricharya & what should be avoided is mentioned under the heading of Garbhopaghatakara bhava's. All these regimen's were sicerely followed at that time. These are efficient in preventing PIH in the cases having mild degree of abnormal placentation & are result of faulty life style.
4. So only the cases having severe degree of abnormal placentation or in which women indulges herself in faulty life style manifests at that time and that could be the reason that cardinal symptoms of PIH are described under headings like Arishta lakshanas, Upadravas, Vyapat, Asadhya lakshanas of Mudhagarbha.

CONCLUSION

- PIH manifests by the aggravation of all doshas with predominance of Vata dosha. Manasika doshas Rajas and Tamas. Dushyas involved will be Rasa, raktha. Srotas will be Rasavaha, Rakthavaha are involved in the pathogenesis of garbhajanya vishamayata. Hence it can be concluded that it is an Vata pradhanja Tridosha condition.
- There are various regimens for Pre-conceptional, Antenatal & post delivery period in samhita is for the purpose of prevention of PIH.
- Identification of condition in an initial stages can prevent the complications and for better management.

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