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## AN AYURVEDIC APPROCH IN MANAGEMENT OF PRE –ECLAMPSIA

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**Abstract:** Pre- eclampsia is called disease of theories because over decades of research, numerous causes have been proposed but none of them has been proved. It may lead to eclampsia, a maternal life threatening convulsive disorder. Many times it becomes indication for termination of pregnancy. Treatment available in modern medicine for pre-eclampsia is not satisfactory and has side effects too. So to avoid side effects, *Ayurvedic* medicines like mixture of *punarnava, gokshu and, jatanmansi* should be administered in cases of pre-eclampsia. These drugs act with their different properties (*Guna* and *Karma*) on basic causative factors of disease and lowers its classic triad i.e. hypertension, proteinurea and edema or both. Therefore, it may help in prevention of eclapmsia. So these drugs should be administered in mild pre-eclampsia under close monitoring for hypertenstion , oedema and proteinurea.

**Key words :** *Punarnava, Gokshur, Jatamansi*, Pre-eclampsia.

### Introduction:

Considerable number of cases of pre-eclampsia are seen in clinics due to lack of poor maternal nutrition and anti natal care. Lack of women's health awareness and poor reproductive education are also important causes. Pre-eclampsia includes evidence of so called classic triad i.e. hypertension, proteinurea and/or oedema after 20 weeks of gestation. If systolic blood

pressure increases by at least 30 mmHg or that of diastolic by 15 mmHg i.e. 140/90 mm of Hg is sufficient for the diagnosis of pre-eclampsia. Oedema is diagnosed as clinically evidence of swelling over legs, abdomen and face. Proteinurea is defined as concentration of protein 0.1 gm/lit or more in at least two random urine specimens collected six hours apart or 0.3 gm in 24 hours

collection. There is no place of domiciliary treatment in established manifestation of pre-eclampsia. The mentioned drug therapy should be given in uncomplicated or mild pre-eclampsia. There is no curative treatment of severe pre-eclampsia in modern medicine too. The definitive treatment of it is termination of pregnancy. Treatment modalities for pre-eclampsia according to modern medicine include mainly anti-hypertensives, sedatives, diuretics, anti-thrombotic agents along with rest and salt restricted diet. These modalities are somewhat beneficial for mother but not for the fetus. Anti hypertensive drugs have limited role in controlling pathology of disease. Diuretics cause electrolyte imbalance and harm to fetus by diminishing placental perfusion. Anti thrombotic agents increase the bleeding tendency and may cause PPH if patient goes in labour. So to continue the pregnancy without affecting maternal prognosis until the fetus becomes sufficiently matured enough to survive ex utero, some harmless combination of *Ayurved* drugs should be used alone or along with these anti-hypertensives (if

BP is more than 140/90 mm of Hg).This *Ayurvedic* combination may improve maternal prognosis without affecting fetal growth and help the disease not to get advanced.

## Discussion on Literature Review<sup>[1]</sup>

### Incidence

14-20% in primi-gravida

5.7-7.3% in multi-gravida

Incidence increases in multiple pregnancies and with history of pre-eclampsia in previous pregnancies.

### Patho- Physiology:

In pre-eclampsia, maternal vascular response to placentation is inadequate. This defective vascular response is due to inhibition of endovascular trophoblast migration which normally occurs from about gestational age 6 weeks onwards. These pathological changes causes decreased utero-placental blood flow. Biopsy finding from pre-eclamptic fetal bed show atherosclerotic changes. The endothelial injury ranged from swelling to complete erosion resulting in reduction of lumen.

**Hypertension:** In pre eclampsia there is gradual increase in BP from

II<sup>nd</sup> to III<sup>rd</sup> trimester. Systolic BP is elevated by 30 mm of Hg, while diastolic pressure is by 15 mm of Hg (not more than 150/100). This hypertension is mostly from renal origin, because of compression of inferior vena cava and renal artery due to pressure of gravid uterus. Thus renal plasma flow is diminished and glomerular filtration rate is decreased resulting in the excessive rennin secretion which activates angiotensin II. It causes vasoconstriction resulting in hypertension.

**Oedema:** Obstruction to venous blood flow from lower body is responsible for oedema due to venous stasis and leads to oligouria, excessive rennin secretion converted into angiotensin. Decreased GFR is also responsible for increased aldosteron release to cause sodium and water retention leading to edema.

**Proteinuria:** Due to low renal plasma flow and spasm of the afferent glomerular arterioles, there is anoxic damage to the endothelium of the glomerular tuft. Endothelial cells swell up and their capillary permeability gets increased resulting in increased

leakage of protein. Tubular re-absorption is simultaneously depressed. Therefore, proteins get excreted in urine.

#### **Ayurved literature review:**

Diseases of pregnant woman due to fetus are called as '*Garbhopdrava*' in *Ayurveda*. *Garbhini shotha* (oedema) is one of the *garbhopdrava* mentioned in *Kashyapa Samhita*. Oedema of pregnancy may be of different origin. *Ayurveda* has described '*Garbhotpidan*'<sup>[2]</sup> as a causative factor of *shoph* (oedema) of pregnancy. Though direct description of pre-eclampsia is not mentioned in *Ayurveda*, but its clinical and pathological similarity can be correlated with the condition *garbhini shotha* which is *garbhopdrava*.

Oedema of pregnancy is termed as *garbhini shotha* and is described in *kashyap samhita*. It has been also described that *kleda* from foetal body is transmitted to maternal *kleda*. This *kleda* is responsible for development of edema in mother. Causative factors of pathology in pregnancy induced hypertension and proteinuria is same. This triad is *kapha vataj* in nature. *Lavan, abhishyandi ahar*, sluggishness

and day time sleep are the causative factors for *kapha prakopa*. Anemia, poor nutrition, exhaustion and debility due to other diseases are responsible for *vat prakopa*. All these factors have been seen in the pathology of pre eclampsia.

**Ayurvedic Drug review:**<sup>[3],[4]</sup>In ayurveda texts herbal and mineral materials are available as drugs. These drugs have been described according to their properties called *guna* and activity called *karma*. Pharmacokinetics of these drugs is called as *karma*.

***Punarnava quatha*** is recommended by *kashyap samhita*<sup>[5]</sup> in *garbhini shotha*. Its diuretic property is attributed to large amount of potassium and presence of alkaloid punarnavin. It is *rasayana* and *raktavardhak* too. These properties helps to increase hemoglobin and to reduce edema. *Punarnava* is *vishagnha* (anti toxic) and *kledahara*. Its content hypoxanthine-9, L-arabinofuranoside lowers the level of uric acid which results in neutralization and excretion of metabolic substances responsible for toxemia .It contain amino acids like alanine, arginine which are helpful in prevention of complications of pre-

eclampsia like Intra Uterine Growth Retardation and oligohydramnios.

***Gokshur*** has *mutra*( diuretic) ,*rasayan* (rejuvenating), *balya* (strengthening), *dipan* (appetizer) properties and is recommended in *shotha* ( edema). *Sushruta* <sup>[6]</sup> described it for month wise remedies for pregnancy called *masanumasik yoga* during sixth and seventh month. *Gokshura* induces diuresis due to its large potassium content and alkaloids. It helps to relieve the symptoms by *vat shaman* and nourishing the *dhatu*s with increased osmo regulation of plasma .

***Jatamansi*** is cardio tonic as *punarnava*, increasing number of cardiac systole. This property is beneficial to overcome excessive demand of circulation due to increased plasma volume in third trimester of pregnancy. It is hepato protective by its *tikta rasa*, which regularize the liver function and helps to control serum alkaline phosphates .Its cardio tonic property helps to improve renal perfusion due to improved circulation and spasm of afferent glomerular arterioles. Hence it prevents anoxic damage to the endothelium of

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glomerular tuft and reduces proteinuria. *Jatamansi* is sedative , memory enhancer and anti stress agent which is useful to reduce hypertension. It has anti oxidative property which is beneficial for

prevention of IUGR .Being a neuro protective drug it helps to reduce symptoms like giddiness, headache and insomnia. *Jatamansi* also reduces *kleda* and is diuretic .

**Table.1: Description of drugs as per *Guna Karma*.**

Sr no	Drug particulars	<i>Gokshura</i>	<i>Punarnava</i>	<i>Jatamansi</i>
1	<b>Latin name</b>	Tribulus terresteris	Boerrhavia Diffusa	Nordostachys Jatamansi
2	<b>Family</b>	Zygophyllaceae	???????	Valirianaceae
3	<b>Useful part</b>	Fruit	Root	Root
4	<b>Rasa</b>	<i>Madhura</i>	<i>Katu, tikta, kashay</i>	<i>Tikta, kashay Madhur</i>
5	<b>Virya</b>	<i>Madhura</i>	<i>Usnha</i>	<i>Sheet</i>
6	<b>vipaka</b>	<i>Sheet</i>	<i>Katu</i>	<i>Madhura</i>
7	<b>Guna</b>	<i>Guru, Snigdha</i>	<i>Ruksha, Ushna, Laghu</i>	<i>Laghu, Snigdha</i>
8	<b>Karma</b>	<i>Mutral, vrishya, Brahan, dipan, Rasayan</i>	<i>Shophnashini, rechak, rasayan, mutral, vishaghna, kushtaghna</i>	<i>Sandnyasthapan Bhutaghna</i>
9	<b>Chem. composition</b>	Kaemferol, Alkaloids	Quinolizidine alkaloid	Ocacin, ursolic acid, oleanolic acid
10	<b>Active ingredient</b>	Tribuloside	Punarnavin Hypoxanthine, aminoacids	Nordosinediol
11	<b>Doshgnhata</b>	<i>Khaphkar Vat pttaghna</i>	<i>Vat pitta kara kaphaghna</i>	<i>Vat pitta shamak,</i>

### Proposed treatment plan for pre eclampsia:

Considering the pathology of pre eclampsia ,we can use *quatha* ( decoction) prepared from 5gm

*punarnava* and 5gm *gokshur churna*.

This *quatha* in dose of 40 ml should be administered with 2 gm *churna* of *Jatamansi* orally, twice in a day, in cases of blood pressure up to 140/90

mmHg. It also can be used with anti hypertensive drugs for cases having blood pressure above this level. Patient has to be hospitalized for all routine precautions and monitoring and the *quatha* remedy should be used for a period of 15 days to 60 days as per requirement. Treatment can be stopped after reliving the symptoms. Non responding cases of severe pre- eclampsia should not be considered for this treatment. Apart from mentioned medicine routine iron, calcium and protein supplements should be given for their extra demand in pregnancy. Healthy and quality diet, and lifestyle modification should be strictly advised to these cases. Restriction of salty food, pickle, tobacco and meat of aqueous animals is useful. Use of *Yoga*, meditation, complete rest on left lateral side are at most important. At least two hour sleep in day and eight hour sleep in night is important. She should be free from all types of excitements, travelling, long standing, continuous sitting and factors which aggravate blood pressure. Consumption of milk, eggs, meat, fruits, vegetables like spinach,

cauliflower, tomato, peas, peanut, germinated gram seeds, sprouts, carrots is beneficial.

### Conclusion and Summary

Pre eclampsia can be treated and managed by *Ayurvedic* medicines and concept of *garbhini paricharya* in early stage. The mentioned medicines may play an important role in subsiding the symptoms of pre eclampsia without side effects on foetus. Modern medicines acts symptomatically and unable to break down the pathology of disease. These modern drugs also do not have any positive effects on fetal growth. Symptoms of pre eclampsia aggravates significantly after holding or omitting the modern medicines. On the other hand *Ayurvedic* drugs improves general health of mother and lowers the symptoms. It helps to arrest the disease to get advanced and also supports fetal growth. Hence with this concept we can conclude that the combined use of *gokshura*, *punarnava* and *jatamansi* in the form of *quatha* and *churna* preparation can treat pre eclampsia with support to fetal growth.

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