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Perspective of Ayurveda on use of medicinal plants to avoid possible risk in Garbhini”

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Abstract: Prevention is better than cure’ is the basic concept of Ayurveda. Curing a diseased person and redefining healthy status, is the primary goal of a physician. Pregnancy is an important phase in women’s life. Health of the pregnant women has a major role in reducing adverse pregnancy outcomes. Ayurveda is the science of life; which helps to provide proper health with the help of some rules and principles. Women plays very important role in every one’s life. In Ayurveda various preventions are described for a pregnant woman. Like different Paricharya’s are explained for the better health during pregnancy, and for avoiding complications or risk developed during or after pregnancy. Its implementation helps to provide good health for women as well for child. If any complications or risk forms during pregnancy there are various medicinal herbs or treatments are present for this. With the help of medicinal herbs, we tried to avoid different complications or risk factors in Garbhini.

Keywords : Garbhini, Medicinal herbs, paricharya, swasthya.

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Introduction :

Ayurveda is a science of life, basic principle of Ayurveda 'swasthya rakshanam athurasya roga prasamanam.' [1] To maintain Swasthya of pregnant women 'Parichaya' is most important. Garbhini Avastha is one of the precious stages of any woman's life. Ayurveda offers code of conduct to be followed right from the Rajaswala (menstruation) to Sutika (Post partum). [2] Do's and don'ts are mentioned directly or through fundamental principle. Prevalence of herbal drugs use in pregnant woman is very common. But nowadays many cases of ADR(Adverse drug reaction)are reported on use of Ayurvedic products and medicinal plants. Ayurveda, the science of life has given much importance to woman's health, as she is the root of the progeny. The care of the pregnant and the new born are well explained in various Samhitas. [3] Regimen to be followed during antenatal and post natal period for the optimal health of mother and child is highlighted. Antenatal care is the care of women during pregnancy period. The aim of ante natal care is to reduce the risk of still births and pregnancy complications and to have a positive pregnancy experience & outcome. Masanumasika Pathya or month wise dietary regimen and Garbhopaghatakara Bhavas (diet and activities harmful to the fetus) are elaborated in all major texts.[3]

Objectives:

1. To study the perspective of Ayurveda on use of medicinal plants in Garbhini.
2. To compile and critical analyse the information and data regarding use of medicinal plants and their safety in pregnancy.

Material and Method :

Medicinal plants reported with possible risk in Garbhini or contraindicated in Garbhini have been compiled from e-Nighantu. Certain fundamental principle elucidating the safety aspect of Garbhini and Sutika are also compiled and analysed. Reported data on ADR in pregnancy have been critically analysed and presented systematically.

Essential for Pregnancy :

In Ayurveda there are four essential things for development of pregnancy includes ; Most appropriate season (Time), Nutrition from mother, Healthy uterus and other reproductive organs, good quality ovum and sperm. All this factors can be achieved by; Detoxification and purification by means of Panchakarma.[4] Rasayana and Vajeekarana(Virilizing herbs like -Shatavari, Ashoka, Ashwagandha and Kapikachhu) and foods.[5] Ayurvedic texts say a pregnant woman is to be treated as delicately as if one is carrying a pot full to the brim with oil, without spilling a drop. Pregnant woman should eat cooked, liquid, warm, fresh food containing all six tastes of sweet, sour, salty, bitter, pungent and astringent in the right proportion. In order to support each developmental phase of the baby, Ayurvedic doctors advised certain herbs and foods to be taken each month of pregnancy. This regime is named as "Masanumasik Paricharya of Garbhini". It is Month-by-month diet and Medicinal Regimes for good, complete growth and development of the baby. [6]

Effect of Diet in Pregnancy : Aahara or diet is very important in every one's life. It is an Prana of human as per Ayurveda. It helps us to provide good health if we consume good diet with proper amount. In Ayurveda the amount of Aahara is also important aspect.

On our health Aahara, Vihaara and Manasa bhavas are plays important role. Because their effect leads to Agnimandya which further develops various diseases. Acharya Charaka described that various Manasa bhavas leads to disease formation and its effect may develops various risk factors or complications. Manasa abhitapa, Krodha, Shoka, Bhaya, Shrama, Ushna annapana

causes various hazards effects on Garbhini. So proper diet with peaceful, happy mind is also a way for healthy life.[7]

Garbhaupaghatakara Bhava :There are various Garbhaupaghatakara Bhavas which leads to various difficulties to developing Garbha. It can be Aahara, Vihara or any factor which are responsible for development of risk factors for women and child.[9]

Table 1. Garbhaupaghatakara Bhava

Consumption by pregnant woman	Effect on progeny
Addiction to wine	Makes the offspring constantly thirsty, short of memory and fickle minded
Addiction to intake of pork	Redness in eyes, Sudden obstruction of respiration and excessive roughness of the hair of the offspring.
Addiction to the intake of fish	Delayed closure or non-closure of eyes
Excessive intake of sweet	This makes the offspring suffer from Prameha (diabetes), Muka(dumbness) and (obese)
Excessive intake of sour	Makes the offspring suffer from Raktapitta (bleeding disorder) and diseases of the skin and eyes
Excessive intake of salt	Early onset of wrinkles, graying of hair and baldness
Excessive intake of pungent	weak, oligospermia, infertile
Excessive intake of bitter	Weak and emaciated
Excessive intake of astringent taste	Gray in complexion, constipated

Pregnant women should avoid ; -

- 1) Kshara,(Alkali)
- 2) Katu(Pungent)
- 3) Amla(Sour)
- 4) Tikshana(Sharp/penetrating)
- 5) Ushna(Hot potency)
- 6) Ruksha(Dry)
- 7) Vidahi (causing burning sensation during digestion)

- 8) Sauviraka,(Alcohol)
- 9) Palandu(onion)
- 10) Kanda(Tubers)
- 11) Tila (sesame)
- 12) Masha(black gram)
- 13) Surana(yam)
- 14) Apathya Ahara (unwholesome food)

Table 2. Plant useful in Garbhini paricharya indicated with synonym :

No.	Plant name	Synonyms	Reference
1	Haritaki	Garbhavati n Khadet	Haritakyadi varga /35-Bh Ni
2	Langali	Garbhapatini	Guduchyadi varga/72-BhNi.
3	Bola	Garbhashaya Vishodhana	Suvarnadi varga/Madanpal Ni
4	Arishtak	Garbhapatini	Nighantu Shesh/ 136
5	Shishpa	Garbhapatini	K.N. Aushadhivarga/1978
6	Dugdhika	Garbhahari	Kaiydev Ni /695
7	Harenuka	Garbhapatini	Karpuradi Varga/ Bhavprakash Ni
8	Jiraka Traya	Garbhashaya Vishuddhikrut	M.N. Shunthyadi Varga/31
9	Sukshma Ela	Grabhavistravini	Madanadi Ni/. Prathamgana/62
10	Brihat Ela	Garbhavinashini	1/64 –Madanadi Ni
11	Shinshapa	Garbhapatini	4/16 Madanadi Ni.
12	Upakunchika	Garbhashayavishodhana	6/15 Madanadi Ni
13	Shana	Garbhastrapatana	Shatavhadi/76-Rajnighantu
14	Hintala/Sthulatala	Garbhastravi	Prabhadradi /88-Rajnighantu

Pharmacovigilance: No drug which is pharmacologically effective is entirely without hazard. The hazard may be insignificant or may be acceptable in relation to the drug's therapeutic action. Furthermore, not all hazards can be known before a drug is marketed.

Ayurvedic Pharmacology :A potent poison becomes the best drug on proper administration. On the contrary, even the best becomes a potent poison if used incorrectly.

Observations and Results :**Table 3. Reported ADR of medicinal plants -**

Name of plants	Used part	Botanical name	Reported ADR
Eranda	Castor oil	Ricinus communis	Over dosage can lead to severe gastric irritation with vomiting, colic and severe diarrhea
Upakunchika	Black seed	Nigella sativa	Traditionally believed to slow down or stop uterus from contracting if taken in doses higher than commonly found in food.
Jiraka	Fruit	Cuminum cyminum	Lead-contaminated fennel and cumin infusion showed hepatotoxicity in pregnant woman.
Yastimadhu	Root	Glycyrrhiza glabra	Possible alterations of hormone levels Association with preterm delivery
Methika	Seeds	Trigonella foenum-graecum	Pronounced congenital malformations such as hydrocephalus, anencephaly and spina bifida.
Aardrak	Rhizome	Zingiber officinalis	Increase in the incidence of still births. Associated with bleeding or spotting during the second and third trimesters. Reported with esophageal reflux, heartburn, abdominal discomfort and increased nausea, heartburn and reflux.
Karpura	Oil	Cinnamomum camphor	Camphor crosses the placenta and has been implicated in fetal and neonatal death.

Table 4. various formulation and its Teratogenic effect

Name of formulation	Dose	Animal	Teratogenic effect
Pippalyadi gutika	2.5 times to one and five times to the other than the recommended dose for humans	Rats	Fetus-LBW and smaller in length. Developmental defects of soft tissues and skeletons, Herniation of intestines into umbilical cord Mother-Less weight gain during gestation
Vishamusti vati and Suddha Tankana	175mg/kg of aqueous solutions of Visamusti Vati. 300 mg/kg aqueous solutions of Suddha Tankana	Rats	Kinking of tail- 61.12% in 31 fetus, Skeletal malformation in 'Vishmushtik Vari ' treated group nd group and 6.25% in 32 fetuses in 'Suddha Tankana ' group,

Table 5. Teratogenic effect reported in Animal studies :

Name of Plants	Botanical name	Dose and duration	Animal	Teratogenic effect
Shatavari	Asperagus racemosus root methanolic extract	1000mg/kg/body weight for 60 days	Charles foster rat pups	Prenatal study- gross malformation i.e. swelling in legs of foetus, IUGR with small placental size. Postnatal study - decreased number of pups per litter and increased mortality of pups and delayed developmental parameters

Madayantika	Lawsonia inermis Hydroalcoholic extract	100mg/kg body wt.	BALB/c mice between 8-12 wk	Skeletal abnormalities and height and weight loss in embryos.
Aardrak	Zingiber officinalis	20 g/liter or 50 g/liter ginger tea via their drinking water	Pregnant Sprague-Dawley rats	Ginger caused embryonic loss above normal when administered to rats during pregnancy
Langali	Gloriosa superba Linn Hydroalcoholic Tuber Extract	Colchicine 1-3 ppm and 4- 5 ppm	Biomphalaria alexandrina	Anti-fertility activity scarcely produced abnormal embryos. Induce high percentage of abnormalities.
Dhatura	Datura metel ethanolic leaves extract	500mg/body kg wt	Rats	abortion on the 7th day after administration
Chitraka	Plumbago zeylanica root	100mg/body kg wt orally with 0.5ml of distilled water	Mice	Stunted growth, subcutaneous and deep hemorrhage, kinking of tail, protrusion of back of head.
Guduchi	Tinospora cordifolia stem bark and leaf	different concentrations (10%, 5%, 1%, 0.5%, 0.1%, 0.05%, 0.01%) of aqueous extract of stem bark and leaf.	Zebrafish embryo	Head and tail malformations, delayed growth, limited movement, scoliosis/flexure, and stunted tail

Methika	Trigonella foenum-graecum	dose level 3.2 g/kg/day	Rat	Aqueous extract has adverse effects on the development of hind limb long bone.
Nimba	Azadirachta indica A. Juss.	single dose of 3 g/kg and 5.5g/kg body weight	Rat	potent abortifacient activity in pregnant uterus of rats .
Apamarga	The methanolic leaves extract of Achyranthus aspera	Single dose of 3 g/kg and 5.5g/kg body weight	Rat	The extract showed significant ($p<0.05$) abortifacient activity and increased pituitary and uterine wet weights in ovariectomized rats.

Discussion :

Little information about the possible risks in pregnancy on use of medicinal plants is reported. Ayurveda advice diet, regime, routine to be followed to take optimum care of pregnant woman and healthy progeny. Medicinal plants having possible risk in pregnant woman are clearly mentioned in the Ayurveda.[10] Medicine in optimum dose and duration, following the fundamental principle, do not cause Teratogenic effect. Ethnobotanical study should be conducted to record the medicinal plants and regime during the pregnancy used by the elders, folk healers, dai etc. There is need to conduct Robust studies to identify adverse events or herb–drug interactions and associated adverse events arising during pregnancy and the postnatal period as a primary objective. Reporting of ADR and its Causative assessment is essential. Knowledge and awareness about use of medicinal plant

during pregnancy is required to avoid possible ADR.

Conclusion :

Use of medicinal plant and traditional system is prevalent among pregnant women worldwide. Certain medicinal plants are reported with contraindication in pregnancy. Few drugs are also reported with ADR. To create awareness about prevention of possible adverse effects during pregnancy or the postnatal period , it is essential to understand fundamental principle of Ayurveda, Code of conduct and Garbhopaghatakar Bhav depicted in classical text. Scientific validation on safety of use of medicinal plants in pregnancy and exploration of ADR if recorded, is need of hour.

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