

**SCIENTIFIC ANALYSIS OF NUTRITIONAL QUALITIES OF FOOD
INDICATED IN *GARBHINI PARICHARYA* (PRE-NATAL CARE)****¹*Dr. Sheeni Sharma and ²Dr. Rashmi Sharma**

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ABSTRACT

Ayurveda has given great emphasis on *Garbhini Paricharya* (pre natal care) which has multiple goal of easy parturition, uncomplicated pregnancy, safe mother and healthy progeny. As per recent W.H.O report, it suggests that everyday approximately 830 die from preventable causes related to pregnancy and child birth. To reduce this rate, proper *Garbhini Paricharya* (antenatal care) is the need of the day. In this paper, we have made an effort to do critical analysis and scientific description on nutritional qualities of diet for pregnant woman as explained in classical *Ayurveda* textbooks. There is specific food regimen prescribed for pregnant woman throughout nine months. The propose to analyze why there is specific food article indicated for

the particular month .We are trying to make scientific explanation like chemical composition and properties of foods with specific reference to *garbhini*, e.g. use of *gokshur* (*Tribulus terrestris*) at 6th month, helps to reduce edema and other complication of water accumulation by gravid uterus, because *gokshur* has diuretic and nephroprotective properties. Consumption of adequate milk during whole pre natal period supplies the required nourishment to mother and fetus, because milk contains all vitamins (except vitamin C), minerals and fat, protein and carbohydrates. In this paper, we are proposing scientific explanation on all foods which are suggested by *Acharyas* during prenatal regimen.

KEYWORDS: Pregnancy, *Garbhini Paricharya*, Diet And Nutrition, Pre Natal Care, *Tribulus Terrestris*.

INTRODUCTION

Body is made up of *Aahara*(food). Healthy body tissues depend directly on essential nutrients in food. Mother and child must be considered as one unit it is because during Antenatal period, foetus is part of mother the period of development of foetus is about 280 days. During this period, the foetus obtain all the building material and oxygen from mothers blood. Child health is closely related to maternal health, a healthy mother brings forth a healthy baby, there is less chance for a premature birth, still birth or Abortion .The tremendous growth of a baby from the moment of conception to the time of birth depends entirely on nourishment from the mother. *Ayurveda* consider food to be best source of nourishment as well as medicine for the pregnant woman. The month wise diet is singularly unique to *Ayurveda*. It changes in accordance with fetus in the womb and at same time ensure health of the mother. Pregnant woman should follow a careful regimen of food and behaviour during pregnancy. This regimen is known as *garbhini paricharya*(pre natal care)²⁻⁴. The diet during pregnancy should be adequate to provide: (1) The needs of growing fetus, (2) The maintenance of maternal health, (3) The strength and vitality required during labor, (4) Successful lactation.

Month wise Dietary Regimen for Pregnant Woman

Month wise regimen according to *Acharya Charaka, Sushruta, Vagbhata and Acharya Harita* is explained in Table 1. The mother's food habits and nutritional status before conception as well as during pregnancy influence the outcome of the pregnancy. In classical text books of *Ayurveda* there is a specific food regimen mentioned according to month.

Brief development of fetus The whole gestational period is subdivided into 3 stages(DC Dutta 9th edition).

(1) Germinal period: (1st -3rd week), (2) Embryonic period: (4th- 8th week), (3) Fetal period: 3rd month up to termination of pregnancy.

Table 1: Month wise Diet Regimen for Pregnant Woman.

Month	Charaka sharir 8	Sushruta Sharir 10	A.Vagbhata	A.Harit
1st M	Non medicated milk repeatedly in desired quantity, congenial diet	Sweet, cold and liquid diet	Medicated Milk	Yastimadhu, parusaka, madhuka with Navaneeta, madhu, sarkara
2nd M	Milk medicated with madhura group drugs	--do--	Milk medicated with Madhur drugs	sweetened milk treated with kakol
3rd M	Milk with honey and ghrita	--do--	Milk with Honey and Ghrita	Krisara
4th M	One Aksha butter or m	Pleasant food mixed with	Milk with one tola	medicated cooked rice

	ilk with butter	milK and butter and meat of wild animals	of Butter	
5th M	Milk and Ghrita	Meat of wild animal, pleasant food with milk and ghrita	Ghrita prepared with Butter	Payasa
6th M	Milk and butter medicated with madhur group drugs	Ghrita or rice gruel medicated with Gokshura	Ghrita medicated with drugs of Madhur groups	Sweetened curd
7th M	--do--	Ghrita medicated with Vidarigandhadigroup drug		
8th M	Rice gruel prepared with milk and mixed with ghrita	Asthapan Basti then Anuvasana Basti (enemma)	Yavagu prepared with dugdha mixed with ghrita	Ghritapurak
9th M	Anuvasanan Basti with oil medicated with madhur group drug	Up to delivery same as 8th month	Same with Charak Samhita	Different varieties of cereals

Germinal period

The main events in this period are fertilization, cleavage, implantation and formation of germ layers. Milk is *vata* and *pitta shamak* and *kapha vardhak*. So *vata* helps in controlled division of cell and *kapha* helps to increase the size of cell. Milk is known to increase the kledata (moistening) of the body, which can be understood as intracellular fluid. Milk is *prithavi* and *jala mahabhuta* predominant, which helps in moistening, shaping of embryo and may promote this solidification. The use of sweet, cold and liquid diet like milk prevents dehydration and supply required optimum nourishment. These food is easy to digest and *agnideepaka* (increases digestive power). *Yastimadhu* combined with *parusaka* / *madhuka* / both of these with *navaneeta* (type of butter), *madhu* (honey), and *sarkara* (sugar) is given in order to relieve vomiting, dehydration, anaemia that arises in first month.

Embryonic period: In this period organogenesis occurs i.e. all the 3 germ layers undergo individual differentiation and most of the tissue and organ of body are formed. This period is very much crucial; hence no drug should be given during this period because drug can disturb the organogenesis and may lead to teratogenicity. Only folic acid supplementation is required because it is essential for production of methionine (for methylation reaction of DNA). Acharya Kashyapa explained that foetus will not be stable before 4 months, so no medicine should be given. So up to 3 month use of these sweet, cold and liquid diets is beneficial. Milk is natural source of folic acid and it is also a good source of carbohydrate, fat, protein (almost all amino acids), and all vitamins (except Vitamin C), minerals and enzymes which is essential for fetal and mother nourishment. Progesterone hormone which is essential to

continuation for pregnancy, milk is the external source of this. Nourishment of foetus till *vyaktagarbha* (conspicuousness of body parts of embryo) supplied from *Rasa by upasneha* (attracting moisture) and *upasweda* (osmosis), for this milk is helpful, because breast milk is the *updhatu of rasa dhatu*. Cow or goat milk is almost similar to breast milk. According to *Aacharya Harita - Kakoli* (*Roscocaprodera*) is a *jivaneeya dravya* (vitalizer) by *Acharya Charaka & jeevaneeya gana* by *Bhavprakash*. As there is more chance of miscarriage in second month, so *jeevaneeya dravya* should be added to the diet of *garbhini*. It is also *valya* (tonic), *brihaniya* (nutrients), diuretic, *stanyajanana* (galactagogue) in actions.

Fetal nutrition:- (According to biomedical sciences) there are 3 stages of fetal nutrition following fertilization. (1) Absorption: Upto nidation (implantation), in the early post fertilization period, the nutrition is stored in the deutoplasm within the cytoplasm and very little extra nutrition needed is supplied from the tubal and uterine secretion (uterine milk). (2)

Histotrophic transfer: Following nidation and before the establishment of fetoplacental circulation. The nutrition is derived from the eroded deciduas by diffusion and later on from the stagnant maternal blood in the trophoblastic lacunae. (3) Hematotrophic: With the establishment of the fetal circulation, nutrition is obtained by active and passive transfer from the 3rd week onward.

1 tablespoon of honey (21 grams) contains 64 calories and 17 grams of sugar, including fructose, glucose, maltose and sucrose. act as a antioxidant. control cholesterol level, promote healing, One tablespoon of ghee contains around: 115 calories. 14.9 grams of fat. 9.3 grams of saturated fat. 38.4 milligrams of cholesterol, 460.1 IU of vitamin A. 42 milligrams of vitamin E. omega-3 to omega-6 fatty acids is considered ideal in pure ghee. It helps in relieving constipation in pregnancy, development of baby's brain, improving the digestion.

Fourth month:- In the 4th month, pleasant food mixed with milk and butter or mixed with meat soup (*jangal mamsa rasa*) should be given to *garbhini*. As earlier author discussed that fetal development subdivided into three stages, the 3rd stage is fetal period. In this period there is rapid growth of the fetus without much tissue differentiation and complete development of placenta occur. So for the rapid growth of fetus the nutrient requirement also increases. The butter and ghee with milk fulfills the increased nutrient of the fetus and also supplies the nourishment to mother. *Jangalamamsa* (meat) is the excellent source of high biological protein, vitamins, fat, minerals (iron and other minerals), and source of a range of endogenous

antioxidants and other bioactive substances. It also supplies good amount of calories. The high protein contents of meat help in musculature tissue formation of the fetus and iron and B-complex vitamins helps in blood formation ;vitamins, protein, minerals of meat nourish the body of mother and fetus. According to *hariata Krutodana* (medicated cooked rice) comprises of Carbohydrates which is the primary component for the growth of foetus in second trimester. As there is description of *sthiratva* in fourth month which is a *pitrujabhava*.

Fifth month:- In the 5th month pleasant food mixed with ghee and milk or mixed with *jangala mamsa* are advised. As explained for 4th month, the ghee, milk and meat required for the rapid growth of the fetus and also for better health of the mother. Because the iron supplements are slight during the first 4 months of pregnancy, it is not necessary to provide iron supplemental during this time. Withholding iron supplementation during the first trimester of pregnancy avoids the risk of aggravating nausea and vomiting. So the classical textbook of *Ayurveda* mentioned the increased supplementation of iron in form of food (meat) from 4th month. The food supplementation of iron is better than the drug form. Meat is an excellent source of many nutrients, specially **protein, B vitamins, iron and zinc**. *H- Payasa* acts as *brihniya, valya* which is necessary in fifth month as the *garbhini* becomes *krisha* in this period as well as for the growth of foetus.

Sixth month:- In the 6th month ghee or *yavagu* (rice gruel) prepared with *gokshura* are advised.

Yavagu gives strength to the body, nourishes the body tissues and pacifies the *vata dosha*.

Gokshura (*Tribulus terrestris*) have diuretic and nephroprotective properties. *Ayurveda* also describe the qualities of *gokshura* as *mutravirechaniya* (diuretic), *shothahara* (anti-inflammatory) and *krimighna* (anti-bacterial), so it helps to reduce edema and other complication of water accumulation by gravid uterus in the later months of pregnancy. *Gokshura* may also prevent the pre eclamptic toxemia of pregnancy. Acharya Harita has described sweetened curd in sixth month. Curd is rich in vitamin- A, D, calcium, proteins, probiotics. It cools down the body temperature & calms the emotional centre in order to prevent the anxiety. It also prevent the pigmentations i. e. *Kikissa* (striae gravidarum) that appears on sixth month. Acharya Harita has described that there will be *sphurana* (quickenings, quivering,) in foetus which may be sign of formation of locomotors and nervous system along with various reflex.

Seventh month

In the 7th month ghee medicated with prithakparnyadi (vidarigandhadi) group are advised to the garbhini. This group contains many medicinal plants; the combined action of the group are as diuretic, antiinflammatory, prajasthapana (procreant), vayahsthapana (rejuvenators), balya (tonics), brumhana (weight promoting), angamarda prashamana (restoratives), pacifies vata and pitta. Vidarigandha (*Desmodium gangeticum*) have the calming, strengthening and anti-inflammatory properties. Research on this plant shows the properties of analgesic, diuretic, cardio tonic and carminative activities. At 7th month the fetal lung get maturity, steroids help in the lung maturity of the fetus. Brihati(*Solanum indicum*) one of the medicinal plant of the Vidarigandhadi group; its chemical constituents are steroidal alkaloid and steroid hence this may be helpful in lung maturity of the fetus. Acharya Harita has described Ghritakhanda (a sweet dish), Ghritakhanada itself comprised of ghrita which contains good fats to create brown fat in order to maintain the body temperature of foetus.

Eight and ninth month:-From 8th month up to delivery *snigdha yavagu* (rice gruel mixed with ghrita) and *jangala mamsa rasa* should be given to *garbhini*. Baby will continue to mature and develop reserves of body fat. As discussed earlier *snigdha yavagu* gives strength to the body, nourishes the body tissue and pacifies vata dosa. Meat helps in the formation of musculature tissue and blood tissue. It also supplies good nourishment to the fetus and mother. The fetus is the separate physiological entity and it takes what it needs from the mother even at the cost of reducing her resources. While all the nutrients are reaching the fetus through the intrauterine period, the demands are not squarely distributed. 2/3rd of total calcium, 3/5th of total proteins and 4/5th of total iron are drained from the mother during the last 3 months. As during later months of pregnancy Acharya Sushruta mentioned the drugs which are rich in proteins, calcium and iron. Use of *basti* (enema) in last trimester is essential to relieve constipation, strengthen myometrium and helps in regulating their function during labour. Acharya Charaka also mentioned milk and its products during whole garbhini paricharya (pre natal regimen) as Acharya Sushruta. At 3rd month Acharya Charaka advised honey and ghee. Honey is the rich source of fructose sugar, which is the rich source of energy. Ghee and honey also provide immunity. Pollens in honey triggers the macrophages and increases generalized immunity. Acharya Harita described-Ghritapuraka also contain ghrita which is required for the formation of oja as it become unstable in eighth month. So it is quite essential in this time and in 9th month all the system has been completed and foetus is now able to take

all type of ahara in order to maintain a balanced diet schedule. It also help to generate a wholesomeness of foetus.

Table 2: Scientific analysis of food described by Acharya Charka and Acharya Sushrut.

Month	Event	Acharya Charak		Acharya Sushrut	
		Food	Clinical importance	Food	Clinical Importance
1st	fertilization, cleavage, implantation	Milk is prithavi and jala mahabhuta predominant.	Increase the kledata moistening, of embryo and may promote this solidification.	sweet, cold and liquid diet	prevents dehydration and supply optimum nourishment.
2nd	3 germ layers Ectoderm Mesoderm Endoderm	Milk with madhur drugs updhata of rasa dhatu	Milk is natural source of folic acid and good source of carbohydrate, fat, protein (almost all amino acids), and all vitamins (except Vitamin C) Madhur drugs-anabolic and provide energy.	sweet, cold and liquid diet	easy to digest and agnideepaka
3rd	organogenesis	Milk with honey and ghrita	Hone have natural antiseptic and antibacterial properties Ghrita increases energy, weight and strength. Antibacterial, and antimicrobial in nature increases the absorbability of vitamins and minerals	sweet, cold and liquid diet	
4th	Rapid growth of the fetus	milk with butter	Butter is a cardio tonic & good source of Vitamin A. useful in absorption of nutrients, piles, and anorexia (complications of pregnancy)	Meat of wild animal	Meat in producing nourishing effects in the body (mamsam brimhananam)
5th	Further Growth	Milk and Ghrita	Used for wound healing purposes. Stimulates the secretion of gastric acid, thus aiding in the digestive process. cooling in energy, rejuvenating, beauty, enhances memory and stamina, increases intellect, promotes longevity, and protects the body from various diseases.	Meat of wild animal, pleasant food with milk and ghrit	brimhana (strengthening and building) as also balya (promoting strength)
6th	Growth	Milk and butter medicated with madhur group drug	Milk is considered as complete food	Gokshura (Tribulus terrestris)	tonic, diuretic, antiseptic, anti-inflammatory and aphrodisiac natural stimulant of Luteinizing hormone (LH) improved reproductive function
7th	Growth	-do-	-do-	Vidarigandh adigroup	Antioxidant Antimicrobial, Anti

				drug	inflammation, wound healing
8th	Growth	Yavagu prepared with boiled grains (Shukadhanya like Tandula, Yava etc.) with distinct liquid	Yavagu possesses Grahi (digestive and absorbable), Balya (strengthen the body), Tarpani (nutritious) and Vatanasini (pacify the vitiated vata) properties. Bastishodhana (Bladder refinement), AgniDipana (increase digestive fire)	Asthapan Basti then Anuvasana Basti (Enema)	Vaya sthapana – establishes age (anti-ageing) and promotes longevity, establishes youthfulness Shareera upachaya – proper nourishment and development of the body
9th	Maturation	Anuvasanan Basti	Samshamana – pacifying the aggravated doshas Sangrahi – accumulation of malas or excreta Vajikarana – acts like an aphrodisiac for those suffering from ksheena shukrata condition (depletion of semen) Brimhana – promotes bulk and makes the thin person stout	-do-	Varnya – enhances colour and complexion Balam – enhances strength and immunity Arogyam – promotes health Ayushya – promotes quality and quantity of life, enhances life span

CONCLUSION

The period from conception to implantation is particularly important for foetal growth and development. Each stage of foetal development is dependent and influenced by appropriate maternal nutrient supply. Malnutrition, resulting from imbalances of macro and micronutrients before and during pregnancy, can negatively affect both mother and foetus as a whole. Acharya has explained the diet of garbhini in order to prevent all the complications arises by the consequence of pregnancy. He has described in a chronological order i. e. first liquid, then semiliquid followed by semisolid, then solid diet so that the body of mother as well as baby can easily accommodate with the changing physiological phenomenon. Acharya has also emphasized on the diet pattern of garbhini for the protection of both mother and child in particular. Epidemiological analysis and animal studies have shown that these nutritional influences early in life phase can influence the responsiveness of the body to the nutritional environment much later in life. The nutritional well-being of women as they conceive, affects not only the development of the foetus but also the genetic organization of the future metabolic responsiveness of the child and later, the adult. This area of epigenetics has become one of the fastest growing and most complex areas of biological science. (WHO – Good Maternal Nutrition the Best Start in Life– 2015). Recently AYUSH ministry has charted out prescription for pregnant woman in India which the experts and rationalists have termed as promotion of unscientific theories on pregnancy. The advisory disseminated by

AYUSH ministry is based on the insights and views preached by ancient Ayurveda Acharyas from years and years ago, the present interpretation of this article may corroborate and enlighten the scientific background of this recommended diet advised by Acharya in pregnancy and may propel as a future referencing.

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*Milk is *Madhura*(Sweet in taste), Palatable, *Snigdha*(Demulcent), *Vata-Pittahara*(Subsides *Vata* and *Pitta* Doshas), *Sara*(Laxative), *Sadya Shukrakara*(Increases semen), *Sheeta*(Cold in potency), *Satmya*(Suitable to all), *Jeevana*(Life promoting), *Brimhana*(Weight promoting), *Medhya*(Brain tonic), *Vajikara*(Aphrodisiac), *Vyasthapana*(Anti aging), *Sandhanakara*.

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