

## CRITICAL STUDY OF *GARBHAPOSHANA* AND ITS IMPACT ON *GARBHAVRIDHI* W.S.R OF DEVELOPMENTAL ANATOMY

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### ABSTRACT

*Ayurveda* is depends upon the basic principles “*swasthasya swasthya rakshanamaturasya vikar prashamanam*” *swasthya* i.e well being of individual depends upon the *prakruti* which is formed during *garbhavastha*. Journey of foetus starts in mother womb. Whole growth of foetus depends upon the nutrition taken by mother. Nutrition stores for optimal growth and health outcome later in life.the improper foetal nutrition may end in abortion, IUGR or foetal abnormalities. The similar concepts explored in ayurvedic classics in the form of *garbha poshana* (foetal nourishment), aided by *Apara* (placenta) and *nabhinadi* (umbilical cord). *Garbhaposhana* and *garbha matru parathantrata* dependency of child on its mother for its proper growth

and development respectively. As the grows inside the *garbhaashaya* (uterus) many changes occurs simultaneously both inside and outside the fetus. Development of structure such as *Garbha Nabhi nadi garbha poshana*. The exchange of materials between the mother and fetus

**KEYWORDS:** *Garbha poshana, Garbha, Nabhi nadi.*

### INTRODUCTION

*Ayurveda* whole concept of foetal growth is included under the heading of *Garbha*. Here the essential factors of conceptions, time of conception followed by formation and its subsequent

development to form an individual is stressed. The term *Garbha* is the union of “*Shukra, Shonit & Aatma*” in the mother pelvis. Development of a baby follows a predictable path, from conception to birth. After the union of *shukra* and *shonit*, cells divide and differentiate, the developing baby begins as a zygote, forms into a blastocyst, becomes an embryo and then transforms into a fetus. From the very beginning, the developing cells need oxygen and nutrients which are received from the mother through the endometrium, placenta and umbilical cord. *Ayurvedic* classics also explores about the role of *apara* and *nabhinadi*. *Garbhvikriti* represents defects in morphogenesis during early fetal life. *Garbhvikruti* are the important cause of still births and infants’ mortality and contributor to child morbidity. Data reveals that 18.5% are children with other congenital malformations found in every year. According to March of Dimess (MOD) global report on birth defects 7.9 million births (6% of total birth) occurs annually worldwide with serious birth defects and 94% of these births occur middle and low income countries. According to joint WHO and MOD meeting report, birth defects account for 7% of all neonatal mortality and 3.3 million under five deaths. The prevalence of birth defects in India is 6-7% which translates to around 1.7 million birth defects annually. The common birth defects include congenital heart disease (8-10 per 1000 live births), congenital deafness (5.6-10 per 1000 live births), and neural tube defects (4-11.4 per 1000 live births). There are various quotes mentioned in *Ayurvedic* literature about the anomalies or congenital defects precipitating in the fetus and aiming on significant factors that attached to the defective *Shukra, Shonit, Aatma, Kaal* and *Matur- Aahar* (dietetic ovum), regimen of the mother) *Matur-Vihar* (deeds of pregnant mother). All these factors are responsible for vitiation of *Dosha* producing abnormalities of fetus in terms of appearance, complexion and *Indriyas*. Various precautions have been described for pregnant lady to avoid any malformation or defect in progeny These are *Garbhopaghatakara Bhava* such as *Matrija* (maternal), *Pitrija* (paternal), *Atmaj* (Soul), *Rasaja* (Nutritional), *Satmyaja* (Wholesomeness), and *Sattvaja* (Psych / Mind) to avoid any congenital abnormality in fetus. *Garbhani Paricharya* described in our *Ayurvedic* literature has direct scientifically approach towards development of healthy fetus inside the womb of pregnant mother without having any birth defect. It plays a significant role in stabilization of *Garbha* along with meet the essential nutrient and energy requirement necessary during pregnancy. *Chakrapani* has clarified the views of *Charka* and said that suppression of acute desires may cause death of the fetus, but milder ones may ensure abnormalities. *GarbhakarBhavas* are strongly related to the organogenesis of fetus. In this duration of nine months, *Garbha* requires the essential nutrition that is called *Poshan*. According to *Ayurveda*, essence of food (*rasa*) taken by

mother is divided into three parts. First nourishes her body, the second promotes her breast milk and third nourishes to the *Garbha*. *Ayurveda* classics also explores about the role of *Apara* and *Nabhinadi* in fetal nourishment. *Masanumasika Garbhini paricharya* explained in *Ayurvedic* literature should be for pregnant woman to get a healthy offspring. In *Ayurveda* Maternal food with nutrients enters in maternal *Rasvahininadi* through the *Nabhinadi* of *Garbha*, it circulates blood in *Garbhasharir* and *Sarvashariravayav*. In *Ayurveda* classics *Charaka* mentioned *Garbhupghatakara bhava* and *Doharadya avamnana* which leads the cessation in the growth of *Garbha* and cause *Garbhvikrati*. *Charaka sharirsthana* contains many regimens given in *Garbhavastha* which enhance the growth of developing *Garbha*. According to *Ayurvedic* principles, proper preparation of the parents is an essential prerequisite for a healthy progeny.

Proper nutrition of the mother during pregnancy help to produce healthy offspring, thus structuring a healthy family, society and nation. Negligence in *Garbhposhan* becomes a cause for unhealthy and defective child birth and also causes fetal anomalies, abortion and IUGR. there is a need for interpretation of *Garbhposhan* mentioned in *Ayurveda* classics with modern literature according to organogenesis. Here is an attempt made to understand the concepts of *garbhposhana* (fetal nourishment) in comparison with modern concepts of fetal nourishment and related applied aspects.

## AIMS AND OBJECTIVES

1. To compile the facts related to *Garbhposhan* and *Garbhvidhi* on the basis of basis of ancient and modern literature.
2. To explore the structures involved in *Garbhposhan* as per *Ayurveda* and Modern literatures.
3. To evaluate the growth and development of *Garbha* according to *Masa- anumasik vridhi* correlation with weekly development.

## REVIEW OF LITERATURE

### Ayurvedic review

According to Acharya *Susrutha* the umbilical cord is attached to the *rasavaha nadi* (maternal part of the placenta) of the mother and this carries *ahara rasa virya* (nutrition) from the mother to the fetus. The fetus grows by this indirect supply of nutrition.<sup>[1]</sup> From the time of conception until the different parts of the body and their subdivisions have got manifested, the embryo gets nutrition from the *tiriyak gata* (obliquely running) *rasavaha dhamanis*

(vessels carrying rasa) which course through all parts of the body and imparts life to the embryo.<sup>[2]</sup> The growth and development of the fetus takes place by means of the *garbha Nabhi nadi*, which serves as a channel for the rasa (lymph-chyle) formed in the mother's body. This nourishment of the fetus from the mother's body begins as soon as the fetus becomes endowed with life and continues up to the time when the child ceases to be connected with the mother.<sup>[3]</sup> The fetus receives all the nourishment it needs from the metabolic products of the mother and also breathes and sleeps in unison with the mother. According to Acharya *Charaka* the fetus is free from thirst and hunger. The *garbha* is dependent upon the mother for all its activities. The fetus is nourished by the process of *upasneha* (exudation) and *upasweda* (thermo-regulation). Some of the organs are well manifested and some others are not so, the fetus draws nourishment by the process of exudation, sometimes through the *romakupa* (hair follicles) and sometimes through the channels of umbilical cord. The umbilical cord of fetus is attached to the umbilicus on one side and placenta on the other. The placenta is in turn connected with the *matru hrdaya* (mother's heart) via *syantana sira* (pulsating vessels). The *matru hrdaya* is said to flood the *apara* with rasa with *sarvarasa* (all taste) which promotes *bala* (strength) and *Varna* (complexion) of the fetus. According to Acharya *Charaka* the Rasa of the pregnant woman serves 3 purposes:-*Swa-shareera pushti* (Nourishment of her own body), *Stanyaaya* (Lactation) and *Garbhavidhi* (Growth of fetus). Being supported by that food, the fetus is dependent upon the mother keeps living inside the uterus. Situated inside the uterus, the fetus sleeps when mother sleeps and is awake when she is awake, the activities of the fetus is not independent, from the time of conception it is dependent for its moistness and dryness upon the food of the mother.<sup>[7]</sup> When all the organs and parts of the fetus become manifested, a tube connecting the umbilicus of the fetus with the *apara* which is in turn gets connected with the mother's heart is formed. The nutrient portion of the food travels from the mother's heart carried through the *dhamanis* and reaches the *apara* and from there to the *Nabhi*. Then it goes to the *pakwaashaya* (intestine) where it undergoes further digestion by *kaya Agni* (digestive juices). Comprised mainly of nutritive materials rasa nourishes all the tissues. Rasa also oozes out through the hair follicles to form the fluid outside the fetus.<sup>[8]</sup> According to *Vagbhata* in *Aṣṭāṅga Hrdaya*, during the 3<sup>rd</sup> month of gestation manifestation of *gaatrapanchaka* (5 parts of body) as well as *sarvasushma-anga* (all minute organs) starts. A tube connecting the *Nabhi* (umbilicus) of the fetus with *hrdaya* of the mother develops which is responsible for the passage of *matur ahara rasa* (essence of mothers).

According to modern science after fertilization, till the implantation blastocyst receives nutrition partly from the substance stored within the ovum and partly by diffusion from the uterine secretion. When the blastocyst moves towards the uterine cavity, large quantity of secretions formed by the secretory cells of the fallopian tubes provide nutrition. Once it reaches uterus it gets implanted. After implantation deciduas or endometrium of the pregnant uterus provides nutrition. The gland show marked dilatation and increased tortuosity and increased secretory activity. The endometrial stromal cells contain extra quantities of glycogen, protein, lipids and minerals necessary for the conceptus. From 8<sup>th</sup> week onwards gradually it is taken up by the placenta. Placenta is the site of exchange of nutrients and wastes between mother and foetus. There will be exchange of oxygen and carbon dioxide across the foetal membrane. The foetus r nutrients from the maternal blood such as glucose, lipids, amino acids, water and electrolyte. Umbilical cord also plays an important role in foetal nourishment by establishing a connection between the placenta and the foetus. Through which the foetal blood flows to and from the placenta. It develops from the connecting stalk. It consists of 2 arteries carry de- oxygenated foetal blood to the placenta, one umbilical vein which contains oxygenated blood and nutrients from mother's intervillous spaces in to the foetus.

AYURVEDA	MODERN
<i>Maturhrdya</i>	Maternal blood from heart
<i>Rasvahninadya</i>	Vessels from mother heart
<i>Nabhi</i>	Foetal umbilicus
<i>Nabhinadi</i>	Umbilical cord
<i>Aapra</i>	placenta
<i>Garbhasharir</i>	Foetal circulation
<i>Upsneha</i>	Amniotic fluid(consist of water, glucose, albumin, Na, urea, lipid etc.
<i>Upsweda</i>	Proteolytic activities of trophoblast and tropholytic activities of chorionic villi provide nourishment to the blastocyst.
<i>Rasvahanadi</i>	Maternal part of the placenta

S No	In Ayurveda	
1.	<i>Charak samhita</i>	By <i>Upsneha</i> and <i>Upsweda</i>
2.	<i>Sushruta Samhita</i>	By <i>upsneha</i> , <i>Ras-nimitta</i>
3.	<i>Ashtanga Samgrah</i>	By <i>Upsneha</i> and <i>upsweda</i>
4.	<i>Ashtang hridaya</i>	By <i>kedarikulaya nyaya</i>
5.	<i>Bhel samhita</i>	By <i>kedarikulya nyaya</i>
6.	<i>Bhoja samhita</i>	By <i>kedarikulya nyaya</i>

## OBSERVATION OF MASAANUMASIK PARICHARYA

Month	Charaka samhita	Sushrutasamhita	Astanga Sangraha	Harita samhita
1 <sup>st</sup> month	Non medicated milk	Madhur, sheet, liquid diet	Medicated milk	Madhuyasthi, madhukapuspa with butter, honey and sweetened milk
2 <sup>nd</sup> month	Non medicated milk	Same as first month	Same as Charaka milk medicated with madhura rasa	Sweetened milk treated with kakoli
3 <sup>rd</sup> month	milk with honey and ghrita	Same as first month	Milk with honey and ghrita	krisara
4 <sup>th</sup> month	Milk with butter	Cooked sasti rice with curd, dainty food mixed with milk and ghrita	Milk with one tola of butter	Medicated cooked rice
5 <sup>th</sup> month	Ghrita prepared with butter extracted from milk	Cooked shastika rice with milk, jangal mansa along with dainty food mixed with milk and ghrita	Same as Charaka	payasa
6 <sup>th</sup> month	Ghrita prepared from milk medicated with madhur drugs	Ghrita or rice medicated with gokshura	Same as Charaka	Sweetened curd
7 <sup>th</sup> month	Same as sixth month	Ghrita medicated with prithakaparnyadi group of drugs	Same as charaka	ghirtakhanda
8 <sup>th</sup> month	Kshira yawagu mixed with ghrita	Asthapanbasti with decoction of badri mixed with bala, atibala, satpuspa, patala etc, honey and ghrita. Asthapan is followed by anuvasanbasti of oil medicated with milk, madhura drugs	Ksirayawagu mixed with ghrita, asthapanbasti with decoction of badri, anuvasana basti with oil medicated with madhura drugs	ghritapuraka
9 <sup>th</sup> month	Anuvasanabasti with oil prepared with drugs of madhura group, vaginal tampon of this oil	Unctuous gruels and jangal mansa ras up to the period of delivery	Same as charaka	Different varieties of cereals



## OBSERVATION OF MASAANUMASIK GARBHVRIIDHI

Month	Charka	Sushruta	Vagbhata	Kashyap	Garbhounishad	Modern
1st	<i>Khetbhuta</i> ( <i>sleshma</i> <i>shadrisha</i> )	kalala	Kalala in 7 <sup>th</sup> day	kalala	7 <sup>th</sup> day-appears as <i>budhbuda</i> (vesicle like sac) 15 <sup>th</sup> day-appears as panda (soft spherical mass) 1 month- become <i>kathina</i>	Morula, blastocyst Germ disc Tubular embryo, head & neck region, limb bud, umbilical cord begins to form primitive hearth and begins to beating
2nd	Panda shaped(spherical mass)-male Elongated like pesi (muscular fiber)-female Arbuda (tumour like irregular mass-napushaka	Accumulated mahabhutas in 1 <sup>st</sup> month (i.e.kalala) get processed by combined effect of sheet- <i>ushma-</i> <i>anila</i> and become ghana	Ghana, pesi, arbudha-purusa, stri&napunshaka		<i>Shira</i> (head ) is formed	Prominent head, basic plan of limbs, face Telencephalic vesicle appear, peripheral nerves, special senses Placenta ad foetal membrane Gonads become recognizable as testes or ovaries
3rd	All <i>indryas</i> , major and minor body parts appears simultaneously	Protrusion of panch pidika(bud like appearance ) of hands, feet & head. Minute division of all body parts simultaneously takes place.	5 body parts are manifested-head, 2 legs & 2 hands in the minute bud form. Due to appearance of head the <i>garbha</i> get sensation of happiness and sadness.	All body parts manifest simultaneously <i>Praspandana</i> (pulsation) <i>Chetna</i> (consciousness ) appears & feels pain Subtle manifestation of budhii.	Appearance of limb	Sign of digitations of limb in hand ( fan like ), nail develop Primary ossification centeres of bone, bone marrow, laungo, eye brow, skin simultaneously other system face- forehead, eyes ear
4th	Foetus get stabilized, so pregnant women get excess	Differentiation of all body parts & sub parts clearly Foetal heart manifest – <i>dauhrdini</i>	Foetus gets stable Organs and its parts manifest fully.		Appearance of digits, <i>jathara</i> (GI-tract), kati Pradesh (pelvic region)	Scalp hair Foetal movement. quickening by the end of this month Diagnosis of external genitalia

	heaviness of the body	<i>Chetna</i> .consciousness arise & desire are express via mother.				of male or female. Other parts also simultaneously developed
5th	Excess increase of muscle, blood, therefore pregnant women become thinner.	Mana become more enlightened	Chetna (consciousnesses) develops.	Similar to charaka	Formation of <i>pristavamsa</i> (back bone	Placental circulation- begins Limb, head & chin, nose & ear prominent Skin covered by vernix caseosa lanugo over body Quickening felt by mother
6th	Excess increase in strength, complexion in garbha so considerably.	More enlightment of buddhi/intellect-brain	Formation of snayu, sira, roma, appearance of strength, complexion, nail-hair.	Increase in strength, complexion & oja so mother get exhausted.	Ear, face-nose & its bone formation	Eye brow and eye lid formed, movement of eye ball Finger nail are present and distinct finger Cerebral cortex are defined Haematopoiesis begins in the sternum
7th	Growth & development of all aspect o f <i>garbha</i> take place so pregnant women become exceedingly deficit in all aspect of her health	Distinct development of all body parts completely.	Full growth and development of fetus& well nourished too.	Complete development of all the dhatu and body parts and is completely associated with vatta- pitta- kapha. Pregnant lady get tired	During this month the Fetus become viable	Growth and maturation of all aspects of the fetus up to 9 month
8th	Oja reminds unstable	Instability of oja	Unstable oja	Unstable oja	Completely development of fetus take place	
9th	Labor from 9 to 10 months	9-10-11-12 labor	Labor in 9 month	Labor in 9 month		



## DISCUSSION

*Garbhaposhana* is totally depends on the structure involving in fetal nutrition includes placenta, umbilical cord, foetal membranes etc. if any structure do not functionally active due to any structural deformity causes alter in the foetal circulation. *Garbha poshana* is occurring through the *rasa* obtained from the mother. *Garbha* requires *rasa* from mother because of its *apakwa dhathu* (under developed organs). *Aahara rasa* forms the *ambu* part of the *garbhotpathi samagri*<sup>[13]</sup> (*Ritu, kshetra,ambu and bija*). It refers to lymph- chyle containing nutritional substance and is formed in the *amapakwashaya* (stomach along with intestine), later reaches the *hrdaya* where after it's called as *rasa dhathu* and this *rasa* is directed to the whole body through *rasavahadhamanis*. During pregnancy this *rasa* also reaches the *apara* which conveys the essence to the *garbha Nabhi nadi*. The umbilical veins (*sira*). According to *Charaka Acharya*), carries the *rasa* to the *garbha Nabhi* and enters the systemic circulation of fetus. This *rasa* nourishes the *shareera dhathu* of *garbha*. In modern explanation nutrient materials absorbed through intestinal villi are brought to the liver via portal vein. Inside the liver it undergoes detoxification and later it reaches lungs via heart and gets oxygenated. This oxygenated and nutrient rich blood is then given to systemic circulation by the pumping action of heart. The supply of nutrition to the fetus is from different sources in different stages of development. Soon after fertilization till implantation the cytoplasmic contents of ovum as well as the secretions from the uterine tube provide the necessary nourishment to the embryo. From the time of implantation till the formation of placenta the secretions from trophoblastic cells, uterine tube and endometrial cells provide nourishment. After the formation of placenta the fetal circulation is established, which becomes the major nutritional source for the fetus.

## CONCLUSION

Nourishment plays an important role in healthy growth of the foetus. The concept of *Garbha poshana* (foetal nourishment) explained in Ayurvedic classics holds good in parlance with modern science. The deficiency conditions, placental and umbilical cord abnormalities which can lead to the improper nourishment of the foetus should be diagnosed in the early pregnancy and should be treated accordingly. *Masanumasika garbhini paricharya* (month wise dietetic regimen) explained in Ayurvedic literature should be followed by the pregnant woman to get a healthy offspring.

**REFERENCES**

1. CharakSamhitaEdited with Charak-Chandrika Hindi commentary Dr. Bramhanandan Tripati Vol 1, sharirsthan4/10 chaukhambaparakashan Varansi, 878 to 880.
2. Sushrut Samhita Ayurvedrahasyadipikahindi commentary by Dr. BhaskarG ovind Ghanekar. Reprint 2006,Sharirsthan3/40Mehachandlachmandas publication, 97/
3. Charak Samhita Edited with Charak-ChandrikaHindicommentary Dr. Bramhanandan TripatiVol 1, Sharirsthan6/32ChaukhambaparakashanVaranasi.
4. SushrutaSamhita of sushruta with the nibandhsangrhaCommentry by Dalhanachrya Edited by jdhavjiTrikamjiAcharya, Sharirsthan, 3/31.
5. Sushrut, sushrutsamhita, AyurvedTatvasandipika Hindi comment by Kaviraj Ambika Datta Shstri. Sharirsthan3/40 vranasi Chaukhamba Sanskrit sansthan.
6. CharakaSamhita Edited with Charak-Chandrika Hindi commentary Dr. Bramhanandan TripatiVol-1.Sharirsthan6/23Chaukhambaparakshan Varanasi, Reprint, 2016.
7. Agnivesha, Charaka Samhita, Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta, Edited by Vaidya Jadavaji Tri- kamji Acharya, Shareera Sthana 6/23,Chaukhambha Orientalia, Varanasi, 2009.
8. Dutta D.C, Textbook of Obstetrics, Edited by Hiralal Konar, 7<sup>th</sup> Edition, Published by New Central BookAgency(P)LTd,Kolkata, 2011; 462.
9. Dutta D.C, Textbook of Obstetrics, Edited by Hiralal Konar, 7<sup>th</sup> Edition, Published by New Central BookAgency(P)LTd,Kolkata, 2011; 263,323.
10. Dutta D.C, Textbook of Obstetrics, Edited by Hiralal Konar, 7<sup>th</sup> Edition, Published by New Central BookAgency(P)LTd,Kolkata, 2011; 492.
11. Agnivesha, Charaka Samhita, Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakra- panidatta, Edited by Vaidya Jadavaji Tri- kamji Acharya, Shareera Sthana 6/23,Chaukhambha Orientalia, Vara-nasi, 2009; 346.