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## *Garbhopghatkar Bhav* as per Ayurvedic and Modern Perspective

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### ABSTRACT

As we know *ayurveda* is the ancient science of life. Healthy child is the future of our nation. *Ayurveda* described the methodology how to produce a healthy child. According to *ayurveda* the chief aim of copulation is creation of a healthy child, not to get sexual or physical pleasure. Health of child depends on the health of the mother. Even if both male and female are responsible for the creation of children, but still female is more responsible as fertilization, implantation, growth and development of embryo, parturition, lactation and rearing of children are all performed by female. Several adverse factors during pregnancy that affect the fetus are *garbhopghatkarbhav*, *daurhridaavmanana*, *purvakrit karma* etc. *Ayurveda* described many *ahar* and *vihar* that are contraindicated during pregnancy and if they are taken by mother they impact bad effect on the growth and development of fetus.

### KEYWORDS

*Garbhopghatkarbhav*, *Teratogenic*, *Daurhridini*, *Garbhadhan*



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## INTRODUCTION

*Ayurveda* is a science of life which advocates the men for healthy and happy life by alleviating the sorrow. Since ancient time *ayurveda* is the most holistic and scientific medical system. Creation of a healthy child is the need of parents, nation as well as nature. Increasing rate of birth defects in the new born is really an anxious topic, which is posing a challenge to modern medical science. These congenital defects are seen as minor, major, anatomical, physiological and even latent in nature. Predominant causes of new born mortality are pre-maturity (35%), neonatal infections (33%), birth asphyxia (20%) and congenital malformations (9%)<sup>1</sup>. Nearly 3.5 million babies in India are born too early, 1.7 million babies are born with birth defects, and one million new-borns are discharged each year from Special New-born Care Units (SNCUs). Congenital heart disease (8-10 per 1000 live birth), congenital deafness (5.6-10 per 1000 live birth) and neural tube defects (4-11.4 per 1000 live birth) are common birth defects<sup>2</sup>. These new-borns remain at high risk of death, stunting and developmental delay.

The above data reveals that modern science fail to reduce high infant mortality and also adverse drug reaction. Advancement of

modern medical science in diagnostic and pharmacological field reduce the rate of mortality of child but still advancement in genetics is not able to give a healthy child. So all these attracted the population towards the holistic approach of *ayurveda* which directs preventive and promotive aspect of health and also states about how to produce healthy progeny. To produce healthy progeny *ayurveda* described all aspect in scientific way. *Ayurveda* described different measures to get healthy progeny like *garbhadhan sanskar*, *punsavan sanskar*, time of conception, diet of mother etc that are taken during pregnancy. *Ayurveda* also described *garbhopghatkar bhav* that affect growth and development of fetus. This important aspect was visualized and developed in India thousands of years ago. *Ayurveda* described both preventive and promotive aspect of health.

## AIMS AND OBJECTIVES

1. To study and see the relation of *garbhopghatkar bhav* with congenital and hereditary disorders.
2. To suggest a protocol for healthy progeny.

## MATERIALS

Classical literature of *ayurveda* as well as modern medical science on the subjects of



Gynecology / Obstetrics and genetics from the library of the Shivalik Institute of Ayurveda and Research, Dehradun, India were explored for this study. The Internet services were also used. The data obtained were critically analyzed and presented.

## METHODS

The present study was purely a literary study wherein the explored literature was analyzed and interpreted.

### EFFECT ON THE FETUS AS PER AYURVEDIC VIEW

As per the *shareer sthana* of different *samhitas* of *ayurveda*, *garbhopghatkar bhavas* is the factors which affects growth and development of certain structures as well as functions of the body.

As per *Acharya Charaka* following factors are responsible for abnormal development of fetus including morphology, complexion or color and sense as well as motor organs including psyche due to vitiation of different types of *dosha*<sup>3</sup>.

#### (a) *Vitiation of Beeja (Ovum and Sperm)*

Abnormality of a organ macro/micro occurs due to damage of the specific part of genetic material which is responsible for the normalcy of that organ. *Acharya Sushruta* said that *sahaj arsh*(congenital piles) is due

to vitiation of *dushta shukra* and *dushta shonita*.

#### (b) *Atma-Karma (Soul Manifestation)*

*Indriya* (sensory/motor organs) are derived from *atmaja bhava*, their presence or absence depends on the fate. Hence the abnormal offspring such as idiot, deaf, dumb etc may be similar to father or not.

#### (c) *Ashaya(Uterus)*

*Ashaya* is also responsible for healthy progeny, because *ashudhaashaya* results in defect in fetus such as STARCH infection that causes many abnormalities in fetus.

#### (d) *Kala (Age/Season/ Period of Particular Event)*

*Kala* also has its importance in healthy baby otherwise many defects occur in baby. Such as advance age of parents results in many genetic defects such as down syndrome etc in baby.

#### (e) *Ahar-Vihar(Diet and Regimen) of Mother*

In other words, normal and abnormal development of any body part of fetus the mothers diet, habits, exposure to external environment and other activities adopted by the mother during the pregnancy.

As per *Acharya Sushruta* due to exercise, *aptarpana* (*langhan, Rukshanand Svedan*), *atikarshana*, day sleep, night awakening, or *vegavidharana* affect the different organ or body parts in a pregnant lady by vitiating the relative *dosha* and that *dosha* (vitiating



by the same factor as was responsible for the mother's damage ) will also affect the same body part or organs of fetus<sup>4</sup>. *Acharya Sushruta* described the following factors etiopathogenesis that are considered for abnormal development of fetus.

1. Fetus resembling like the snake, scorpion, pumpkin and any other abnormal shapes are due to the sins (un-desirous or unrighteousness) done by the mothers either in previous life or get exposure in pre-conception period or during the pregnancy<sup>5</sup>.

2. *Vata* aggravation or non fulfillment of longings of the pregnant women makes the fetus *kubja* (dwarf), *kuni* (having a crooked or wither arm or an arm without a hand or finger), *pangu* (lame, crippled in lower limbs or motionless limbs), *muka* (dumb) or *minmin* (nasal voice)<sup>6</sup>.

3. Abnormalities in fetus is the result of aggravation of *vatadi dosha* following the inauspicious acts done in previous life by the parents due to their unfaithfulness in god<sup>7</sup>.

4. The body part of pregnant lady is affected or get traumatized by the *vatadi dosha*, the same part of fetus will also be get affected or traumatized by the *vatadi dosha*<sup>8</sup>.

5. In 4<sup>th</sup> month, the fetus expresses desirous in the objects of the sense organs. If pregnant mother is not having fulfillment

of desires, the women will give the birth of inactive, of distorted eyes or with no eyes, or having abnormalities in the concerned sense organs. When desires of objects of sense organs of *dauhrida* (double heart/brain that is one of mother and another of fetus) mother have not been fulfilled then such a women gives the birth of a baby having abnormality of that concerned sense organ<sup>9</sup>.

#### ***Effect of Desirous Dauhrida Mother on the Fetus (4<sup>th</sup> Month)***<sup>10</sup>

- If a mother sees the king, son will be wealthy and virtuous.
- If mother desirous of garments of wool or silk and ornaments, son will have fond of adoring himself and engaging in love activities.
- If mother desire of staying in hermitage, son will be well disciplined and engaged in virtuous acts.
- Desirous of icons of gods, son will be like a courtier.
- Desirous to see wild animals, son will be cruel in nature.
- Desirous to take meat of godha, son will like to sleep always and clings on the things he likes.
- Desirous to take meat of cow, son will be strong and capable of enduring troubles of all kinds.



- Desirous to take meat of buffalo, son will be brave, of reddish eyes and plenty of hairs on the body.
- Desirous to take meat of boar, son will be brave and always sleepy.
- Desirous to take meat of deer, son will be having strong thighs and roams in forests.
- Desirous to take meat of big deer, son will always be of excited mind.
- Desirous to take meat of tittiri bird, son will always be afraid.
- Develop desires for any things, son will have the similar in respect to the body, behavior and virtues.

In fetus, origin of major (macro) and minor (micro) body parts (organs) that is organogenesis occur due to *swabhav* (nature). Origin of good and bad qualities having major (macro) and minor (micro) body parts that is organogenesis are the result of *dharma* or *adharma* acts of pregnant mother. As per *Acharya Vaghbhatta kapha* vitiating diet may cause *kushtha*, *kilasa*, congenital teeth at birth, *shwitra* (leucoderma) and *pandu* (congenital anemia)<sup>11</sup>. Suppression of natural urges, *yoni dosha*, *udavarta* disease and use of non congenial diet may also be responsible for the teratological abnormalities such as weak and blind baby<sup>12</sup>.

#### **EFFECT ON FETUS AS PER MODERN VIEW**

#### ***Teratogenic Agents***

According to modern medical science, there are three phases of intrauterine growth. The first is zygotic phase — (1<sup>st</sup> week to 2<sup>nd</sup> week after fertilization). The second is the embryonic phase (3<sup>rd</sup> weeks to 8<sup>th</sup> weeks) most of the organ systems develop and the third is fetal phase (9 weeks to 38 weeks) further growth and elaboration of the organ systems takes place. It is pertinent to note that during zygotic phase, teratogen would cause loss of the product of conception. Embryonic phase is the most susceptible for major congenital malformations to develop. Hence, the period of organogenesis is most susceptible to teratogenic effects of drugs. Different organ systems differentiate at a precise or specific time during embryogenesis. In about 10% of cases congenital malformations are induced by the alterations in the fetal environment during the period of embryogenesis. There are some teratogenic agents that cause different anomalies in infants which are described below<sup>13</sup>

#### ***Infectious Agents***

Toxoplasmosis- Cerebral calcification, hydrocephalus, microphthalmia

Rubella- Heart defects, cataract, glaucoma, deafness, tooth defect

Cytomegalovirus- Mental retardation, microcephaly, blindness



Hepes simplex- Microcephaly, microphthalmia, retinal dysplasia

HIV- Microcephaly, growth failure

Syphilis- Mental retardation, deafness

Varicella- Mental retardation, muscle atrophy, limb hypoplasia

### Chemicals

Valproic acid- neural tube defect, craniofacial, heart and limb anomalies

Diphenylhydntion- mental retardation, facial defects, fetal hydantoin syndrome

Lithium- heart malformations

Thalidomide-heart malformations, Amelia

Aminopterin- Heart defect, cleft lip and palate

Warfarin- microcephaly, chondro dysplasia

ACE inhibitors- Growth retardation

Cocaine- Microcephaly, growth retardation, gastroschisis

Alcohols-FAS (fetal alcohol syndrome), heart defects, maxillary hypoplasia, short palpal fissure, mental retardation

Isotretinoin (vit A)- Isotretinoin (vitamin A) embryopathy

Organic mercury- cerebral palsy like neurological presentation

Lead- neurological disorders

LSD- Limb defects, CNS malformation

### Hormones

Maternal diabetes- heart and neural tube defects

Diethyl stilbestrol- malformation of uterine tube, uterus, vagina, testes

### Physical agent

X- ray-microcephaly, spina bifida, limbs defects, cleft palate

Hyperthermia- Anencephaly, spina bifida, facial defect, heart defects, omphalocele, limbs defects

## DISCUSSION

### Beeja

Here the word *beeja* means (*shukra* and *shonita*). The parts *beeja* are called *beeja bhaga*. The *beeja bhagavayava* that is genes are responsible for formation of various body organs and their function<sup>14</sup>. If a particular part of *beeja bhaga* is vitiated or damaged, the organs develops arised from that part their part will become abnormal. Such disorders are called *beeja doshaja vyadhi* example-*varta*, *trunaputrika*, *vandhya*, *jatapramehi* and *mrudita*<sup>15</sup>.

When a man having pure *shukra* comes in contact with a women having pure *yoni* that is healthy *yoni*, *garbhaahaya* and *shonita* during the *ritukala* then a union between *shukra* (sperm) and *shonita* (ovum) takes place inside the *garbhashaya* (uterus). At the same time, high affinity psyche containing soul also enters. As a result of this *garbha* is formed. This *garbha* develops being healthy and nourished with *satmaya* (suitable) *rasa* as well as other said right



regimen. Thereafter, the fetus is delivered without complication at appropriate time with all *indriyas* (sensory and motor organs), complete body parts, *bala*(strength), *varna* (complexion) , *satva* (endurance), *samhanan* (compactness) and being assembled with *matrija*, *pitrija*, *atmajaja*, *satmayaja* and *rasaja bhava* along with constant association of *mana*(Psyche)<sup>16</sup>. On the other hand *dushta shukra* or abnormal spermatozoa usually does not fertilize oocytes and *dushta aartava* or abnormal ovum die before reaching maturity.

*Acharya Bhavamishra* has said congenital blindness occur due to impure *shukra*<sup>17</sup>.

According to *Acharya Charaka*, *Garbha* is possible only after assembling of all the six components- *Matrija*, *Pitrija*, *Atmajaja*, *Satmyaja*, *Rasaja* and *Satwaja*<sup>18</sup>.

*Matrija* and *pitrija bhav* responsible for organogenesis of fetus. *Atmajaja bhav* is responsible for life span, induces functions of psyche, sense and motor organ, *prana* etc.

*Satmyaja bhav* maintains health, cheerfulness of sensory and motor function, also maintains the qualities and purity of *shukra* (sperm).

*Rasaja bhav* produces fetal body, growth and development, maintains relation between body and *prana* (soul), provides nourishment to the micro and macro organs.

It also maintains *Utsaha*(optimum function).

*Satvajabhav* is responsible for fear, anger, memory, seriousness, softness and nature of fetus.

*Ashaya* or uterus is placed important role in healthy progeny. As *Acharya Charaka* said that when union takes place between healthy sperm and ovum in healthy uterus during *ritukala* and *jeevatma* and *mana* descend and unite with them, then *garbha* is formed<sup>19</sup>.

In the same way *acharya Vagbhata* also said –to get a healthy and strong child following things are essentials-*shuddha garbhashaya*, *shuddha yoni* (marga). *Shuddha artava*, *shuddha sukra*, *avikruta vata*, *avikruta hrudaya* (healthy and strong mind).The *dosha* predominant in *yoni* during conception and pregnancy determine *prakruti* and character of child. Example- male delivered from *puti yoni* may suffer from *saugandhikanapumsaka*.

Neonate may suffer from ophthalmia neonatrum due to gonococcal infection. Intrauterine infections is the commonest cause of neonatal mortality in India. The fetus may get infected in utero and during passage through the birth canal or may develop nosocomial infection any time after birth. Intrauterine infection includes TORCH that is T stands for toxoplasmosis, O for others (syphilis, gonococcal



ophthalmia, tuberculosis, malaria, varicella, hepatitis type B, coxsackie B, echo, parvovirus B19, HIV, etc) R for rubella, C for cytomegalovirus and H for herpes simplex hominis. These infections during pregnancy may lead to fetal death, Intra uterine growth retardation, congenital malformations or severe systemic manifestations of the disease<sup>20</sup>.

### **Kala**

Women should conceive during *ritukala* if one performs coitus beyond *ritukala* it leads to non-conception, abortion or still birth or other *vikrutis*. That is why due consideration is given to *kala* or proper time for achieving a healthy baby. Improper time can influence the health of the fetus by creating a mutogenic or epigenetic influence.

### **Desha**

Environment is also responsible for defects in *shukra* and *shonita* and then this *dushti* transferred to progeny. Early pregnancy loss may occur due to excessive exposure of paternal environment by mercury, lead, solvents, pesticides etc. The male germ cell as a target for drug and toxication<sup>21</sup>. Occurrence of sickle cell disease varies in different area of world example 2.1% -of the neonates in Bahrain<sup>22</sup>, 1.7% of the neonates in southern Iraq<sup>23</sup> and 1.37% of neonates in Saudi Arabia<sup>24</sup>.

### **Age**

Advance age of parents is also an important *garbhopghatkar* factor which results in birth defects in children. Many chromosomal defects such as trisomy 21, 13 and 18 are associated with advance age of mother (pregnancy after the age of 35 years)<sup>25</sup>. As per modern science maternal age of less than 20 years or more than 35 years include in high risk pregnancies<sup>26</sup>. As per *ayurved* marriage should be done at the age of 25 years for male and 16 years for female. At this age they become matured physically, psychologically as well as sexually<sup>27</sup>. *Acharya Vagbhata* described best time for marriage: male 21 years and female 12 years; best time of *garbhadharan*: male-25 years, females-16 years<sup>28</sup>. If pregnancy occurs between a couple of male before the age of 25 years and female before 16 years there is chance of abortion or if child gets delivered, he has less life span or weak *indriyas*<sup>29</sup>.

A study in 2000 was done by Hollier and colleagues revealed that 3885 infants with congenital malformations in nearly 103,000 pregnancies at Parkland Hospital, the risk for all non-chromosomal abnormalities increased significantly with maternal age. Club foot was increased significantly after 35 and heart disease after 40<sup>30</sup>. A study shows mother of age 40 years or above involve non-disjunction at meiosis 1 which results in Down Syndrome.



A retrospective study was conducted on 15,381 pregnant women in between January 2001 and February 2012 at Gangnam and Bundang CHA Medical Centers. The incidence of aneuploidies increased exponentially with maternal age. The risk of trisomy 21 and trisomy 18 showed significant correlation with maternal age<sup>31</sup>.

Both the couple should have different gotra (different ancestors), not suffered from any communicable disease (viz *Kustha*, *Sosha*, *Phiranga* etc.), the female should be *roopsheel* (beautiful), *lakshana sampanna* (good Character) and having all the body parts intact etc<sup>32</sup>. If marriage is done before the age of 25 in male and 16 in female the child will have short life span and weak sense organs. Maternal health is also an important factor in birth defect of infant. Presence of chronic systemic illness, including endocrinal disorders, such as diabetes mellitus, hypothyroidism and thyrotoxicosis also cause defects in child. Consanguineous marriage leads to increased expression of autosomal recessive disorders<sup>33</sup>. The offspring of consanguineous unions may be at increased risk for recessive disorders because of the expression of autosomal recessive gene mutations inherited from a common ancestor<sup>34,35,36,37</sup>.

In UAE, autosomal recessive disorders have been reported to account for 80% of single gene disorders and 22% of congenital malformations among 16 419 births<sup>38</sup>. The soul along with *atma* and four *mahabhuta* constitute *sukshma sharira*. This body cannot be seen through naked eyes (subtle). It can be only seen by *divya drushti*. He (soul) transmigrates from one body to another body guided by the past actions<sup>39</sup>. The *akriti* (shaped and size) of individual depends on his karma and raja and tama dosha. According to *Sushruta*, *garbhavikriti* occurs due to atheism (no belief in god) of parents, bad past actions of parents, and vitiation of *vatadi dosha* during pregnancy etc.

#### ***Ahar Vihar of Mother-***

*Rasa* is the most important factor besides six factors for the growth and development of fetus, which is responsible for the organogenesis, enthusiasm, and strength and life stability<sup>40</sup>. The *garbha* gets nourishment in the form of *rasa* component from the congenial diet taken by mother during pregnancy.

*Kashyapa* has clearly mentioned that three divisions of the *rasa* is derived from the maternal diet. One part is for the nourishment of the body of mother, second part for the fetus, while rest of the third part is for the nourishment of breasts (for milk productions)<sup>41</sup>. But, *Charaka* has explained



that *rasa* is formed from the maternal diet to perform three functions such as nourishment of mother's body, formation of milk and growth and development of the fetus.

With the normalcy of all the six factors of *garbha*, the use of appropriate diet and mode of life by the pregnant mother, fetus obtains normal growth and development by getting nourishment from *upsneha* and *upsweda* as a result of time factor and its own nature<sup>42</sup>. *Upsweda* is a substance which has the similarity with the sweat or has the ability to perform the function of homeostasis of the body.

In the same way, *Upsneha* is a substance, which has the unctuousness or ability similar to *Snehana*. *Upsneha* may be considered as lipids, glycogen, amino acids etc which are responsible for the growth and development of an embryo and the fetus.

As per *Vaghbhatta ahar ras* reaches to umbilicus via umbilical cord and then enters into *pakvashaya* (where the *ahar rasa* is transformed in to the *rasa-dhatu*) of the fetus where its *Kayagni* metabolizes and provides nourishment to the umbilicus via umbilical cord and then enters into *pakvashaya* (where the *ahar rasa* is transformed in to the *rasadhātu*) of the fetus where its *kayagni* metabolizes and provides nourishment to the fetus. *Rasa* carries pure

nutrients (*prasada*) in large quantity, which results in nourishment of different *dhatu* through the process of *kedari-kulya nyaya*<sup>43</sup>.

The mother who desires a healthy and beautiful child (*prajasampat*) should take compatible diet (*hitkarahar*).

#### ***Non Fulfillment of Dauhrida***

It leads to congenital anomalies. If the desire of women towards a harmful substance is more it is to be given in little quantity along with beneficial substances, unless if desire is suppressed the *vayu* gets vitiated to cause congenital anomalies<sup>44</sup>.

Desires come and are satisfied through *indriyas*. So non fulfillment of particular object affect a particular *indriya* that is if a *dauhridini* wants to hear particular song and could not able to hear, this will lead to abnormal hearing or *badhira*<sup>45</sup>. If desire of *dauhrida* is unfulfilled then the born child will be *kubja*, *kuni* (one eyed), *khanja* (lame), *jada* (mentally retarded), *vamana* (dwarf), *vikrutaksha* (eye diseases), blind etc. So in modern science also advice to take adequate diet during pregnancy in following ways-

To maintain maternal health, to maintain fetal health, provide strength during labour and from successful lactation.

- Recent research suggests that antenatal stress and anxiety as early as in 18 weeks of pregnancy has a programming



effect on the fetus, which lasts at least until middle childhood, and may show up as behavioral problems, such as, dyslexia, hyperactivity, and attention deficit disorder<sup>46</sup>.

In one study, in 1999, Trasler and Doeksen found that male germ cell exposure to drugs or environmental agents may alter genomic imprinting or cause other changes in gene expression<sup>47</sup>

## CONCLUSION

Healthy child can build a healthy nation. The secrets behind producing a healthy child *ayurveda* described very effective method as follows-

- 1- Marriage should be arranged after maturity.
- 2- Both the couple should be physically and psychologically healthy.
- 3- Mother should follow the monthly regimen.
- 4- *Douhrida* desires should not be neglected.
- 5- Medicine to be given during pregnancy are to be given with caution.
- 6- Mother should remain away from *garbhopghatkara bhav*.
- 7- To believe in God and to be engaged in worshipping alongwith auspicious activities as well as to give respect to guru and elders.

8- If above methods are followed, definitely it will be helpful in producing healthy baby ultimately healthy nation can built up.



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