

## CONCEPT OF GENETIC AND CONGENITAL DISORDERS IN AYURVEDA AND IT'S PREVENTIVE MEASURES

### Review article

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### ABSTRACT

*Ayurveda* is science of life. It gives importance to prevention before occurring the diseases. Many diseases are descend in child from their parents. These are the genetic disorders. So, it is most important to follow preventive measures during pregnancy. *Acharya Charaka* has given concept of genetics mentioned in the form of *Beeja* (seed), *Beejabhaga* (part of seed) and *Beejabhagavyava* (further smaller part of seed). Day by day diseases are increasing in persons. This occurs due to faulty habits of food and life style. If pregnant woman takes this faulty food and do the activities which are strenuous, there is chance of having different disorders in child. These disorders are considered as congenital disorders.

**Aims & Objectives:** To review the concept of genetic and congenital disorders as per *Ayurveda* and its preventive measures.

**Materials & methods:** It is a conceptual study. Materials collected from ayurvedic classical literature and online articles related to topics.

**Result:** Many preventive measures has been found under different headings which are helpful in prevention of congenital disorders and genetic disorders at some level.

**Discussion:** *Acharya* has given the concept of *Beeja*, *Beejabhaga*, *Beejabhagavyava*, factors responsible for formation of *Garbha*, factors which are injurious to life of fetus, concept of consanguineous marriage, age of lady for procreating the child, cleansing therapy for couples before having pregnancy, *Garbha-vikruti*(defects in fetus) and it's preventive measures.

**Conclusion:** By following the preventive measures it is very easy to elevate the multidimensional quality of child and procure a disease free healthy baby endowed with excellence.

**Keywords:** *Beeja-Beejabhaga-Beejabhagavyava*, *Garbhopaghatakara bhava*, *Garbjini paricharya*

**INTRODUCTION:** Heredity is studied by genetics. Genetics is study of genes and other factors related genes.<sup>i</sup> Parent passes traits or characteristics to child through their genes. The health conditions and diseases both can be passes through genes.<sup>ii</sup> A genetic disorder is a disease caused by a change in the DNA sequence either in whole or any part. Genetic disorders can be caused by a mutation in

single gene or multiple genes..<sup>iii</sup> The description of genetics found in ayurvedic literatures.

In *Charaka Samhita*, *Acharya Charaka* has mentioned the concept of *Beeja*, *Beejabhaga* and *Beejabhagavyava*.<sup>iv</sup> He gave a clear explanation about these factors and their role in inheritance.

Many disorders which are inherited from parents are mentioned in *Ayurveda* as

*Sahaj-roga* as well as gave measures to prevent it. In *Ayurvedic* literature there is detail description of the things which should be followed by mother and father before having conception. There are other factors which should be followed after having conception. There is detail description of antenatal care, factors which should be avoided during pregnancy.

### Factors which are Required for the Formation of *Garbha*

*Acharya Charaka* has mentioned that with the excellence of *Shukra* (sperms, spermatic fluid and endocrine function), *Asriga* (ovum, ovarian hormone), *Ashaya* (uterus and its appendages) and *Kala* (appropriate period or *Ritukala*) and *Hita-anna-upchara* (use of beneficial and wholesome diet and mode of life) the fetus delivers in time, endowed with happiness, comfortably and possessing all complete and fully developed parts.<sup>v</sup> *Acharya Charaka* also mentioned that the *Garbha* (fetus) is formed from aggregation of factors derived from mother, father, *Atma* (soul), *Satmya* (wholesomeness), *Rasa* (nutrients) and *Sattwa* (mind/psyche).<sup>vi</sup> *Acharya Sushruta* mentioned that coordination of the four factors is necessary for the conception and development of a healthy child; they are *Ritu* (menstrual period), *Kshetra* (healthy reproductive system/uterus), *Ambu* (amniotic fluid/nutrition) and *Beeja* (healthy *Shukra* and *Artava*)<sup>vii</sup>.

### The Concept of *Beeja*, *Beejabhaga* and *Beejabhagavayava*

*Beeja* refers to *Shukra* and *Shonita*. *Shukra* can be considered as male gamete and *Shonita* as female gamete. *Beejabhaga* is the part of the seed (*Shukra* or *Artava*) which is responsible for the formation of a particular organ. *Beejabhagavayava* is still

minute part responsible for formation of particular body part.

When *Dosha* aggravating factors are used by the woman, then *Dosha* are aggravated and circulating in the body reach the *Shonita* and *Garbhashaya* and vitiate them. If woman conceives at that time then one or more organs of fetus derived from the that vitiated part get deformed. When *Beejabhaga* of *Shonita* which responsible for manifestation of uterus is vitiated then the *Vandhya* (absence of uterus) is born. When the *Beejabhagavayava* in the *Artava* of the mother which is responsible for the formation of the uterus is vitiated, then she gives birth to a *Putipraja* (putrified).<sup>viii</sup> When the *Beejabhaga-avayava* which is responsible for the formation of the uterus and also the portions of the *Beejabhaga* which is responsible for the development of feminine characters in the body is vitiated then she delivers a fetus who inspite of looking like a female but not a female known as *Vaarta*.<sup>ix</sup>

In the same way in male, when *Beejabhaga* responsible for production of *Shukra* is vitiated, the born child would be *Vandhya* (sterile).<sup>x</sup> If the part of the seed is defective, the born child would be *Putipraja* (putrified).<sup>xi</sup> When the *Beejabhagavayava* which is responsible for the production of *Shukra* and the *Beejabhaga* which is responsible for the formation of organs that characterize a male, are excessively vitiated, this gives birth to a child who is not a complete male but only having masculine characteristics. Such a type of child is known as "*Trinaputrika*".<sup>xii</sup>

*Acharya Charaka* mentioned the 8 types of *Garbha-vikruti*, these are *Dwireta*, *Pavanendriya*, *Samskaravahi*, *Narashanda*, *Narishanda*, *Vakri*,

*Irsyabhirati* and *Vatikashanda*. Due to defects of *Beeja* (sperm and ovum), deeds associated with soul, *Ashaya* (uterus), *Kala* (period of conception), *Matrij-ahara-vihara* (defects of mother's diet and mode of life) the aggravated *Doshas* produce various abnormalities of systems, complexion and cognitive as well as conative organs.<sup>xiii</sup>

### Factors Responsible For Formation of *Garbha Vikruti*

#### • *Shukradusti* and *Artavadusti*

As already mentioned above that *Shukra* and *Artava* are considered as *Beeja*. Genetic material carried from parent to children through *Beeja* only. These genes also carry the risk of diseases. So, it is most required that the *Beeja* is having the optimum quality and disease free. *Acharya Sushruta* has mentioned the *Doshas* of *Shukra* and *Artava*. They are *Vata-Pitta-Slesma-Shonita-Kunapa-Granthi-Puti-Puya-Kshina-Mutra-Purisha*.<sup>xiv</sup> The *Shukra* and *Artava* having these *Doshas* are not capable of begetting children.

#### • *Ashayadusti*

If *Dosha* aggravating factors are taken by women, aggravated *Dosha* circulating in the body vitiate *Shonita* and *Garbhashaya*. Because *Ashaya* means the place where something (here *Garbha*) resides. So, here uterus (*Garbhashaya*) is to be taken. Before planning for *Garbha* the measures should be followed for healthy reproductive system. For that *Acharya* has also mentioned the *Rutimaticharya* (practices during menstruation). These measures should be followed. If woman is not follow the three days of abstinence and other measures, there will be chance of child having deformity.<sup>xv</sup>

#### • *Ahita-anna*

*Matruja-ahara* is most important. As the nutrition of fetus is directly depends on mother. *Acharya* has mentioned the *Garbhini paricharya* and recipes to be consumed for each month by mother. The food should be amply sweet, *Hrdya* (pleasurable), well cooked, prepared with appetizing drugs and abounding in fluid substances.<sup>xvi</sup> These rules should be followed up till delivery. Pregnant woman should avoid to take wine products. Because woman who is takes daily wine produces progeny who is over thirsty, has short memory and fickling mind. Woman who often uses meat of iguana, the progeny suffers from urinary bladder stone, gravel or slow stream of urine. Daily using sweet articles make the progeny to suffer from urinary disorders including diabetes mellitus (*Prameha*). Likewise excessive saline, bitter, pungent and astringent articles also avoided.<sup>xvii</sup> So, *Acharya* has specifically mentioned about the diet of pregnant woman that with *Pathya* and *Apathya*.

#### • *Garbhopaghatakara bhavas*<sup>xviii</sup>

These factors are injurious to the fetus. The pregnant woman should not sleep excessively in supine position because constant or excessive sleeping in supine position, the umbilical cord of fetus encircles the neck. The one who always sleep produces sleepy, ignorant progeny possessing deficient digestive power. She should not indulge in verbal strife. The one indulging in verbal or physical strife produces epileptic progeny. she should not indulge in coitus, indulging in coitus produces progeny who is physically ill-formed. She should not feel jealous because the one who is intolerant or jealous produces

offspring who is ferocious, spiteful, insidious and calumnious.

Other factors also mentioned there in *Garbhopaghatakara Bhavas*.

These diseases are included under the heading of congenital disorders which are produced due to faulty diet and habits of pregnant woman.

- ***Dauhrda-vimana***<sup>xix</sup>

*Dauhrda* is a status of pregnant woman having two hearts. At the time when sense organs of fetus are manifested, at that very time it attains unobstructed flow of consciousness and mind gets associated with feelings, from then onwards fetus starts quivering, this is called by elders as the state of *Dwaihridaya* or two hearts of mother. So, desire of fetus is expressed through mother. Due to this very reason disrespect to these desires of fetus should not be done. Due to disrespect to this desires there may develop death or morbidity of the fetus.<sup>xx</sup> *Acharya Sushruta* told that the child of a mother whose wishes are not fulfilled during pregnancy stands in danger of being born hump-backed, handless, lame, dumb or nasal voiced through the deranged condition of the *Vayu* of its mother's body. Therefore proficient experts manage or treat the pregnant woman with desired and wholesome articles.

- ***Atulyagotra***<sup>xxi</sup>

*Acharya Charaka* has mentioned the whole chapter named as *Atulyagotriya Shariram* in *Sharirasthan* due to high importance of non-consanguinity. The first step of embryology is fertilization obtained through coitus between couple at an appropriate time. But there is chances of genetic abnormalities more so of recessive gene abnormality in consanguineous marriages. *Acharya* has clearly mentioned

that the person should do coitus with non-consanguineous person for the procreation of healthy child.

- ***Kaala***

*Kaala* can be considered as the reproductive period. *Acharya* has mentioned that one should not have coition with woman who is very young, too old, suffering from chronic disease or afflicted with abnormalities<sup>xxii</sup>. Now-a-days it is seen that to do coitus with young woman result in premature child and there is also increase the chance of mortality. Increasing age significantly associated with miscarriage, chromosomal abnormalities, gestational diabetes, placenta previa and cesarian delivery.

- ***Aatmakarma***

The deeds in previous life are said as *Daiva* while those action done in present life are said as *Paurusa*. Both these is cause of manifestation of diseases.<sup>xxiii</sup> *Acharya Sushruta* has mentioned that monsters such as serpents, scorpions, gourd shaped fetus and abnormal shaped fetus delivered from the womb of a woman should be ascribes as the effects of deadly sins.<sup>xxiv</sup> The *Satwa*, *Raja* and *Tama* are the psychic constitution. The *Mana* of fetus attains the characters of *Satwa*, *Raja* and *Tama* depending upon the psychological status of the mother and father, the topics bring listened by the pregnant woman, the influence of deeds of the previous life and specific practice of *Mana*.

### **GARBHINI PARICHARYA**

After being pregnant, the measures to be followed described under the heading of *Garbhini-paricharya*. Which type of diet should be taken by pregnant women in each month is also mentioned. If this type of diet is followed properly the fetus

becomes the healthy and the pain of pregnant woman also subsides.

**Table 1 (Masanumasika Garbhini Ahara)**

Month of pregnancy	Dietics advised by various authors		
	<i>Acharya Charaka</i> <sup>xxv</sup>	<i>Acharya Vagbhata</i> <sup>xxvi</sup>	<i>Acharya Sushruta</i> <sup>xxvii</sup>
1 <sup>st</sup>	Non medicated milk	Medicated milk	<i>Madhura-Shita-Drava ahara</i>
2 <sup>nd</sup>	Milk medicated with <i>Madhura</i> drugs	Milk medicated with <i>Madhura</i> drugs	<i>Madhura-Shita-Drava ahara</i>
3 <sup>rd</sup>	Milk with honey and <i>Ghrita</i>	Milk with honey and <i>ghrita</i>	<i>Madhura-Shita-Drava ahara</i>
4 <sup>th</sup>	Butter extracted from milk	Milk with one <i>Aksa</i> of butter	Pleasant food mixed with milk and butter
5 <sup>th</sup>	<i>Ghrita</i> prepared with butter extracted from milk	<i>Ghrita</i> prepared with butter extracted from milk	Cooked <i>sasti</i> rice with milk
6 <sup>th</sup>	<i>Ghrita</i> prepared from milk medicated with <i>Madhura</i> drugs	<i>Ghrita</i> prepared with butter extracted from milk	<i>Ghrita</i> or <i>Yavagu</i> (rice gruel) medicated with <i>Goksura</i>
7 <sup>th</sup>	Same	Same	<i>Ghrita</i> medicated with <i>Prathakparnyadi</i> group of drugs
8 <sup>th</sup>	Rice gruel prepared with milk	Rice gruel prepared with milk	Rice gruel prepared with milk

**DISCUSSION:** *Acharya* mentioned many factors responsible for formation of *Garbha* as well as the factors which are responsible for formation of *Garbha-Vikruti*. Person should do coitus with non-consanguineous person for the procreation of healthy child. So, consanguineous marriage should be avoided. The minimum age of male and female for the marriage and for procreating child should be taken in consideration. Female having the age below sixteen years and male below Twenty five years should not indulge in coitus. Because if they indulge in coitus and fertilization occurs the fetus either die in womb or live for few years and deformity occurs. The preparation of male and female before planning for baby. The

couple should properly do *Shodhan-Karma* (*Snehana, Swedana, Vaman, Virechana, Basti*) then use the proper diet. Once the body is cleansed the man should specifically take milk and *Ghrita* medicated with sweet group of drugs and the woman should take mainly *Maasha* and *Tila-taila*. The couple inspite of possessing unimpaired *Shukra* and *Shonita* and *Garbhashaya*, for achieving progeny endowed with specific qualities should follow these. Which activities must not do during pregnancy also described in *Garbhopaghatakara bhavas*. The pregnant woman should not sits on difficult, uneven, hard seat, not suppresses urges, does not so strenuous activities, not take daily wine, meat of inguana, hog's meat, fish. She

should not take excessively sweet/saline/pungent/astringent/bitter articles. After the development of sense-organs the fetus express their desire through mother. This *Avastha* is known as *Dauhrida*. If desire is not fulfilled at that time the aggravated *vayu* leads to deformity in child. If desire is fulfilled the *Garbha* become the healthy. *Acharya Sushruta* mentioned specific *Dauhrda* denoting character of the child. Ex- if pregnant woman having desire to look at king, then the forthcoming child will be wealthy and lucky. If pregnant woman desire to wear *Dukul-Patta-Kosheya*(silk garments) and ornaments etc. the forthcoming child fond of ornaments and handsome. If she desires to live in *Ashrama* the forthcoming child capable of controlling *Indriyas* and religious. Besides these what-so-over untold things are desired by the woman, the born child reflects. As psychic constitution is depends on the topic being listened by the pregnant woman, pregnant woman should engaged in auspicious things. By doing *Yoga* she has to keep her mind calm and

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concentrated. All these things also reflects on mind of fetus.

## CONCLUSION

*Garbhasharira* is most important part given in *Sharirastahna* of different *Samhitas*. There is not only description of formation of fetus but it includes the various concepts like rules which should followed before being pregnant, *Shodhankarma* for both male and female before being pregnant, antenatal care during pregnancy, factors which are dangerous to fetus. If these are followed properly it will surely help in prevention of disorders in forthcoming child.

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