

## CONCEPT OF *SHAD GARBHAKARA BHAVAS* IN AYURVEDA

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### ABSTRACT

Since the advancement of science, world has progressed in every field. The field of anatomy also is not untouched by this progress. Still the basic principles, established by Ayurvedic Scholars in the field of *Rachana Sharir* stand true in the light of modern science also. Foundation of Ayurveda Science is based on the ancient philosophies which are fundamental sciences of the ancient Indian think tank. Ancient scholars have enumerated a number of factors, which together lay the physiological and physical make-up of an individual. The combination of these factors and the state of *doshas* in *Shukra* (sperm) and *Artava* (ovum) at the time of conception determines the constitution of a person. Ayurvedic thinking supplies strong foundation to make an understanding of human constitution. There are the various factors responsible together which have an effect on constitutional, temperamental, psychological and spiritual make up of each individual. *Shad garbhakarabhavas* (factors) i.e. *Matrija*, *pitrija*, *Atmaja*, *Sattvaja*, *Satmyaja* and *Rasaja* have the influence on the constitution of the body. In this research paper how these *Shad garbhakarabhavas* (procreative factors) plays an important role during the formation development of the foetus is described. The present Literary / conceptual study, thus, focus mainly on interpreting these observations on the basis of modern scientific knowledge. The consortium of all these six procreative factors is necessary for healthy offspring.

**Keywords:** *Shukra*, *Artava*, *Shad Garbhakarabhavas*, *Matrija*, *Pitrija*, *Atmaja*, *Sattvaja*, *Satmyaja*, *Rasaja*

### INTRODUCTION

As references available in our ancient texts, clearly point out that ancient scholars have the knowledge of hereditary diseases and the impurities that are present in *Shukra* (sperm) and *Artava* (ovum).

They also well acquainted with the fact that, in the foetal formation and development, which *bhava* (part) is going to form from which *shadgarbhakarabhavas*. They have described such

a minute aspect of foetal development. Both Acharya Charaka and Sushruta described shad garbharabhavas and formation of angapratyanga (different body parts) accordingly in sharirsthana<sup>1</sup>. Resultantly punbija (sperm), Stribija (ovum) and garbhabija (zygote) is made up of (composed of) many beejabhaga (chromosomes) which are capable to produce every angapratyanga<sup>2</sup>. In this way Ayurvedic concept which was taught before thousands of year by the acharyas with their divine knowledge are found to be true with the established modern concepts.

In Ayurveda Acharya describes manas guna which determines the human nature, also resembles with the mother and father. Ayurveda, the ancient Indian medical system has given importance on this and postulated various measures to minimize the risks. These measures start well before conception. For meeting the objective of healthy progeny, Ayurveda Acharyas felt the importance of six procreative factors (shadgarbhkarabhavas) such as Matrija, Pitrija, Aatmaja, Rasaja, Satmyaja and Sattvaja<sup>3</sup>. Neither mother nor father, nor the atmosphere in the uterus or food or the soul or the mind can be sole causative factor for the formation of the foetus<sup>4</sup>. The Agglomeration of these procreative factors is must for healthy child. Healthy mother, father, practice of a wholesome regimen and a healthy mind (psychological status of parents) play a important role in achieving a healthy offspring, thus structuring a healthy family, society and nation.

### AIM AND OBJECTIVES

1. To study and see how shad Garbhakara Bhavas influences foetal development.
2. To study role of epigenetics in foetal growth.

### MARERIAL & METHODS

Classical references on Ayurvedic literature and modern medicine on subject of Embryology and Genetics were referred from Library of S. R. C. Ayurved Mahavidyalaya, Chikhli, Dist. Buldhana and internet related websites. This is purely lite-

rary research work and references collected were critically analysed and presented.

### Role of Heridity

Charaka described that there are six factors which are unitely responsible for appropriate development of an embryo<sup>5</sup>. He also describes the reason for similarities between offsprings' and parents'<sup>6</sup>. Heriditory factors are known as shadbhava samudaya.

- 1) Matrija –Maternal factors
- 2) Pitrija –Paternal factors
- 3) Atmaja –Atma (Soul)
- 4) Satmyaja- (Wholesomeness)
- 5) Rasaja-(Nutritional factors)
- 6) Sattvaja- (Psych/Mind)

Above six factors are collectively responsible for the development of the embryo. Not single factors can form and develop embryo properly. Following body parts or organs develop from respective bhavas<sup>7</sup>.

**Matrija bhava:** The first and foremost contributor is a mother. Without a mother a Garbha can not originate. Some of the tissues and organs or attributes of a Garbha predominantly come from mother they are called Matrija (Matru = mother, Ja = emerging from) Bhava (features). The features inherited from mother are - Skin, blood, muscle tissue, fat, umbilicus, heart, pancreas, gall bladder, spleen, kidney, urinary bladder, stomach, duodenum, small intestine, large intestine, omentum, rectum, anal canal and anus.

**Pitrija bhava:** The second contributor is a father. Without a father, Garbha will not come into existence. The traits that are inherited from a father called Pitrija (Pitru= father, Ja= emerging) Bhava (features) are - Hair, (kesha), mustache (shmashru), nails (nakha), Skin hair (Loma), axillaries, groin hair, teeth, blood vessels, ligament, tendon, semen.

**Atmaja bhava:** The Third important factor is a soul (spirit) called as Chetana Dhatu or Atma. A new life is the union of an ovum, a sperm, and a soul. The attributes of the soul that the foetus acquires are - to take birth in specific species, life span, knowledge of self, mind, control on actions

of sensory organs, in and out movements of the air elements (*vata*), inspiration, preservation of knowledge, unique appearance, distinctive voice, complexion, happiness and sorrow, desire and aversion, awareness, intelligence, memory, ego, enthusiasm. These features are called as *Atmaja* (*Atma*=Soul, *ja*-emerging from) *Bhava*.

**Satmyaja Bhava:** For the proper development of the embryo, it should be provided by acceptable or agreeable factor through maternal diet. When all the six procreative factors are present in concordance, then only a new life can come into existence. When these factors combine under the most favorable conditions and environment, then only a new life can concede. *Satmya* is the use of such things which do not cause harm to the body even though they are different qualities of one's own constitution. The optimal presence of all these factors defines the suitability for a new life and it is called *Satmya* for the *Garbha*. The *satmyaja* factor is responsible for awarding health, vigor, non greedy attitude, serenity, well being of all organs, quality in voice, skin and reproductive cells (sperm & ovum) and satisfaction in sexual activity. These characteristics imparted by the *satmya* to a *Garbha* are called *Satmyaja Bhava*. These *bhava* decides the sustaining capacity and development of *Garbha*.

**Rasaja Bhava:** The digested, absorbed and assimilated end product of the ingested food. The following *bhavas* (factors) are said to be influenced by *rasa*. So they are called *rasaja bhava* (factor). They are -*Abhinirvritti* of *sharira* (origin of *sharira* (body), *Abhivridhi* (growth), *Tripti* (satisfaction), *Pushiti* (Nourishment), *Utsaha* (enthusiasm), *Sharira upachaya* (physical structure, *Sthiti* (Maintenance), *Bala* (strength), *Hani* (Decay)

**Sattvaja Bhava:** *Mana* defines following characteristics called *Sattvaja Bhava* in an individual - Attachment, character, purity, aversion, awareness, memory, confusion, Sacrifice, jealousy, bravery, fear, rage, enthusiasm, fiery, rude or mild nature, profoundness, unsteadiness. All living things fall under one of the three constitutions of *mana* name-

ly *Sattvika*, *Rajasa* & *Tamasa*. Even though all human beings possess qualities of all three constitutions, the qualities that are executed accordingly, a person is called *Sattvik*, *Rajasik*, and *Tamasik*.

#### **Role of Shadbhavas:**

*Shadbhavas* i.e. *Matrija*, *Pitrija*, *Atmaja*, *Satmyaja*, *Rasaja*, and *Sattvaja Bhavas* are responsible for the formation of *Angapratyangas* of *Garbha* i.e. organogenesis. These *shadbhavas* are not only responsible for the structural growth of foetus but they play also important role in the development of psychological, spiritual and emotional factors. Therefore we can say that proper growth and development of *Garbha* is achieved from a combination of proper *shadbhavas*. Each of these *shad Garbhakara Bhavas* is assigned with a certain organogenesis, functional/ Psychological phenomenon, to develop in the forthcoming baby, during its intrauterine life<sup>8</sup>. The cumulation of these procreative factors is a must for healthy progeny. A lag on the part of any of these procreative factors will lead to physical, functional or psychological defects, which can be contributed by the respective factor. One factor alone is not capable of producing embryo. If mother and father are the sole responsible elements (factors) of producing an embryo, all those couple want of having children of particular sex according to their wish, no couple will remain childless or with a progeny of unwanted sex. Mother and father are not sole responsible elements of producing embryo, If that was so No couple will remain childless<sup>9</sup>. Placenta formation is not possible without mother<sup>10</sup>. If only *Atma* is considered to create another *Atma*, it could have promoted to traject its good qualities to the species of its choice but it is not observed<sup>11</sup>. Embryo is not derived only from congenital, wholesome or appropriate diet. If it was so, then only those couples consuming suitable diet containing high quality of *rasa* would have had progeny<sup>12</sup>. The *satva*, *Svabhava* does not come from outside world; all the incidents of previous life would not have remained unheard, unseen, unknown<sup>13</sup>. We can say that the

mother, the father and *Atma* etc. factors are not totally independent for all their functioning.

## DISCUSSION

### *Matrija-Pitrija Bhavas*

Concept of heredity has been thoroughly presented in Aurvedic literature. *Kula* or *Gotra* of parents, the age of mother and father, health of reproductive organs, time of conception, *bija* of mother, diet taken by the mother during pregnancy, drugs taken by the mother during pregnancy, diseases of mother during pregnancy can affect the health and normalcy of the foetus. In *Atulyagotriya Adhyaya* it has been clearly mentioned that marriages in two similar *Gotras* should be avoided, otherwise congenital deformities forms in the offspring. Mendel has stated the law of inheritance by performing several experiments on the plants. He concluded that inheritance depends upon several units, called genes. Different studies show significant impact on phenotype-genotype correlation. Autosomal traits are related with a single gene on an autosome (non-sex chromosome). They are called as 'dominant' because a single copy coming from either parents-is enough to cause this trait to appear. Autosomal recessive trait is another pattern of inheritance in which disease, disorder have passed on through families<sup>14</sup>.

X-linked genes are found on the sex X chromosome. If the father has the abnormal X-linked gene and the mother is having two normal genes, all their daughters receive one abnormal gene and are normal gene, making them carriers. Their sons will not receive the abnormal gene because they will receive the father's Y-chromosome. However X-linked genes may be dominant or recessive types. The Y-linked traits are only passed on from father to son. Epigenetics is an exception to the above theory. We have long known that maternal nutrition profoundly impacts disease susceptibility in their offsprings, but we never understood the cause-and-effect link. For the first time ever, we have shown precisely how nutritional supplementation to the mother can permanently alter gene

expression in her offspring without altering the gene themselves. First, epigenetics erased the conviction that genetic blueprints are written in indelible ink. Suddenly, science had to take into account the notion that a given set of genes is not immutable set of blueprints or instructions. The exact same set of genes can produce different outcomes depending on which genes have undergone methylation and which have not. There was a whole new layer to consider a set of reactions that acted outside and above the genetic code, changing its results without changing the code itself<sup>15</sup>. Malnutrition in the mother affects foetal growth and can possibly cause foetal malformation. It is extremely important for expecting mothers to maintain a sufficient level of vit. D in their blood during the gestation period to reduce the risk of delayed brain development and other mental ailments in newborn babies<sup>16</sup>.

### *Atmaja Bhava:*

Ayurveda is using four primary factors i.e. Mother, father, soul and nutrition. Every factor is made up of four elements Earth, water, fire, air. The soul that enters at the time of fertilization plays a crucial role in the physical and mental nature of the child a couple will create. In spite of same family, birth time, nutrition; people differs in their life span, psychometaphysical aspects. Why do same initial pathological features produce different diseases in different people, why do they occur quickly in some whereas in others there is a long latent period. Such unexplained, indigenous or idiopathic factors are due to the *atmaja bhava*. The effect of what is done during the previous life is known as *daiva*<sup>17</sup>. The mental state during the time period of conception and during the pregnancy impact the nature of the soul that incarnates into the womb. Modern epigenetic research would say that stress measured by cortisol levels impacts gene expression in the early stage of embryogenesis. The practice given by *charaka* is for the mother to visualize the desired child and eat, dress and live in the way that represents the culture wanted in the nature of the child<sup>18</sup>. This lifestyle supports the visualization

and is aimed at attracting soul desired by the parents. The thoughts and desires arising from the past *karmas* of the parents attract a soul of like nature. During the early stages of human development, material ambitious and an egotistical nature are justified because *atma* (deeds of previous life) drive us onwards and upwards.

**Sattvaja Bhava:**

Only the human being has the possibility of living conscious, wide awake, controlled life. Human being possesses instinct and intelligence. All these things may not happen without the presence of *Manasa* (psyche). According to research done by prof. Michel Bett, working at Cambridge university, one cannot claim that the psyche of the foetus totally a derivative of one chromosome or gene because, Psyche of the foetus depends upon the genetic derivatives, gestation derivatives and environmental derivatives. *Dauhrida Avastha* of *Garbhini* is a very candid manifestation of the *sattvaja bhava*. Ayurvedic scholars clearly mentioned that suppression of desires of *Dauhridini* may influence the psychology of both the mother and foetus<sup>19</sup>. Ayurveda scholars have regarded *Sattva* as a linking and integrative force of the various determinants, which are related with the development of human organism and its personality<sup>20</sup>. *Sattva* with its association with soul at the time of union of sperm ovum, is considered as an essential factor for the development of embryo. Thus we can say that the *Sattva* of the foetus is moulded by three factors

1. *Sattva* of parents - Genetic derivatives.
2. *Garbhini Uparjita Karma*- Gestation derivatives.
3. *Janmantara Vishesa Abhyasa*- Environmental derivatives.

Foetus in the womb is believed to be able to recognize love, happiness, sadness and Stress. A pregnant woman's thoughts have a physical connection to her unborn child. Everything the pregnant mother feels and thinks is communicated through neurohormones to her unborn child, just as surely as are alcohol and nicotine<sup>21</sup>. A pregnant

woman's thoughts are the precursor for the neurohormones. When pregnant mother is anxious, stressed, or in a fearful state, the stress hormones released into her bloodstream cross through the placenta to the body. Stress activates the unborn child's endocrine system and influences foetal brain development.

**Satmyaja Bhava:**

Circulation of the uterine fluid, the chemical diversity and their interaction create a certain environment able to support embryo development. *Satmya* (habituation) is the use of such things which do not cause harm to the body even though they are opposite of one's own constitution, habitat, time, caste, season, disease, exercise, water, day sleeps, taste and the like<sup>22</sup>.

*Kalasadmya*: According to *Acharyas*, different types of *Kala* (time) can be interpreted as age of parents and time of copulation. Predominance of *doshas* in body is existent according to age of parents e.g. in old age, Predominant *dosha* is *vata*, in middle age predominant *dosha* is *pitta* and in childhood age predominant *dosha* is *kapha*<sup>23</sup>. These *doshas* affecting whole body also affect *shukra* (sperm), *shonita* (ovum) and therefore the foetus engendered in different ages of same parents have different constitutions as said by Acharya Gangadhara.

Time of copulation: Copulation is indicated only in *anindya kala* for attainment of a child of healthy state. So improper time, season, age of conception, all these periodic factors can influence the health of the foetus by creating a mutagenic or epigenetic influence probably<sup>24</sup>.

*Deshasadmya*: The early environment of a developing child can influence to its genome by epigenetic means. Tribal groups of India have their peculiar genetic makeup. They serve as a unique gene pool, which has evolved in the natural setting over thousands of years. Therefore they have special health problems and genetic abnormalities like sickle cell anaemia<sup>25</sup>. Intrauterine environment is also of great importance as far as foetal growth is concern.

### **Rasaja Bhavas:**

Nutrition is the major intrauterine environmental factor that alters expression of the foetal genome and may have lifelong consequences. Embryo gets nutrition from trophoblast, endometrium and placenta respectively. A *Garbha* is called *Rasaja* (born of the finest form of digested food called *rasa*). The function of *rasa* is seen after the formation of a *Garbha*. The *Rasaja Bhava* (Emerging from *rasa*) or the characteristics apparent in a *Garbha* are growth and development of the body and tissues, a constant supply of energy, nourishment, respiration etc. Poor maternal nutritional status has been related to adverse birth outcomes. Understanding the relation between maternal nutrition and birth outcomes may provide a basis for developing nutritional interventions that will improve birth outcomes and long term quality of life and reduce mortality, morbidity and health care cost. Alterations in foetal nutrition and endocrine status may result in developmental adaptations that permanently change the structure, physiology and metabolism of the offspring, thereby predisposing individuals to metabolic, endocrine and cardiovascular diseases in adult life<sup>26</sup>. There is emerging evidence that the dietary habits of parents, especially woman in the earliest stages of pregnancy, may have an impact on the metabolism of their children. In other words, if you are trying to get pregnant, you really should think twice before you bite that big mac-once for your own waistline and once for your potential child<sup>27</sup>.

### **CONCLUSION**

*Shadgarbhakarabhavas* play significant role towards the development of normal foetus. The healthy progeny may also be achieved by following the rules of Ayurveda. Ayurveda Scholars were very much aware about the six procreative factors (*Shadgarbhakarabhavas*) such as *Matrija* (maternal), *Pitrija* (paternal), *Atmaja* (Soul), *Rasaja* (Nutritional), *Satmyaja* (wholesomeness) and *Sattvaja* (Psych/Mind), the consortium of these procreative factors is necessary thing for healthy

offspring. Health of mother and father (good code of conduct), Practice of wholesome regimen and a healthy mind (psychological status of parents) play a significant role in achieving a healthy offspring. Each procreative factor is allocated a certain function of organogenesis, functional/ psychological phenomenon to develop in the future baby. A lag on the part of any of these six procreative factors may lead to structural, psychological defects. Preconception counseling can play a major role not only in achieving the goal of a healthy progeny, but also in preventing congenital and genetic disorders. The Ayurveda suggest that the prevalence of congenital disorders controlled by various approaches like; *shadgarbhakarabhavas* which play vital role towards the development of normal foetus. Epigenetic studies also prove the effect of positive (*satvik*) and negative (*tamsik*) intrauterine environment on the foetus. Physical and Spiritual well being of the foetus is dependent on the positive intrauterine environment.

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