Garbha Vikruti – Fetal Defects – An Ayurveda View

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ABSTRACT:

Ayurveda the indigenous system of Indian medicine defines the life in very meticulous manner from formation of Garbha (embryo) till death. There are chances of getting malformation and a defect in growing fetus called as fetal defects and defines as Garbha Vikruti in Ayurveda. Ayurveda defines the Dushti of Beeja (Sperm/Ovum), Beejabhaga (Chromosomes) and Beejabhagavayava (genes) under the concept of Anuvamshika Vikara (Hereditary diseases) which can be correlated with modern genetics while, the other causes of the fetal defects are considered under metabolic origin and described as Garbha Vighatakara Bhava. Vitiation of Beeja occurred through the non congenial diet and life style which lead to infertility or Beejadosha. Beeja Dosha forms the genetic basis of fetal defects like cleft leaf, cleft palate, congenital heart diseases. While other factors in Garbha Vighatakara Bhava leads to metabolic causes and lead to defects like Neural tube defects. In nut shell it is clear that in broad sense fetal defects are caused by two basic mechanisms one is of genetic origin and other is metabolic origin.

Key Words: Ayurveda, Beeja, Beejabhaga, Garbha Vikruti, Fetal Defects

INTRODUCTION:

Ayurveda defines Garbha (fetus) as the union of the Shukra (Sperm or Male Gamete), Shonita (Ovum or female gamete), and Jeeva (Soul); which gets implanted in Garbhashaya and grow in it till the birth⁴. While growing in the Garbhashaya there are chances of getting some defects in the Garbha. These defects can be occurred either due to vitiation in the Shukra or Shonita or any other rational causes⁵. These defects are called as Garbha Vikruti in Ayurveda classics. According to Ayurveda there are different causes of Garbha Vikruti like Aahara (Diet) and Vihara (life style) of mother before and during conception, Garbha.
Vighatakara Bhava (teratologic agents) or Garbhopghatakara Bhava etc have been explained in Ayurveda. These Garbha Vighatakara Bhava causes vitiation of Dosha. Vitiated Dosha affects the process of organogenesis and there is defect in growing Garbha. Garbha Vikruti occurred in the form of Hina Anga, Pratyamga Vikruta Anga, Pratyanga and Avayava etc. As per Ayurveda these Garbha Vikruti depends on the intensity of vitiation of Dosha and the time period of gestational month during which the vitiation of Dosha occurred. These two factors are most important and define the extent of Garbha Vikruti. If intensity of Dosha Prakopa is more or severe there are gross anomalies in Garbha and there are severe fetal defects in Garbha or even there fetal death or abortion. As the intensity of Dosha Prakopa is lessening or reduced, the defect in fetus is also less or moderate defects and vice versa. On the basiss of the vitiation of Dosha and extent of Garbha Vikruti the longevity and health of fetus in later life is depended. This article is an attempt to describe the different Garbha Vikruti and its etiological factors (genetical and metabolic) and its clinical impact.

Objectives of the study: To study the concept of Garbh Vikruti & teratogenicity from Ayurveda perspectives

MATERIALS:

Different Ayurveda Classical text books, viz, Charaka Samhita with Sanskrit Commentary of Chakrapani and Hindi Commentary of different Ayurveda scholar, Sushruta Samhita with Sanskrit commentary of Dalhana and Hindi commentary of different Ayurveda scholars like Prof. Ambika Datta Shastri etc Kashyapa Samhita, Hindi and English commentary, different Ayurveda journal articles, different text books of embryology (Prof. IB Singh, Vishram Singh, Lenghmans embryology etc.), different text books of Anatomy like BD Chourasia Human Anatomy, Gray’s Anatomy and different evidence based research articals with the key word searches with Anatomy, embryology, Organogenesis etc. Different Ayurveda research articles with key word search Garbha, Garbha Vikasa, Avayava Utpatti and Garbha Masanumasika Vruddhi etc. In addition different research articles from Pub Med, Med know, Elsevier etc. and also data search from Cochrane Data Base. The information compiled from different text books and e-sources, journals is analysed and discussed and furnished.

Information gathered from all different Ayurveda as well as modern sources was described in the systematic manner to elaborate the, correlation between Ayurveda Avayava Utpatti and Modern Organogenesis and factors causing fetal defects or Garbha Vikruti.
Methods: This article focuses mainly on interpreting and analysing the concept of Garbha Vikruti. Veda, Upanishad and most of the Ayurvedic texts have reference concerned to these concepts. In Charak Samhita Sharira Sthana the abnormalities of the Bija (Shukra and Shonit), Atma Karma (Purvajanamakrut karma), Aashaya (Garbhashaya), Kala (specific season and time duration or abnormality of Ritukala mean menstrual cycle), Matru Ahara and Vihara (diet and life style of the mother are the factors which may influence the growing foetus).

These factors responsible for teratological malformations and are discussed as follows:

Defects in Bija

Though there is no direct correlation of the Bija, Bijabhaga and Bija Bhagavayava, nowadays the correlation of these terms with gametes, chromosomes and DNA has been described by various recent Ayurveda scholars. Vitiation of Bija, Bijabhaga and Bijabhagavayava indicate abnormalities in chromosome, gene and DNA material which cause various somatic as well as gonadal anomalies in progeny or fetus. Vitiated Bija, Bijabhaga and Bijabhagavayava gives rise to sexual and reproductive dysfunction in progeny which is described as Varta, Putipraja and Trunputrika respectively.

Bija: Bija are of two types, viz Matruja (female gamete or ovum or oocyte) and Pitruja (male gamete or sperm or spermatozoa) Bija carries all essential information for formation of the progeny. It is the genetic constitution of an organism which determines different traits of an individual’s such as eye colour, hair colour height, weight, body structure, facial structures, skin colour etc. Dushti of either Matruja or Pitruja Bija due to vitiated Dosha, there is formation of defects in the fetus. When Beeja is completely vitiated there is gross defects in Garbha and there spontaneous abortion of Garbha i.e. Garbhasrava or Garbhapata.

Bijabhaga: It is compared to the chromosomes by today’s Ayurveda scholars. Chromosomes are passed on as units from generation to generation one from each of the parents. These carry the hereditary information in the form of the genes. Different chromosomal anomalies and aberrations are well established in genetics. These anomalies are considered as different Jataja and Kulaja Vikara in Ayurveda.

Bijabhagavayava: This is the most fundamental entity which can be grossly compared to a gene. It is the basic physical and functional unit of heredity which are mainly responsible for expression of a particular trait in an individual that are transmitted from one generation to
another. Bijabhagayavaya Dushti is occurred and considered as main component of the genetic diseases in individuals. All different types of diseases like Sickle Cell Anemia, Thalessemia, Duschens Muscular Dystrophy (DMD), Spinal Muscular Atrophy (SMA) etc are the examples of Bijabhagayavaya Dushti.

Also the there is defects in the organs as – Agenesis, dysgenesis or defects in the formation of organs like lips, palate, tongue etc also have impact of the genes. These different defects observes at the time of birth like cleft lip and palate also micrognathia etc

Aatmakarma: Spiritual and ritual aspect is one of the basic fundamental aspect of Ayurveda and hence believes in birth and rebirths. Also there is concept of soul and salvation in Ayurveda and hence there is concept of deeds of previous birth termed as Purvajanmakru karma of both parents and child. Paapkarma (sins) causes shape of the foetus like Sarpa, Vrucchika, Kushmand etc. The soul undergoes a series of births and deaths depending upon once own good or bad actions. And hence Aitmakarma is the basis of birth of individual.

Defects in Aashaya: It can be considered as Garbhashaya dosha in the form of Yonivypad. Abnormality due to Aashaya can be understood with congenital abnormalities of foetus due to defects in female reproductive organs specially the uterus. In today’s context the malformations of the uterus like unicornuate, septate uterus etc. In short any anatomical anomalies in uterus which prevent or arrest the normal growth of the child is called or considered as Ashaya Dosha according to Ayurveda.

Kaala Dosha: The word can be understood in 3 ways. viz. Kaal as reproductive age of parents, Bijakaal (ovulation period), Garbhavasthakaal (gestational period). Here we are considering all the three reasons for Kaal dosha. Advanced age of both the parents can be associated with congenital anomalies of the child. E.g. In majority case of Down syndrome non-disjunction at meiosis-I observed specifically in baby of mother’s above 40 years.

Matuaaharvihara: In Ayurveda Matruja Aahara and Vihara is kept at central position and considered to be very important to get the healthy progeny. Aahara with Ushana (diet causing heat and temperature in body), Tikshana (potential and penetrating causes tissue injury) and Atiruksha Guna (Diet with very minimal fat and water contents), Ati Amla (diet with excess sour test), Ati Lavana (diet with excess salt) and Ati Katu Aahara (diet with excess spices) are also said to be very
lethal as it may cause the Garbha Pata or Garbha Srava. Also Ati Shrama (over exertion or exercise) and Chakramana (excess walking or running) are also said to be lead to either defects in Garbha or it also may cause the Garbha Srava.

During pregnancy, it can be hard not to give in to those cravings for unhealthy foods. But researchers have found that mothers who eat junk food while pregnant are more likely to have children with mental health problems. Researchers from Deakin University in Australia, alongside researchers from Norway, analysed more than 23,000 mothers who were a part of the Norwegian Mother and Child Cohort study. The result of study reveals the occurrence of the ADHD, ASD, Anxiety and depression in the mothers having non congenial food and junk food. Prenatal advising should discourage the consumption of dangerous foods, beverages, and medications that women commonly report eating during pregnancy. Unpasteurized Animal Products, milk and cheese, Meat-Eating Fish, Unwashed Produce and fruit juices, raw sprouts, caffeine, alcohol; tobacco, organ meat, raw eggs, processed and canned foods, synthetic food with preservatives and vegetables cultivated with excess use of pesticides and fertilizers; all these enlisted are showing untoward effects and causing defect in the developing fetus. In addition there is not only it causing birth defects but also causes the risks for the future diseases like CAD and DM and allergic disorders. International forum for wellbeing in pregnancy defines the risks of the fetal defects as well as risks for future diseases.

**CONCLUSION:**

In nut shell it is clear that in broad sense fetal defects are caused by two basic mechanisms one is of genetic origin and other is metabolic origin. Cleft lip, Cleft palate, microglossia, Congenital heart defects etc are of genetic type while Neural tube defects and other fetal defects are of metabolic type. Genetic basis defects are explained as Bija Dosha and metabolic defects are explained under other Garbha Vighatakara Bhava (Matru Aahara and Vihara).

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