

Prevention of Functional Intrauterine Life Anomalies through Antenatal Care in Ayurveda

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Abstract: Congenital anomalies affect millions of babies worldwide occurring at around 1 in every 33 babies born. Congenital anomalies also known as birth defects, congenital disorders or functional anomalies that occur during intrauterine life, can be identified at the time of birth and sometime may only be detected later in infancy. The most common severe congenital anomalies are Heart defects, Neural tube defects and Down syndrome. According to modern science these congenital anomalies are due to defect in germ cells or somatic cells in intrauterine environment. The interaction of germ cell genotype, geo-climatic conditions and uterine factors, mother's diet and activities as well as nature of Panchmahabhoota in the environment at the time of fertilization determine the healthy state of foetus and newborn. The unhealthy state of factor result in various congenital anomalies. These types of abnormalities happen in Beeja (ovum or sperm), Beejabhaga (chromosome) and Beejabhagaavyaya (gene) level. Antenatal care (Garbhiniparicharya) care mentioned in Ayurveda plays a vital role at excellence in form of fetus, its development without any defects. The present review aims to highlight the role of Garbhiniparicharya in predictive, preventive as well as personalized aspect of congenital disorders.

Keywords: Garbhiniparicharya, Congenital anomalies, Antenatal care

1. Introduction

Congenital anomalies are important causes of still births, infant mortality and are contributors to childhood morbidity. Congenital malformation represents defects in morphogenesis during early foetal life. The estimated 303000 newborn die in 4 weeks of birth every year, throughout the world due to congenital anomalies.^[1] Data reveals that 11.1% of pediatric hospital admissions are for children with genetic disorders, 18.5% are children with other congenital malformations.^[2] According to March of Dimes (MOD) global report on birth defects 7.9 million births (6% of total births) occur annually worldwide with serious birth defects and 94% of these births occur in the 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). Some birth defects are clinically apparent at birth; others may only be diagnosed during later stages of life. Congenital anomalies are categorized mainly in three types: where external form or structure is abnormal is structural anomalies, where function of an organ is affected at cellular level are functional anomalies and where there is any defect at the level of metabolism are metabolic anomalies.

2. Material and Methods

Present work has been done based on critical review of classical information, published research works, modern literature and research works conducted at various institutes. The possible correlation has been made between collected information and has been presented in systematic way.

Factors Responsible for Congenital Anomalies

Genetic factors, such as chromosomal abnormalities account for approximately 15%. Chromosomal anomalies are of two types either numerical i.e. aneuploidy (turner syndrome, down syndrome), polyploidy (triploid or tetraploid) or structural i.e. translocation, deletion, duplication. Environmental factors account approximately 10% of birth defects. There are some drugs like thalidomide, alcohol, tobacco, cocaine, isotretinoin, ace inhibitors and industrial solvents etc. effect on growing fetes in intrauterine life. Thalidomide causes baby born with deformed legs, arms, damage to ears, kidneys, genitals and heart. Extreme use of alcohol during pregnancy causes the infant to develop foetal alcohol syndrome, mental retardation. Maternal infection such as rubella virus, cytomegalo virus, herpes simplex virus, HIV causes severe and more critical birth defects. In *Ayurveda*, the description about the congenital birth defects has been mentioned in many places. 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* (sperm), *Shonit* (ovum), *Aatma* (Soul), *Kaal* (time) and *Matur Aahar* (dietetic 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. Whatever the *Ahar* or *Vihar* the parents are indulged during the conception it will lead to same effects on the child. Morphological alterations functional impairment of CNS, Prenatal-onset growth deficiency and other functional impairments are various teratogenic effects seen in fetus. Various precautions have been described for pregnant lady to avoid any malformation or defect in progeny. These are *Garbhopaghatakara-Bhavas* such as *Matrija* (maternal), *Pitrija* (paternal), *Atmaja* (Soul), *Rasaja* (Nutritional), *Satmyaja* (Wholesomeness), and *Satvaja* (Psych / Mind) to avoid any congenital abnormality in fetuses.^[3] Change in pattern of any of these *Bhavas* may alter the genetic normalcy and may develop genetic disorders as these

Garbhakar Bhavas are strongly related to the organogenesis of fetus.

Concept of Antenatal Care in Ayurveda

Ayurveda has mentioned special aspects regarding *Paricharya* of *Stree Vishistha Awastha* such as *Garbhini Paricharya*, *Sutika Paricharya* etc. The main aims of *Garbhini Paricharya* are to avoid hazardous effect on fetus, to promote normal growth and development of fetus and to conduct normal delivery without any fetal and maternal complications. During first trimester use of cold & sweet liquid diet and milk will prevent dehydration and supply required nourishment to mother and fetus. *Vata Dosha* is responsible for cell division during embryonic development. If there is any imbalance in *Vata Dosha*, it may hamper the normal function and the process of cell division. This may lead to various chromosomal abnormalities either structural or functional like Down syndrome, Klinefelter syndrome etc. In dietary regimen *Ghritta*, milk, *Madhura Dravyas* and medicated *Shalaparni* are having *Vata shamaka* properties thus help to regulate normal functioning of *Vata*. High protein diet like meat soup is advice in fourth month as muscular tissue growth takes place. Fetal growth in 2nd trimester takes place by cellular hyperplasia and hypertrophy. ^[4]Milk, meat and other dairy products are considered best source of proteins for pregnant women. Milk provides nourishment and stability to fetus. Meat helps in maintaining pregnancy, provide nourishment to the fetus and helps in regulation of *Vata Dosha*. In second trimester use of *Gokshura* (diuretic) has been prescribed to prevent water retention problems and edema of feet. Diuretic and anabolic drugs of group *Vidarigandhadi* help relieve emaciation and suppress *Pitta* and *Kapha* in seventh month. *Vasti* is advised to relieve constipation and it may also affect autonomic nervous system governing myometrium. This facilitates the easy delivery of fetus without any complication or defect. *Yoni Pichu* advised in ninth month may destroy pathogenic vaginal bacteria prevent puerperal sepsis and may also soften vaginal passage.

Congenital Anomalies due to Tridosha Vitiating Diet

Pregnant women consuming *Vata Dosha* vitiating diet causes deaf, dumb, hoarse or nasal voice, lame, dwarf, number of body parts. *Pitta Dosha* vitiating diet causes Baldness, premature graying of hairs, absence of hairs on face, tawny color of skin, hair and nail. *Kapha Dosha* vitiating diet causes *Kushta* (leprosy), *Kilas* (type of skin disorder) and congenital presence of teeth ^[5]. Regular use of Wine causes over thirsty, short memory & unstable mind. Frequent use of fish causes fixed eyes or delayed dropping of eye lids. Daily excessive use of sweet substances except milk Suffers from *Prameha*, obesity and dumbness. Daily excessive use of pungent or bitter (*Tikta*) articles suffers from emaciation or edema, weakness and weak digestive capacity. Daily excessive use of astringent (*kashaya*) articles causes black/ dark complexion, suffer from *Anaha*. Daily excessive use of salty (*lawan*) articles causes early wrinkling, graying of hairs and baldness. Daily excessive use of sour (*Amla*) articles causes bleeding disorders, Skin & Eye disorders. Daily excessive use of bitter/ hot (*Katu*) articles causes weakness, possess less quantity of *Shukra*, develops infertility. ^[6, 7]

Prevention of Congenital Anomalies through Antenatal Care

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 *Charaka* and said that suppression of acute desires may cause death of the fetus, but milder ones may ensure abnormalities. *Maharsi Kashyap* has described the adverse effect of the smoking of the mother during pregnancy. If the pregnant mother indulges in such activities they are supposed to produce various congenital abnormalities blindness, sickness, discoloration of the new born baby and even *Garbhapata* or abortion ^[8]. These all type of descriptions *Guna* (good deeds) of parents are concerned with healthy and normal development of organs of the fetal body. *Avagun* (Bad deeds) are concerned with congenital malformations and development errors like cleft palate, hare lip and imperforate anus. ^[9]Those women, who are devotee to God, pursue *Brahman* like deeds and those who observe modest and beneficial life style give birth to virtuous and genius child. Whereas contrary conduct of mother during pregnancy period produces various anomalies in offspring. ^[10]

3. Conclusion

Causes of congenital anomalies are associated with lack of supervision, care and prevention through diet, mode of action and mental health Multiple antenatal factors those influencing physical and psychological development of child are well described in *Ayurveda*. An integrated strategy combining best possible patient care, with prevention by community education, population screening, genetic counselling, and the availability of prenatal diagnosis should be adopted. By following the various principles mentioned in *Ayurveda*.e. Dietary regimen related to *Garbhini Paricharya*, avoiding *Garbhop-ghatkar Bhava* and *Tridosha* vitiating diet during pregnancy can avoid various anomalies during pregnancy. This concept establishes that patient care and prevention are not alternatives but are complementary and inseparable aspects for healthy child.

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