CONCEPTUAL STUDY OF HEREDITY AND SHADGARBHAKARABHAVA WITH SPECIAL REFERENCE TO CONGENITAL ANOMALIES AND ITS MANAGEMENT BY PANCHAKARMA SHODHANCHIKITSA

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ABSTRACTS
The health of the nation depends upon the health of its citizens. Ayurvedic embryology is an interesting branch. Ayurvedic Aachryas of ancient time have explained the concepts of conception, formation of zygote and fetus. It also explain the inheritance of various qualities, formation of different organs, and systems and monthly development of fetus in a detailed and interesting way. Now a day medical science has failed to keep the incidence of congenital malformation under control. Genetics is the science that deals with transmission of characters from parents to offspring. An elementary knowledge of the principles of genetics is essentials for understanding the causation of several diseases. Ayurveda has given various measures to minimize the risks. These measures start before conception. Ayurveda scholars described importance of six Shadgarbhakarabhavas i.e Matrija, Pitraja, Aatmaja, Rasaaja, Satmaja and satvaja. The physical, mental, social, and spiritual well being of person, proper nutrition of the mother during pregnancy and practice of a wholesome regimen, play a prime in achieving a healthy offspring. Panchakarma is a unique experience that leaves the mind and body feeling relaxed, rejuvenated and cleanses the body. Panchakarma advances elimination of toxins from the body. This is how Panchakarma works.

KEYWORDS: Heredity, Shadgarbhakarabhava, Panchakarma Shodhanachikitsa.

INTRODUCTION
Advanced modern medical science has no doubt extended the life span of the human, but the new upcoming health problems are also awaiting their solution. The medical world is really worried about the increasing rate of inborn defects in the new born, which is posing a challenge to the aim of a healthy society.

The various characters that go to make up an individual are dependent, for their creation, partly on the influences of the genes, and partly on the effects of the environment. In the case of a particular character the influence of either heredity or environment may predominate. The principles of genetics are best understood by the study of conditions in which the actions of genes is not dependent on the external environment[6]

In ancient Ayurveda, it given that Karyakaran Bhava Siddhant is responsible for Shrushi Utpatti. From this Sidhan, our Aacharyas told that Garbha Utpatti is also depend on Shadgarbhkarabhava. Those six procreative factors have an important role as causative factors of congenital hereditary, genetic anomalies, before conception and after conception. Aacharya Charak and Aacharya Sushruta has described six Shadgarbhakarabhavas i.e Matrija, Pitraja, Aatmaja, Rasaaja, Satmaja and satvaja which are responsible achieving healthy offspring[11]

Concepts of congenital anomalies caused due to two types of genetic changes, one is heredity and second is environmental acquired factors. Heritable anomalies may be caused by defects in specific chromosomes or in a specific gene. Environmental acquired anomalies occur in offspring due to changes in diet and lifestyle before and after conception of mother of today’s era. Hence in Ayurveda there is some procedure like Panchakram (Shodhan Chikitsa) which can remove the toxins and also improve the metabolism of body.
AIM
Conceptual study of heredity and Shadgarbhakarabhava with special reference to congenital anomalies and its management by Panchakarma Shodhanachikitsa.

OBJECTIVES
2. Literature study of heredity and genetic.
3. Comparison of Shadgarbhakarabhavas with heredity and genetics.
4. Panchakarama Shodhanachikitsa.

MATERIALS
Classical literature of Ayurveda as well as modern medical sciences on the subject of gynecology obstetrics, genetics and heredity from Samhita Granthas and other books and Internet services.

METHODS
This was purely a literature study where the explored literature was analyzed and interpreted.

DISCUSSION
Shad Garbhakara Bhavas[8]
Aacharya Charak and Aacharya Sushruta have given the importance of six Shadgarbhakarabhavas i.e Matrija, Pitrija, Aatmaja, Rasaja, Satmaja and satvaja. The physical, mental, social, and spiritual well being of person, proper nutrition of the mother during pregnancy and practice of a wholesome regimen, play a prime role in achieving a healthy offspring. The above mention Matrija, Pitrija and Aatmaja Bhavas cannot be changed as they come from the parents and Poorvajaanma Sanskaras, respectively but other three Bhavas – factors, namely Satmyaja, Rasaja and Satvaja Bhavas, which can modified the intrauterine environment and psychosomatic health of the mother producing healthy impact on the fetus. It is a known fact now that environmental factors can influence the genome[1]

As Aacharya Sushruta described that the fetal body originating from father, mother, rasa, aatma, satvaand satmaja. The hard parts head-hairs- beards and moustaches, body hairs, bone, nail, teeth, blood vessels, ligaments, dharami, semen etc. originate from father[2]

The soft parts –muscles, blood, fat, bone marrow, heart, umbilicus, liver, spleen, intestines, anus etc are of material origin
1. Matrija Bhavas: As per Aacharya, skin, blood, muscles, fat and soft organs like spleen, liver, lungs, kidney, bladder, large intestine small intestines, caecum, stomach etc are the Matrija Bhava.
Also some other factors like maternal age at the time of conception, health of the reproductive organs of the female, time of conception, bija of mother, maternal diet during pregnancy, drugs-medicines taken by a woman during her pregnancy, and any disease in the mother during her pregnancy, can affect the health of a fetus.
2. Pitrija Bhavas: hairs, nails, beard, body hairs, bones, muscles, blood vessels, and sperm are the Pitrija Bhava. Hence, if a Bija (Sperm) coming from a male is afflicted; a progeny may have congenital or genetic anomalies.
3. Atmaja Bhavas: as per Aacharya, Mana, Indriya, Pran Apan, Prarana, Dharana, Svara Varna, Aakriti etc are the Atmaja Bhavas which are correlated to spiritual, and social behavioral well being of offspring.
Also the soul undergoes a series of births and deaths depending upon her own good or bad actions.
4. Satmyaja Bhavas: Immunity, color, nature, also Medha Virya, Bala, Oja, are the Satmyaja Bhavas. Satmya (habituation) are the things which do not cause harm to the body even though they are opposite of (qualities of) one's own constitution, habitat, time, caste (family), season, disease, exercise (physical activities), water (foods and drinks), sleep, tastes (substances of different tastes).
5. Rasaja Bhavas: Growth, satisfaction, and enthusiasm (like Poshana) all are the Rasaja Bhavas. Rasa is the Dhatu that flows continuously in body and is tasted by the tongue, nourishes the body, and gives pleasure to the mind. It helps for Poshana of body.
6. Sattvaja Bhavas: As per Aacharyas, Bhakti, Sheel, Shauch, Dvesh, Smriti, Moha, Tyaga, Shaurya, Matsarya, Bhaya, Krodha, etc are the Sattvaja Bhavas. Human birth is a very rare privilege, for only man has the possibility of living a conscious, wide-awake, controlled life.[3][4]

HEREDITY
Heredity is the study of how heritable traits are transmitted from parents to offspring. Heritable traits are known to be passed from one generation to the next via DNA, a molecule that encodes genetic information. As per modern science genes, chromosome and DNA are the important factors present in cell for transmission of characters from parents to progeny. Cells of one type differ from those of other types because they synthesize different proteins, including enzymes. The genes that are actually concerned with protein synthesis are referred to as structural genes. They are believed to be present in groups. Each group of structural genes is under the control of an operator gene which stimulates their activity. The group of structural genes along with their operator gene constitutes an operon. The operon is normally repressed by a repressor substance produced by another gene called the regulator gene. Enzymes or other substances produced in the cytoplasm of the cell, and various external factors like hormones and metabolites, can influence the activity of the operon.[5]

MUTATION
Mutations can occur both in somatic cells and in cells involved in gametogenesis. Somatic mutations produce localized changes in the tissue or organ in which they occur and affect a particular individual only. Mutations
in germ cells will be evident in the next generations or several generations also affected before it observed. Mutation may affect the synthesis of all types of proteins. This can be explained by the fact that genes sometimes undergo physio-chemical changes that alter their effect on the character controlled by them. Such a change is called a mutation.[7]

Causes of mutant genes and functional derangements
1. Spontaneous mutation or molecular decay
2. Mutation due to error prone replication bypass of naturally occurring DNA damage
3. Errors due to dna repair
4. Induced mutation caused by mutagens

Mutation occurs due to-
1. By effect on structure
2. By effect on function
3. By effect on fitness
4. By impact on protein sequences
5. By inheritance

66% of cancers causing mutation are random, 29% are due to environment and 5% are inherited.[10]

CONGENITAL ANOMALIES
The study of congenital malformations constitutes the science of teratology. Factors that causes anomalies are called teratogens. The developments of the embryo is dependent primarily on genetic influences. However, environmental conditions can also exert an important effect. Theoretically, it can be presumed that all genetic disorders results from abnormalities in the synthesis of one or more protein. Anomalies may cause due to heredity or environmental factors. Hereditary anomalies may be caused by defects in a specific chromosomes or in a specific gene. Environmental factors are infections, malnutrition, antigenic reaction, drugs and chemicals, hormones and physical factors which causes changes in genetical structure.[6]

PANCHAKARMA SHODHNA CHIKITSA
For purification of body Panchakarma is very important. The genetic mutation due to random unexplained causes is due to Shadagarbhakarbhava. This Shadagarbhakarbhava purification can be done by Panchakarma procedure. Panchakarma is plays an important role in prevention of disease but also for curing the existing disease thus maintaining good health. Ayurveda advocates Shodhana on regular basis as vitiation of DOSHAS sets in whenever favorable condition arises.[3]

Aggregation of few toxins is the natural process of the body as a consequence of different metabolic exercises, which body performs automatically. Panchakarma clenches the aggregated toxins of the body. Also Panchakarma is an procedure which has an ability to cleanse your body of toxins and has natural blood-purifying effects.[9]

CONCLUSION
The ancient Aacharyas of ayurveda put the theory of entire genetics information representing each and every part of the human body was transmitted from parents to the offspring.

According to Ayurveda congenital genetic disorder is caused due to improper management of Shadagarbhakarbhava. Pure Shadagarbhakarbhava can give rise to healthy normal child, whereas impure one can give rise to mutant gene and mutation. For purification of Shadagarbhakarbhava it is very important to have proper Shodhanachikitsa before conceiving. That will help to have mutation free genome. It will lead to normal healthy child. That means which are responsible for mutation. Also the area prone to particular genetic defects will prove this hypothesis, and defective child birth rate is reduced to some extent by Panchakarma Shodhanachikitsa in pre conceive period.

REFERENCE
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