Acharya Charakas’ Analysis on Anuvanshiki Siddhanta (Genetics) in Ayurveda

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ABSTRACT

Ayurveda is science of life dealing with prevention and cure of diseases. The notion of Anuvanshiki (Genetics) has been known to the eminent scholars centuries back. Every life starts from a seed to grow into an individual as we see in process of budding of a plant from a littleseed. Acharya Sushruta & Charaka gave relevant concepts regarding hereditary and its effects during developmental period and even for later stage of life. Genes are the structural & functional unit of hereditary which is encoded with genetic information for an individual. The article is based on the Anuvanshiki Siddhanta with the ideology of modern genetics including teratological impact. The advancement in technology based life has a severe impact over the upcoming progeny (generation) because of the induced stress level, work pressure, sedentary lifestyle which over all affects the fertility rate. It is reviewed under literary methodology by putting together the thoughts of contemporary sciences and classical literature.

KEYWORDS

Anuvanshiki, Beeja, Beejabhaga, Beejbhagavayava, Genetics & Teratology
INTRODUCTION

According to the Ayurvedic philosophy, every action is being done with some purpose (Hetu). The whole Prakriti (nature) has been evolved with a purpose like for instance, Sukha- Dukha (happiness-grief), Purusha or Jeevatma and like Beeja (Shukra - Shonita) came into existence for development of an individual along with its other component parts which are discussed later. The formation of Garbha is the process of union of Shukra (sperm), Shonita (ovum) and Jeeva (life) in the Kukshi (uterus). It also includes the Shad bhavas which also participate in embryogenesis (Matrija, Pitraja, Aatmaj, Satvaja, Rasaja & Satmayaja).

The transmission of characters /traits from parents to child and along with generations is called as Anuvanshiki (inheritance). These are being transferred by the Beeja (ovum-sperm), BeejaBhaga (chromosomes) and Beejabhagavayava (genes). Gene is the principal unit of inheritance. Matraj and Pitrajbhava can be related with the parental imprints. Various genetic diseases are developed due to any deformity in the Beejabhaga, Beejabhagavayava. These factors also carry same type of deformity in next generation. The study of Beeja and Beejbhaga, Beejdosha is useful for Supraja (healthy offspring) and to cure various congenital diseases.

Factors for determining Hereditary Defects:

Acharya Charaka has explained the concept of fertilization and development along with view that a man is born from man but the offspring is not similar. If the abnormality results, it is due to the damaged genetic source of that part & if nothing happens then it’s in normal state. He said that sense organs are self derived and their presence/absence is determined by fate. So offspring are not invariably similar to parents. The genes which carry the genetic basis of all the body parts and thus produce the person having similar body parts but the senses are governed by the deed enshrined in the soul. Thus even in patients of leprosy, the disease is transmitted to the offspring only if the genes are affected otherwise not. On the other hand, in case of senses, it is only by chance that the offspring of a blind man comes as blind.

Causes of Deformity in a Male & Female Child:

The hereditary defect that occurs in fetus is due to the imperfection of Beeja, Beeja Bhaga and Beejabhagavayava. If a woman conceives when her Shonita (ovum) and Garbhasya (uterus) were not completely vitiated but simply afflicted by the circulating Doshas then it may result in
deformity in offspring. She conceives but fetus gets damaged in one or more maternally derived organs (skin, blood) that are affected with morbidity in genes. These vitiated Doshas may afflict the Beeja (chromosomes) or Beejabhaga (genes) from where the organs derived gets deformed. When the Beejabhaga in the ovum of mother which is responsible for the production of uterus is excessively vitiated, then she gives birth to a sterile child and on vitiation of Beejabhagavayava then she gives birth to Putipraja. When along with above symptoms a portion of the genes concerning the organs that characterize a female like breasts, genital organs, hair etc; in the ovum of the mother gets excessively vitiated then she gives birth to a child who is not a complete female but only with characteristics- such type of child is known as Varta. The cases of Suchimukhi and Sandhya yoni can also be referred in genetical defects present in females

**Causes of Deformity in Male Child:**
When the part of the Beeja which is responsible for the production of the sperm in the fetus is excessively vitiated, it results in a sterile child and Beejabhagavayavais excessively vitiated, then it results in birth to a Putipraja. When beejabhagavayava which is responsible for the production of sperm and also portions of the Beejabhaga which are responsible for the production of organs that characterize a male, are excessively vitiated, then this gives birth to a child who is not a complete male but only having masculine characteristics and is known as Tranaputrika.

The occurrence of sexual disorders is due to disturbance in the genetic composition. The Klinefelter’s Syndrome (abnormal male XXY) is a male because of presence of Y chromosome. The testes are poorly developed leading to the sterility and gynecomastia also persists. On the other hand, Turner’s syndrome is an example of female with only one X chromosome. Here subject is always a female. There is agenesis of ovaries and associated deformities include mental retardation, skeletal abnormalities and folds of skin on side of neck (webbed neck).

**Factors responsible for abnormality in fetus:**
In answer to the question put up by Agnivesha, Lord Atreyareplied that due to genetic factors, self deeds, by time period, mother’s food regime and behavioral activities; the vitiated Dosha result in many type of congenital abnormalities. When the developed zygote (union of sperm-ovum) is completely or partially damaged in terms of genetic portion, the progeny has characters of female and male Dwireta(hermaphrodite). Similarly cases of Pavanindriya(devoid of semen) with
damaged genetic portion and reduced reproductive factor results into male and female Sandya (sterility)\textsuperscript{15}.

\textbf{DISCUSSION}

The word, \textit{Beeja} refers to \textit{Moola} (root). It is the main cause of \textit{Uttpati} (origin) i.e. it has capacity to generate and \textit{Shukra-Shonita} are root factors for development mentioned in our literature. The normal Beeja (shukra-shonita) with normal properties can reproduce but due to vitiation by \textit{Dosha}, the fertilization process is not completed. Just like an affected seed, does not sprout into a plant, so is the incapability of Beeja to reproduce. Beejabhagavayava (genes) is fundamental unit of inheritance and it is located over Beejabhaga responsible for transmission of characters from parent cell. If these Beeja are affected by Dosha (genetic mutation) it results in various abnormalities. The signs–symptoms of Turner’s syndrome and Klinefelter’s syndrome are narrated under such chromosomal abnormalities which relate with Varta & Tranputrika. The view on Atulya Gotra by Acharya Charaka is referred to be important.

Detailed examination of Gotra system must be done along with other factors, because marriage between blood relatives can lead to abnormal offspring due to genetic mismatch and hybrid DNA combinations. The system can prevent diseases like cystic fibrosis, phenylketonuria (PKU), galactosemia, retinoblastoma, albinism, sickle-cell anemia, thalassemia, Tay-Sachs disease, autism, growth hormone deficiency, adenosine deaminase deficiency, and juvenile muscular dystrophy which are due to genetic disturbance\textsuperscript{16}.

The concept of Aahar-Vihar Paricharya also affects condition of the fetus. The food, or diet regime, lack of exercise, environmental factors affects growth of Garbha. If growing individual in the uterus is prompt to the certain agents (chemical/physical) abnormalities in development can be hazardous. These agents are called as “\textit{teratogens}”. Teratological agents have wider area of contact on organ to organ which become prone for morphological deformities\textsuperscript{17}.

Birth defect, congenital malformation, and congenital anomaly are synonymous terms used to describe structural, behavioral, functional, and metabolic disorders present at birth\textsuperscript{18}.

The congenital anomalies occur due to intake of drugs, alcohol etc. and mostly during third to eight weeks of gestation like limbs defect due to sedative thalidomide. The consumption of alcohol may result in microcephaly or other structural
Cigarette smoking has been linked to an increased risk for orofacial clefts (cleft lip and cleft palate). It also contributes to intrauterine growth retardation and premature delivery.

CONCLUSION

The whole theory of Genetics (Anuvanshiki Siddhanta) is based upon those 3 fundamental parts which on vitiation results into deformities. Genes are present on chromosomes which carry the genetic basis for an individual’s constitution yet derived from the parent cell. ‘A man is similar to man’ is said on the basis of the chromosomal constitution. The mutations which occur in genes (known as genetic mutation) lead to different types of congenital anomalies. The Beejabhaga and Beejbhagavayava described are similar to chromosome &genes concept of modern science. The related fact about Garbha and AnuvanshikiSiddhanta is beneficial for achieving a better progeny and prevention from the congenital abnormalities.
REFERENCES

(part 2, 2/3). Varanasi-Chaukambha Sanskrit Series Office. P-351.