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Concept of Beej Dosh W.S.R. to Genetic Abnormalities

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Abstract

Ayurvedic literature includes descriptions on genetics. Congenital and inherited disorders like *sthaulya*, *klaibya*, and *prameha*, among others, have been categorized by Sushruta as having a defective genetic component. Ayurveda also emphasized that variations in the hereditary component can contribute to variations in *prakriti*. As a result, inherited factors are crucial to an individual's health and wellbeing, according to ayurveda. Ayurveda uses the phrases *beeja* (chromosome), *beejabhaga* (genes), and *beejabhagavayava* (fraction of part of chromosome) to explain sperm and ovum abnormalities. Hereditary disorders are believed to be caused by the *beeja*, *beejabhaga*, and *beejabhagavayava* in addition to other variables. It is thought that *Bheejabhagavayava* is the subtle stage of *Bheejabhaga*, which carries inherited characteristics. Further, there are 6 factors which take part during the formation of embryos and various body parts. The soft structures of the body like heart, intestine, rectum, muscles, bone marrow, etc. are formed from Matrija Bhava; the hard structures like nails, veins, bones, beard, sperm, etc. are formed from Pitrija Bhava. Thus, Ayurveda lays a deep context regarding the genetics in human beings. The basics of the genomics in modern medicine are the same as explained in Ayurveda.

Keywords: *Beejabhaga*, *Beejabhagavayava*, genetics, hereditary, genomics, matrij bhav

Introduction

The study of heredity is called genetics. In a biological process called heredity, a parent transmits unique genes to their offspring, who then express particular features. Additionally, some disorders may be inherited from parents to their offspring through genes. Genetics is used to describe how he is transmitted. The influence of genetic variables on an individual's physical, mental, and illness development is emphasized by contemporary science. The Samhita, which dates from the second century BC onward, is an example of Ayurvedic literature that provides a similar explanation of genetics. In the Charak Shareerthan, Charak beautifully describes beej, beejbhag, and beejabhagavayava [1]. The financial burden caused by the illness will be passed on to the following generation. The vyadi is also described by Acharya Shushrut as Adibalpravitta.

Concept of Beej Dosh

The idea of hereditary disorders being caused by the Beeja Dosh was well-established in antiquity, and the disease was described in the classics. Some illnesses including prameha, arsha, jatyaandha, and kushta may develop as a result of beej

vitation [2-3]. Although these disorders may harm the parent, they may not always be passed on to the offspring. According to Charaka, if a parent has kushta (a skin ailment) but the part of the beej that forms the offspring's skin is unaffected, the offspring will be born with a healthy skin. However, if the section of the beej that forms the skin is harmed, the progeny will also develop a skin condition. This might occur because genes have an impact on gene expression. The production of garbhashaya in a female kid is caused by the garbhashay beejabhaga in the beej of the mother. She gives birth to a vandhya (sterile child) when this beejabhaga is overly vitiated. When the mother's beejabhagavayava, which is in charge of the uterus' development, becomes vitiated, the baby is born as a pootipraja (died after delivery due to congenital abnormalities). Sushruta outlined the several varieties of napumsaka. Other hereditary sexual anomalies mentioned by Charakaacharya include dvireta, pavanendriya, samskaaravaahi, narashanda, naareeshanda, vakree, eershyaabhirati, and vaatikashanda [4]. It has been discovered that these sexual anomalies are caused by a genetic anomaly. Chromosome abnormalities such as hermaphroditism with a 46-XX karyotype8 can be combined with these. The presence

of both ovarian and testicular tissue in an individual indicates true gonadal intersex or hermaphroditism. They have both male and female masochism on the sex chromosome. The most frequent chromosome complement is 44XX, and there is evidence that one of the autosomes contains chromosomal material. This person may be raised as a boy and may have ambiguous external genitalia and a large penis. During adolescence and menstruation, they may develop breasts. They occasionally generate sperm. They have female reproductive organs and genetic makeup despite having male outward genitalia. 44-XX has ambiguous feminine external genitalia but a male chromosome makeup and reproductive system.

Garbhopaghatakara Bhavas

According to Ayurvedic literature, a pregnant woman should avoid fasting, grief, anger, visiting lonely places, cremation grounds, spending extended periods of time near fire or the sun, as well as *teekshna*, *rooksha*, and *ushnadravayas*. She should also avoid excessive satiation and emaciation. These may be suggested in order to protect against intrauterine growth restriction, intrauterine mortality, and abortion as well as to ensure the foetus receives the correct nutrition. *Garbhopaghatakara Bhavas* can thus have a negative impact on the maintenance of pregnancy as well as the health of the mother and fetus. To counteract the effects of *Garbhopaghatakara Bhavas* and to maintain the pregnancy, *garbhashtapakadravya* (engagement of the foetus) are discussed. The normal growth and development of the fetus can be impacted by maternal, placental, and fetal variables as well as hereditary factors. Maternal variables can include the mother's size, including her height and weight, nutritional status, exposure to loud environments, air pollution, cigarette smoking, alcohol use, drug use, and tobacco use, among other things. Size, microstructure (densities and architecture), umbilical blood flow, transporters and binding proteins, nutrition uptake and synthesis are some of the placental variables. The DNA of the fetus and nutrition production are examples of fetal influences^[5]. Studies show that maternal overeating and undernutrition reduce placental fetal blood flow and halt fetal growth. According to studies, sudden shock can cause hypoperfusion of the brain and other essential organs, which prevents blood from reaching the uterus and the developing fetus^[6].

Atulyagotriya

According to studies, the children of first cousin couples who were married had an elevated risk of congenital malformations, autosomal recessive disorders, and postnatal mortality. Charakacharya articulated the same idea in the *Athulyagothreeya Shareera*. He suggests that male and female should come from distinct backgrounds in order to have healthy offspring.

Discussion

Charak and Susrut provided several references to clarify the ayurvedic notion of genetics and both contained in-depth explanations of *shukra*, or sperm, and *shonit*, or ovum. Additionally, Chakrapani of the *Charak Commentary* provided a clear explanation of how genetic alterations in *beej* create various birth illnesses. *Upatapaptat beejadwa samasat beejat shukrashonit* *Beejajanankabeejabhagat upatapaptat beejadeeti uptapta*. Deep genetic analysis by Chakrapani reveals that *uptapta beej*, which is the term for afflicted genes producing seed, refers to the effects on lesser portions

of gametes. *Yasya Yasya Avaya Beejbhag Upatapato Bavati Angavayavasya vikruti jayate nopjayate, tasya tasya*^[7] Body components that have genetic damage develop abnormalities in those particular parts, but portions without genetic harm do not develop abnormalities.

Conclusion

Shukra and *Shonita*, according to Ayurveda, are in charge of the creation of *garbha*, or sperm and fertilized ovum. These seeds fall under the categories of *beejbhag* and *beejbhagavayava*. The treatise on genetics written by Acharya Charak is more closely related to congenital anomalies and contemporary genetic diseases. The teratogenic effects that manifest as *beej dosh* are clearly explained by the *garbhopghatkar bhav*.

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