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## Conceptual Analysis of the Ayurvedic Perspective on Genetics

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### Abstract

*Ayurveda* has been a science of life for countless years. The *Ayurveda Acharyas* had a thorough understanding of genetics. *Shareer Sthana* of *Samhita's* different chapters beautifully explain the ideas behind *Ayurveda* genetic theory. Although the study of genetics in *Ayurveda* may seem to be a recent development, ancient *Ayurveda Acharya* like *Acharya Charaka* and *Acharya Sushruta* had a profound understanding of the principles of heredity and the nature of traits and personalities. They were familiar with the basics of genetics, such as the factors that affect a child's sex and hereditary defects like lameness. They claimed that the ovum or sperm of the parents, rather than any flaw in the mother or father, was to blame (an accepted fact today). Three genetic units comprise *Acharya Charaka's* description of all of genetics. In three genetic units in the form of *Beej* (Germinal cell), *Beejbhag* (Chromosome) and *Beejbhagavyava* (Gene). He has explained that due to *Vikriti* of *Beeja*, *Beejabhaga* and *Beejbhagavyava* of the parents, there will be *vikriti* or *vyapada* in the progeny. Hereditary and congenital types of Diseases are classified by *Sushruta*. *Ayurveda* mentioned different diseases like *Sithaulya* (obesity), *Klaibya* (impotence), *Prameha* (diabetes) etc. which is due to Defect in genetic component of a person.

**Keywords:** *Beej*, *beejbhaga*, *beejbhagavyava*, *vyapada*

### Introduction

*Ayurveda* has glorious history since ancient era. In *Ayurveda* different concepts of genetics are described. Dominant *Doshas* during union of *Shukra* and *Shonita* determines *Prakriti* of an individual. Hereditary diseases are disease which are caused by abnormal *Shukra* and *Shonita*.

Concept of *Beejbhaag* also mentioned in *Ayurveda* scientific study on genetics started since ancient time.

*Ayurveda* texts have given a detailed description of etiology of various malformation found in the fetus. The concept of hereditary (*Sahaj* or *Adibala Pravrutta*), congenital (*Garbhaja* or *Janmabalapravrutta*) and familial (*kulaja*) diseases were clear. Seed parts (chromosomes) in the seed (*Shukra Shonita*) has been described.

### Aim and Objectives

- To collect, compile and analyse the literature related to genetics in *Ayurveda* classics.
- To collect, compile and analyse the literature of genetics in Modern science.

- To do comparative study of genetics in the *Ayurveda* classics and Modern science.

### Role of Beeja Beejabhaga, Beejabhagaavayava in Few Diseases

*Acharya* had a very clear idea about the hereditary diseases also. Some diseases like *prameha*, *arsha*, *jatyaandha* and *kushta* may occur due to vitiation of *beeja* but even though the parent is affected with these diseases, sometimes it may not be transformed in to off spring. *Charaka* clarifies, if the parent is affected with *kushta* (skin disease) but the part of the *beeja* forming the skin of the offspring is not affected, then offspring born will be having a healthy skin. But if the part of *beeja* forming the skin is affected then the offspring also will have skin disease.

This may happen because gene expression is influenced by genes. *Ayurveda* described about Genetic concept while classifying the Diseases in various seven groups. It Has been nomenclature as *adibala Pravrutta* or *sahaja vyadhi*. There are References available in respect to *Prameha* as *kulaja vikara*.

*Beeja*(chromosome), *Beejabhaga*(genes) and *Beejabhagavayava* (fraction of part of chromosome) were described While explaining the morbidity of Sperm and ovum. Ayurveda also Says that hereditary diseases are Incurable. To name a few diseases Like *prameha*, *arsha*, *yakshma* etc. Manifest due to morbidity in sperm and ovum.

### Discussion

Concept of Congenital and Genetic disorders (*Adibala* and *Janmabalapravritta*) *Acharya Sushruta* has given seven-fold of diseases which come under *trividha dukkha*. *Adibala pravritta* diseases as he mentioned are hereditary in nature and genetically determined depending on the nature of *shukra* of the father and *artava* of the mother.

- *Acharya Charaka* has named this as *kulaja rogas* means the one which runs in family.
- *Acharya Vagbhata* has called it as *kulodbhava* and *Sahaja* meaning present since birth.
- *Acharya Bhela* has called them as *prakriti bhavadoshas*; *kushta*, *arsha*, *rajyakshma*, *madhumeha*, *shvitra* and *apasmara* all have been described under this category.
- *Acharya Charaka* has given *beejabhaga uptapta* as the main reason for *kulajroga*. They have also described *janmabala pravritta rogas* which come under congenital disorders. Vata aggravation or non-fulfillment of longings of pregnant women makes the fetus *kubja* (dwarfa), *kuni* (having a crooked or withered arm or arm without hand or finger), *pangu* (lame, crippled lower limbs), *muka* (dumb) or *minmin* (nasal voice).
- Further they are of 2 types *raskrita*, *dauhridadpacharkrita*. There is also a reference of fetus resembling snake, scorpion, pumpkin and other abnormal shapes due to the sins by mother in previous life or exposure in preconceptional or pregnancy period."
- In *Madhav Nidan*, *shukragata kushta* has been described giving idea about its inheritance from one progeny to other. *Acharya Charaka* has described *suchimukhi yonivyapada* in female newborns known to be due to maternal defects. *Shandi yoni roga*, because of the genetic defect in mother, the *vata* in the fetus destroys its developing reproductive organs in the womb of the mother. In later life, this woman develops aversion for men and breasts do not grow.
- *Acharya Sushruta* has also mentioned *Sahaja klaibya* as one of the types where the child is impotent by birth due to defect in genes.
- *Vagbhata* has described *khanda-aushtha* which is congenital cleft lip. Vitiating of *vata* results in splitting of lips into two parts in utero. It may be due to tetra logical reason but mainly it is x-linked or autosomal dominant and runs in family too (hereditary cause). Reference of *khandatalu* (cleft palate) has also been given either present solo or with cleft lip due to similar reasons.

### Conclusion

As it divided ailments into seven divisions, *Ayurveda* discussed the issue of genetics. It has been referred to as either *Sahaja Vyadhi* or *Adibala Pravritta*. Regarding *Prameha* as a *kulaja vikara*, references are provided. While describing the morbidity of sperm and ovum, *beeja* (ovum), *beejabhaga* (chromosome), and *beejabhagavayava* (partial chromosome) were mentioned. Hereditary illnesses are considered to be incurable according to *Ayurveda*. To name a few, sperm and ovum morbidity causes diseases like *Prameha*, *Arsha*, *Yakshma*, etc. to appear.

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