

GENETICS IN AYURVEDA: VIEW OF ANCIENT SCHOLARS

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ABSTRACT

Science of Genetics in Ayurveda may appear a new topic but ancient *Ayurvedic* scholars like *Charaka* and *Sushruta* understood very well the Principles of heredity and nature of traits or characters. They knew the fundamentals of Genetics i.e. the factors determining the sex of a child, genetic defect in a childlike lameness. They said it was not due to any defect in the mother or, the father but in the ovum or sperm of the parents (an accepted fact today). *Acarya Charaka* has described the whole 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 *bija*, *bijabhaga* and *bijabhagavyava* of the couple, there will be *vikriti* or *vyapada* in the child depending on gender. Hence *Ayurveda* advised cleansing of the male and female body before planning to have a child and to take rejuvenation therapy to restore health which prevents the appearance of genetic disorder.

Keywords: *Beej, Beejbhaga, Beejbhagavyava, vyapada*

INTRODUCTION

In our classical texts genetics is best described by *Acharya Sushruta* and *Acharya Caraka* in *Sharira Sthana*. *Ayurveda* identified three genetic units in the form of *Beej* (Germinal cell), *Beejbhag* (Chromosome) and *Beejbhagavyava* (Gene). *Acarya Carak*¹ has described first about the component of *Beej* whether of male or female and designated them as *Beejbhag* and *Beejbhagavyava*. *Adibalapravritta*² diseases, groups of illnesses which are attributed defects inherent in either the *Shukra* (the male reproductive element) or *Shonita* (female reproductive element) which form the primary factors of being. *Acharya Caraka* knew the fundamentals of Genetics. For instance, he knew the factors determining the sex of a child³

(almost all acaryas supported this view), genetic defect in a childlike lameness or, blindness; he said it was not due to any defect in the mother or, the father but in the ovum or sperm of the parents⁴ (an accepted fact today). In *Atulyagotriya adhyaya* of *Sharira Sthana*, *Caraka* has described that how there will be a specific sex in the uterus or in a twin or multiple pregnancy³. The birth of male or female child in a twin or multiple pregnancy depends on the manner in which *vayu* divides the *Bija* (zygote), if *Vayu* divides the *bija* in such a way that one part has predominance of *shukra* and the other of *artava* then from former part a male child will be born and from later the female³. *Acarya Caraka* has explained further

that the teratologic abnormalities depend upon the condition of *bija*, not on the physical status of the couple⁴. All the ancient scholars have explained the six factors, which are taking part in the formation of embryo and various body parts⁵.

Shukra & Shonita (Artava or, Rajah) and its Vikriti:

According to *Ayurveda* the human body is made up of seven *dhatu*s and seventh *dhatu* is *shukra* which takes part in the formation of *garbha*⁶ (helps in conception) from male partner side. Although Imagination of *Stri Shukra* has done by *Acarya Susruta, Ashtang Sangrah, Bhavprakash, Harita* and *Arundatta* but this *shukra* is not participating in the formation of *garbha* (in process of conception). As per *Susruta* the blood collected for whole by both the *dhamanis* (uterine vessels and their endometrial capillaries) assuming slight black colour & specific odour is brought downwards to vaginal orifice by *vayu* is called *shonita* or *artava*⁷. According to another scholar *Vagbhata*, the blood reaching uterus and coming out for three days in every month is called *Artava*⁸ i.e. *artava* can be taken as menstrual cycle in today scenario. They have also mentioned age of menarche and menopause 12 yrs and 50 yrs of age respectively^{7,8}.

Acarya Susruta has described 8 *shukra* and 8 *shonita doshas* in *Sharira Sthan, Shukra-Shonita-Shuddhi adhyaya*⁹. *Acarya Susruta*, just after describing eight disorders of *shukra*, has enumerated eight disorders of *artava*¹⁰ i.e. One from each *dosha*, and *rakta* (total four), three from combination of two *doshas* and one from combination of all the three *doshas*. After describing the clinical features of all abnormalities of *shukra* and

shonita he has also explained the treatment of all the curable problems.

Bija, Bijabhaga and Bijabhagavayava & its vikriti:

Ayurveda considered three genetic units in the form of *Beeja* (Germinal cell), *Beejbhaga* (Chromosome) and *Beejbhagavyava* (Gene). *Acarya Charaka* speaks first about the component of *Beeja* whether of male or female and designated them as *Beejbhaga* and *Beejbhagavayav*¹. Commenting on these terms, *Acarya Chakrapani* has clearly stated that the smallest unit founding in *Shukra* (Sperm) & *Shonita* (Ovum) can be considered as *Beeja*¹¹ of male and female respectively, which may compare with the male and female gametes i.e. sperm and ovum. The *Beejbhaga*¹¹ is the component lying inside the *Beeja* and holding responsibility of development of different body organs and tissues of the body and it may compare with the Chromosomes which are passed on as units from one generation to other generation one from each of the parents. *Beejbhagavayava*¹¹ should be taken as further more subtle stage of *Beejbhaga* carrying hereditary characters and it may compare with the gene which is the functional unit of heredity and mainly responsible for expression of a particular trait in an individual.

The birth of male or female child in a twin or multiple pregnancy depends on the manner in which *vayu* divides the *Bija* (zygote), if *vayu* divides the *beeja* in such a way that one part has predominance of *shukra* and the other of *artava* then from former part a male child will be born and from later the female¹². High lightening the factor responsible for hereditary diseases, *Charaka* has said that it is due to vitiated or defected *Beeja* (Ovum or sperm) and *Bee-*

jbhaga (chromosome), which is responsible for formation of defective or vitiated particular body part or, organ¹³. If parents have certain diseases like *kushtha*, then it is reflected in the *bijabhagavayava* and hence can cause same illness of the offspring¹⁴.

Acarya Caraka has explained further that teratologic abnormalities depend upon the condition of *bija*, not on the physical status of the couple. In other words, what so ever part of *Bija* is defective, the body part developing from that portion of *bija* will be abnormal¹³. E.g. If the portion of a *bija* of a *Kushthi* man responsible for formation of skin is defective then the only born child will have *kushtha*¹⁴. However, if that part is not abnormal then the child will be healthy. He has described that due to *vikriti* of *bija* (gametes), *bijabhaga* (chromosome) and *bijabhagavayava* (gene) of the couple, there will be *vikriti* or *vyapada* in the child depending on gender¹. When the *Beejbhag* in ovum is responsible for the development of *Garbhashaya* is excessively vitiated, then woman gives birth to a *Bandhya*¹⁵ (sterile) female child and similarly when the part of the *Beej* which is responsible for the production of the sperm in the foetus is excessively vitiated, then this gives birth to a male sterile child¹⁶. When the *Beejbhagavayav* (a fraction of the part of the *Beej* i.e. ovum) of the mother is excessively vitiated she gives birth to a *Putipraja*¹⁵ (who delivers dead fetus¹⁵) and in case of same condition in sperm, it gives birth to a *Putipraj*¹⁶. The term *Puti* also implies a child having deformed limbs and organs¹⁵. When *Beejbhagavayava* which is responsible for the production of uterus and also the portion of organ that characterize a female e.g. breast, genital organs etc. the ovum is excessively vitiated when she gives birth to a child who

is not completely female but only having feminine characteristic in abundance, known as *Varta*¹⁵ and similarly when the *Beejbhagavayav* which is responsible for the production of sperm and also portion of *beejbhaga* which are responsible for the production of the organs that characterize a male, are excessively vitiated, then this gives birth to a child who is not complete male but only having masculine characteristics in abundance, known as *Trinputrika*¹⁶.

Bhavas involved in the formation of embryo:

There are six factors which are taking part in the formation of embryo and various body parts. All the soft structures i.e. heart, spleen, intestine, rectum, muscles, blood, lipid, bone marrow, umbilicus etc. Of the fetus are derived from the mother, called *Matrija bhava*¹⁷. Likewise all stable or hard parts i.e. hairs, vein, arteries, nails, bones, beard, sperm etc. Of fetus are derived from the father, called *Pitrija bhava*¹⁸. Just like above *Atmaja*, *Satmayaja*, *Satvaja* & *Rasaja bhavas*⁵ are also taking part in the formation of a fetus in the uterus.

CONCLUSION

Ayurveda Science had basic or fundamental knowledge on genetics since very early time period when there was no existence of concept like Chromosomes, genes, DNA, genome etc. Our classical Scholars have explained the facts that genetic disorders are not due to any defect in the mother or, the father but in the ovum or sperm of the parents (an accepted fact today), So they advised some ritualistic therapy and cleansing (*Shodhana*) of the male and female body before planning to have a child and to take rejuvenation therapy to restore health which prevents the appearance of genetic disorder. Whatever our *Acaryas* have told in our clas-

sics about genetics should be scientifically validated to give better explanations worldwide.

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