

## A COMPARATIVE STUDY RELATED TO THE CONCEPT OF YAMLA GARBHA (TWINNING) IN AYURVEDA AND MODERN EMBROLOGY

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### ABSTRACT

*Ayurveda* encompasses many concepts. It requires extensive study to discuss and understand them all. There is need of increased awareness about *Ayurveda* and concepts mentioned here in improved and emphasized way. The literature on *Garbha Sharir* in *Ayurveda* by *Acharyas* is framed in concise way but the meaning lies in depth. To get knowledge and explanations of the concept can simply be related with modern science. In the present study, the concept of *Yamla-Garbha* (twin pregnancy) has been taken. The modern science has reached levels of excellence in many branches like embryology, genetics etc by their dedicated researches. This work is a resource for gaining knowledge of twinning in both science whether *Ayurvedic* or the contemporary science.

**Keywords:** *Garbha, Beeja, Yamla, Vayu*, Twinning, Cell-division.

### INTRODUCTION

To know the process of *Yamla-ta*(twinning) in *Garbha*(fetus)one must have knowledge regarding concept of conception. The familiarity of *Sharir* begins with understanding of *Garbha*. The term embryology is the science of origin and development of the individual from fertilization of an oocyte to end of the embryonic and fetal periods<sup>1</sup>. In *Ayurveda*, the union of *Shukra-Shonita* and *Jeeva* in the *Kukshi* is known as *Garbha*<sup>2</sup>.The term *Beeja* refers to sperm and ovum which are the prime factors for *Uttpati* of *Garbha* (fetus)<sup>3</sup>. *Shukra* is said to be viscous, sweet, heavy and capable of reproducing<sup>4</sup>. It is similar with the sperm cell.

Similarly, *Aartva* is the female *Beeja* that is responsible for fertilization which is red in colour and discharged forth monthly<sup>5</sup>.

Now the *Garbha* is formed, it is similar to the zygote formed by fusion of sperm-ovum. Through process of cleavage it reaches to a stage of blastocyst which will implant in the cavity of uterus.

The process of hatching of blastocyst from zona pellucid may result in constriction of emerging cells and separation into 2 discrete entities. There is gradual decrease in average thickness of zona pellucida with increasing maternal age, which can be related to immune in frequency of monozygotic

twinning with increased maternal age. The resultant twins have same genotype but differences in phenotypes<sup>6</sup>. The nurturing of 2 conceptuses at same time is termed as twinning. Two infants born at same time are

called twins, birth of three (triplets). On basis of zygote, we can see whether the twins are fraternal or identical<sup>7</sup>. The types of twin can be di-zygotic or mono-zygotic. Features are tabulated in the following table (1.1):

MONO ZYGOTIC TWINS	DIZYGOTIC TWINS
Form from single zygote	Form from two zygotes
These are more common	These are less common
Genetically identical	Genetically non-identical
Twins are of the same sex	Twins are of the same or different sex
Mostly diamniotic, monochorionic with single placenta	Mostly have two amnions, two chorions, and two placenta
Often referred as Conjoined twins	Not seen as conjoined twins

**Table 1.1: Differences in the Two Types of Twins**

When zygote is split into two the twin is formed and the female or male character of the same is determined by the relative predominance of ovum or sperm respectively. When the zygote is bifurcated with dominance of sperm the women delivers male twin jointly or with that of the ovum she delivers female twin jointly. A woman delivers that number of children due to past deeds and god's pleasure in which the excessively aggravated *Vayu* afflicts the union of sperm and ovum splits the same variously<sup>8</sup>.

*Acharya Charaka* in the chapter entitled *Atulya- Gotrya Shariram* mentioned fact that due to past deeds and uneven bifurcation of union of sperm and ovum one in the twin develops more in the womb while the other one is less<sup>9</sup>. Thus, there is also differentiation in the twin. Such a clinical case can be related to the parasitic twin. When one of the conjoined twins remain rudimentary due to diminished blood supply and grow like a parasite from body of well developed co-twin, it is known as parasitic twin<sup>10</sup>.

*Acharya Sushruta* elucidated the similar concept of twins, that due to aggregation of *Vayu*, the fertilized ovum or zygote splits into two parts and is known as "*Yamla*"<sup>11</sup>. In *Astang Hridaya*, the *Vata* is responsible for the division of zygote in one or more than one that are delivered<sup>12</sup>.

### DISCUSSION

When the two germ cells unite they form a zygote. The cellular structure grows further and divides into an individual or twins or triplets. According to *Ayurveda*, twinning means *Yamla Garbha*.

The *Yamla* word means "twins, double or a pair" and *Garbha* is the fetus<sup>13</sup>. Twinning refers to development of 2 embryos depending upon whether they have developed from division of one fertilized ovum in 2 or they have developed from two separate sperms with 2 separate ovum. The contemporary science explains this fact on basis of cell division. The alignment of maternal or paternal chromosomes along a common spindle apparatus marks creation of zygote.

At this point, cell enters anaphase of mitosis in which, chromatids separate and each set of 23 chromosome pairs are drawn

to opposite sides by cell.Cytokinesis then begins; end of final mitosis phase, telophase, and cell divides in two daughter cells, diploid chromosomes.

The union of 2 germ cells to form a zygote, the chromosome number is restored to normal (diploid chromosome). Thus, because of meiosis the chromosome number is maintained in each species<sup>14</sup>.

### CONCLUSION

The life begins as a single cell- the Zygote formed by the union of male and female gametes (*shukra-aartva*). It develops by the multiplication and differentiation of cells. The related concept of the *Yamla-Garbha* and twinning is not far different from each other. *Acharyas* stated the cause of *YamlaGarbhaUttpati* is due to *Apana-Vayu*. As per modern concept the process of cell division (cytokinesis) marks the formation of Zygote.

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