

AN ANALYTICAL STUDY OF MATRIJA BHAVA WITH SPECIAL REFERENCE TO MODERN ORGANOGENESIS

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ABSTRACT

According to Ayurveda, in order to achieve the *Purusharatha Chatushtya*, or *Dharma*, *Artha*, *Kaama*, and *Moksha*, *Swastha Sharira* is required. Hence, primary objective of Ayurveda is the preservation and defence of *Swastha Sharir*. The development of the human body was not a chance event in nature. The human body's ability to exist in the right size, shape, and weight is a miracle of nature. Under the *Sharira Shastra*, knowledge of *Sharira* is studied in various fields, including Anatomy, componential Anatomy, and embryological Anatomy. It also encompasses the organogenesis of different organs.

According to Ayurveda *Acharya*: In order to produce an embryo, four components are required: "*Ritu*" (menstrual cycle), "*Kshetra*" (uterus), "*Ambu*" (*Ahar Rasa*), and "*Beeja*" (*Shukra* and *Shonita*).^[1] These four elements assist in forming the embryo, although distinct organs later grow in the foetus with the aid of various *Bhava*. They are referred to as *Shada Bhava*. For the creation of a *Sharira*, all 6 *Bhava* are necessary. Out of them, *Matrija Bhava* plays a role in the development of nearly all of the body's soft organs. Different ideas on organogenesis have been established in modern science. Organogenesis is the anatomical creation of organs. Histological differentiation is the process through which developing cells and tissues acquire unique morphological, physiological, and biochemical characteristics.

KEYWORDS:- *Shada Bhava*, *Matrija Bhava*, Organogenesis.

INTRODUCTION

The component of the human body known as an organ acts as a tool for the organism's environmental adaptability. The organ formation is the outcome of a lengthy process of the selection of beneficial adaptations of the organism to particular conditions of nutrition, reproduction, and strengthening of such adaptations from generation to generation.

An embryo is created by the union of sperm and ovum (*Shukra* and *Shonita*) in the womb, together with *Prakriti*, its sixteen *Vikara*, and the *Aatma*. This embryo divides and develops into a foetus at various stages. The *Teja* (also known as latent heat), stimulates tissue metabolism. It is kept in a liquid condition by the *Apa* (water), the *Kshitija* (earth) causes the solidification of various tissues that are still in a liquid state, and the *Akasha* aids in its growth and development. *Sharira* is the name for a fully formed foetus with all of its components. And this is how a foetus grows.

Different Acharya have varying opinions on how to properly emphasize organogenesis in Ayurveda. Similar to how the concept of the three germinal layers is presented in modern science, *Shada-Bhava*, which encompasses all of the physical and psychological *Bhava* of an embryo, is presented by Ayurveda. According to Ayurveda *Shada-Bhavas* are essential in development of foetus.

These *Shada Bhava* as described by Acharya Charaka, Sushruta and Kashyapa are- *Matrija*, *Pitrija*, *Aatmaja*, *Satymyaja*, *Satvaja*, and *Rasaja*. Among these *Shada Bhava*, *Matrija Bhava* are very important, reason being it contributes in the development of maximum number of organs, most of them being soft organs. These *Shada Bhava* also originate from *Panchamahabhuta*.

- According to *charaka samhita*

Acharya Charaka has described *Shada Bhava* in the "*Khuddika garbhav Kranti*" of *Sharir Sthana*. *Matrija Bhava* includes *Twacha*, *Rakta*, *Mamsa*, *Meda*, *Nabhi*, *Hridaya*, *Kloma*, *Yakrita*, *Pleeha*, *Vrikka*, *Purishadhana*, *Aamashaya*, *Pakvashaya*, *Uttarguda*, *Adharguda*, *Sthulantra*, *vapavahana*.^[2]

- **According to *sushruta samhita***

Acharya Sushruta has described *Shada Bhava* in the "*Garbhav Kranti*" of *Sharira Sthana*. As per Acharya Sushruta *Matrija Bhava* are: *Mamsa, Rakta, Meda, Majja, Hridaya, Nabhi, Yakrita, Pleeha, Aantra, Guda*.^[3]

- **According to *kashyapa samhita***

Acharya Kashyapa has pronounced *Shada Bhava* in the "*Garbhavkranti Shariradhyaya*" of *Sharira Sthana*. *Matrija Bhava* are *Rakta, Mamsa, Nabhi, Hridaya, Kloma, Yakrita, Pleeha, Vrikka, Basti, Purishadhana, Aamashaya, Uttarguda, Adharguda, Kshudrantra, and Sthulantra*.^[5]

Detailed study of *matrija bhava*

1. *Twacha*- Similar to how cream forms on top of boiling milk, *Shukra and Shonita's* forms seven layers of *Twacha* by the heat of *Tridosha*.^[6]
2. *Hridaya- Prasada Bhaga* of *Rasa* and *Kapha* is the source of development tof *Hridaya*^[7] *Pranavahi Dhamani* are sited in the *Hridaya*. It is located in the centre of the thoracic cavity. *Pleeha* and *Phuphusa* are situated below and left, while *Yakrita* and *Kloma* are present its below and right. *Chetana* dwells in *Hridaya*.

Acharya Charaka provided a few details regarding the development of *Hridaya*. *Sukha-Dukha* and other sensations are also expressed after the *Indriya* developed in the body. foetus uses the mother's heart to communicate all of his desires. In the third month, the mother is hence referred to as "*Dau -Hrida*."^[8] It denotes that Acharya Charaka acknowledged that the heart develops during the third month of foetal life. He claimed that because *Garbha's Hridaya* is derived from his mother's, *Garbha* uses *Rasavahi Dhamani* to communicate all of his demands.

Acharya Sushruta has stated that *Hridaya* develops in the fourth month of *Garbha* -In the fourth month, all the organs are clearly expressed, *Hridaya* is also formed in this month. So, *Garbhini* is called "*Dauhrida*"^[9]

3. *Yakrita: Yakrita* of *Garbha* is formed from the *Rakta*^[10] *Yakrita* is also called *Moola* of *Raktavahi Srotasa*.

4. *Pleeha*: Just like *Yakrita*, *Pleeha* is also formed by the *Rakta* in *Garbha*. *Pleeha* is situated below Heart and towards the left side.^[11]
5. *Nabhi*: It is claimed that a cord connects *Naabhi* of *Garbha* and *Hridaya* of Mother, allowing all of Mother's *Bhava* to be conveyed to *Garbha*. *Acharya Charaka* has involved *Nabhi* in the *Koshthanga*^[11] and also one of ten *Pranayatana*.
6. *Unduka* - *Unduka* is formed from the *Mala* part of *Rakta Dhatu*.
7. *Antra, Guda and Basti*: *Antra*, *Guda*, and *Basti* are formed when the heat of *Pitta*, combined with the essence of *Rakta* and *Kapha*, interacts with *Vaayu*.
8. *Rakta/Lohita*: As described by many *Acharya*, *Rakta* is formed through a variety of processes.

Charaka Samhita: *Rasa Dhatu* using *Ushma* of *Pitta* is converted into *Rakta dhatu*.^[12]

Sushruta Samhita: When *Rasa dhatu* and *Aapya* enters *Yakrita* and *Pleeha*, *Rasa dhatu* becomes pigmented and get converted into *Rakta dhatu* as a result.^[13]

DISCUSSION

This is a universal concept that male and female gametes combine to form an embryo. The same fact that *Garbha* is created by the union of *Shukra*, *Shonita*, and *Jeeva* was stated in every *Ayurveda Samhita*. *Garbha* develops with the aid of nutrients absorbed from the mother's *Ahaara Rasa* throughout the gestational period. There are other elements necessary for the formation of *Garbha*, in addition to *Shukra* and *Shonita*, include *Garbha Samagri* (*Ritu*, *Kshetra*, *Ambu*, and *Beej*), *Shada bhava*, *Garbhiniparicharya*, etc.

All the *acharyas* have considered that all the *Mridu* organs means soft organs are formed by *Matrija bhavas*.

When the sperm and ovum fuse together, then actually there occurs a fusion of genetic content of both the gametes. The two different genetic contents fuse and give rise to a new genotype which is different from the two original gametes.

By understanding concepts of modern science *Matrija Bhava* are actually two in number:

- (1) Nuclear DNA of ovum
- (2) Mitochondrial DNA of ovum

The mother's extranuclear and nuclear DNA both contribute in passing on the genetic traits.

Matrija contribution as per Ayurveda concept can be studied under two headings:

(1) *Shonita (Beeja)* part (2) *Kshetra* Part

It indicates that the mother is giving the *Shonita (Beeja)* for zygote formation as well as the *Kshetra*, or space, for foetus implantation. Therefore, the *Shonita* and *Kshetra* portions are essentially *Matrija Bhava*, or mother's contributions. In Ayurveda *Samhitas*, according to the proverb "*Mriduni Matrijani*," all of the *Matrija Bhava*, or organs, that are developing from the mother part, are soft or *Mridu* in nature.

Some of the supporting evidences are visible when bringing the modern science around "*Mriduni Matrujani*" topic.

- i. The nourishment of the body's soft organs by mitochondria has been mentioned in the writings of some modern writers. It is also known that the mother's ovum's mitochondrial DNA aids in fertilisation. Therefore, it can be inferred indirectly that *Matrija Bhava*, which is a component of the mother's contribution, is where soft organs develop from since they are fed by mitochondria.
- ii. All the organs evolving from *Matrija Bhava* are endodermal and mesodermal in origin.
- iii. Oestrogen hormone, a component of maternal hormones, aids in the development and nutrition of a few soft organs.

Individual discussion about the development of organs developed from *Matrija Bhava*:

Hridaya:

Uttapati of *Hridaya* from *Rakta* and *Kapha* is stated in *Sushruta Samhita* of Ayurveda *Shashtra*. According to contemporary knowledge, the heart is mesodermally derived. Comparable to *Kaphatmaka* origin is mesodermal origin. Around the blood islands, two angioblastic cords initially formed. Future fusion of the cords creates the heart. Thus, the origin of the blood island can be compared to that of the *Raktatamaka*. Its embryological growth and position in the *Sushruta Samhita*, where the *Pleeha* lies below and to its left while *Yakrita* is below right, also the *Dhamaniya* passes through it, both support the notion that it is a heart.

Yakrita and Pleeha

According to Acharya *Sushruta*, *Shonita* creates *Yakrita* and *Pleeha*. Additionally, it is known that *Yakrita* and *Pleeha* serve as *Raktadhara Kala*'s residences. They both served as

the location where *Ras Dhatu's Ranjan* forms *Rakta*. Similar to *Yakrita* and *Pleeha* in Ayurveda, the liver and spleen are recognised in modern science as the sites of hemopoiesis. *Yakrita* and *Pleeha*, which are derived from blood in Ayurvedic science, are essentially mesodermal in nature.

Organs of gastrointestinal tract

Most of the organs of gastrointestinal tract are endodermal and mesodermal in origin.

Aantra and *Guda* develops from the essence of *Rakta* and *Kapha Dhatu*, according to Ayurveda *Shashtra's* description. The mesodermal origins of these *Rakta* and *Kapha* can be compared, and the excretory portion of *Rakta dhatu* also forms *Unduka*. The anal canal and rectum have mixed ectodermal and endodermal origins, with the lower part of the anal canal being ectodermal in origin.

Twacha

According to *Acharya Sushruta*, *Twacha* is formed by *Shukra* and *Shonita Abhipachana*.

In modern science, skin development is ectodermal and mesodermal in origin.

Twacha is a *Matrija Bhava* because as the hormone oestrogen aids in skin development and is a component of the mother.

Basti

Acharya Sushruta mentioned that, the *Basti* is formed by the essence of *Rakta* and *Kapha* combined with *Vaayu* and the heat of *Pitta*. Instead, of focusing simply on the urine bladder, the majority of the *Acharya* considered the entire urinary system from the name *Basti*. Urinary bladder is endodermal and mesodermal in origin. So, it also shows a little bit resemblance with *Raktatmaka* and *Kaphatmaka* origin.

CONCLUSION

Science is the outcome of human curiosity, which led people to study, analyse, and draw conclusions about numerous natural processes that occur in the body through their microscopic research. Ayurveda is a component of this science as well, hence it requires extensive investigation to back up all the claims made by the *Acharyas* in antiquity. A condensed overview of the subject is offered in accordance with this goal after explaining the entirety of the literature connected to *Matrija Bhava* and embryonic development.

After a thorough examination of the matter and discussion of it, it is concluded that the knowledge of the ayurveda acharyas is unquestionably accurate.

The Beeja (sperm and ova), which is Shukra in the male body and Shonita in the female body, is the source of all life. The zygote, which grows into a foetus, is actually created by the union of *Shukra* and *Shonita*. Along with *Shukra* and *Shonita* other things are required for formation of *Garbha*. They are *Ritu* (menstrual period), *Kshetra* (uterus) and *Ambu* (*Aahara Rasa*). *Shada Bhava* are essential to the embryonic development of the organs and systems. The majority of *Mridu*, or soft organs, develop from *Matrija Bhava*, or from support from the mother's side.

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