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Ayurveda
Critical Appraisal of Embryological Concepts (Garbhasharir) Delineated in Ayurveda

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Abstract

Background: From conception to death, Ayurveda focuses on the health and illness of the human body. Ayurvedic compendia mention Garbhasharir (embryology) as the primary goal (Healthy Progeny). There are several differences between modern embryology and Ayurveda when it comes to describing the creation of the embryo, development of the foetus, and structural teratogenesity in body parts. For example, there are various quotations from Garbhasharir that need to be interpreted in an acceptable manner in Brihattrayee (Three main compendia of Ayurved) and their commentaries.

Aims: Using terms from Grabhasharir articulated in Ayurvedic lexicons in connection to embryological notions, this critical assessment attempts to explain and analyse the processes associated with the genesis of progeny using contemporary scientific knowledge.

Materials Methods: To find the secret essence of embryology mentioned in Garbhasharir chapters, Brihattrayee and other pertinent material were rigorously analysed.

Results: Ayurvedic embryology is founded on its basics, such as the "Tridosha" (three physical humours), the "Triguna" (three psychological humours), and the "Panchamahabhoota" (four essential aspects of life) etc. When it comes to the process of creating new life, the Ayurvedic compendia demonstrate that there are two basic sorts of processes (dependent and independent). There are two types of processes: those that can be modified and those that cannot be modified.

Conclusions: Even though the concepts of embryology described in Ayurveda dates back to centuries, they are still relevant in the current scienti□c world provided proper insight is applied to interpret them .

Keywords: Ayurveda, Embryology, Garbhasharirfactors that may be assessed as a result of genesis

The foundation of yurveda is built on a set of timeless principles, such as Tridosha, Triguna, and Panchamahabhuta, among others. Garbhasharir, on the other hand, adheres to the same fundamental

ideas. When it comes to studying live species' genes, hereditary variation, and other aspects of genetics, it is known as genetics. [1] A close examination of the Ayurvedic compendia's description of Garbhasharir reveals that the origin of offspring may be divided into two categories: dependent and independent. The terms "dependent processes" and "independent processes" refer to the ability of parents to alter the behaviour of their children. Pregnant women are advised to follow Suprajanan's recommendations in order to ensure a healthy foetus.independent elements for facsimile are those things that are beyond of the control of the parents at the time of birth and cannot be managed by precautions or virtuous acts. Most of an infant's characteristics may be traced back to these two elements alone. Ayurveda mentions just the perception of Atma (soul) when it comes to the production of Garbha. Additionally, Garbhasharir goes into detail into things like sex determination, foetal abnormality, and Prakruti.

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Ayurveda's many genetic principles need to be explained in light of current understanding. The goal of this research is to evaluate the different Ayurvedic lexicons' descriptions of Garbhasharir's embryological notions critically.

Materials & Methods:

With their comments, notably from Sushruta Samhita Sharirsthana as it was thought that secret notions of Genetics are exemplified in it, supporting texts of modern science, references from the internet and publications were assessed for this research.

Observations & Results:

Analysis of Garbhasharir literature indicates the following processes, which may be classified as dependent, independent, or both (Table-1).

Shrushtiutpatti (Evolution): Ayurveda's conception of embryology dates all the way back to the beginning of time. The development of the universe serves as a classic illustration of the separate variables that contribute to the genesis of a foetus. The following is Sushruta's brilliant explanation of Abiogenesis.

When it comes to the origin of all things, the Avyakta (unmanifest) is a contributing source of all creatures, causeless itself, represented by the eight forms of the Satva (purity), the Raja (motion), and Tama (inertia). Avyakta, Mahat (principle of intelligence), Ahankara (egoistic inclination), and the Mahabhutas are the eight kinds according to Sankhya philosophy (apparent elements). It is from this Avyakta that the like-element Mahat arises, and it is through this that the three types of Ahankara, Vaikarika, Taijasa, and Bhutadi, all of which have the same properties, are produced. [2]

There are a variety of manas-prakruti (psychic constitutions) that have been developed based on the Tanmatras are Tanmatras, which are Tanmatras, which are Tanmatras, which are Tanmatras, which are Tanmatras, which are Tanmatras [4]

Preconception Factors: For Ayurveda's objective of healthy offspring, it stresses pre-conceptual care. Rutumati (menstruating lady) has been advised to follow the Rutuaticharya teachings. When following celibacy, the lady should refrain from daytime slumber and many other activities throughout her menstrual cycle. The mother's lifestyle and conduct throughout the Rutumati period have a

significant impact in shaping the character of the foetus to come. [5] Prior to conception, the parents' diet and lifestyle play a significant role and have a direct impact on the characteristics of the embryo. [6] [7]

Formation of Embryo & Soul: Pregnancy occurs when four components come together properly: Rutukal (the proliferation phase of the menstrual cycle), Garbhashaya (the uterus), Ahar-ras (the nourishment) and Shukra-artav (sperm and the egg). In the same way, sprouts emerge from the combination of season, soil, water and seed. As a result, boys born worthy are described as gorgeous, endowed with a high degree of Satva, and endowed with a long life expectancy. They are also free of three debts, and as a result, they benefit their father. [8]

There is a reference in Ayurveda to the soul's involvement in the creation of the embryo. It has been revealed by Sushruta that the formation of an embryo is a collaborative effort of the soul, Ashtaprakruti (the eight fundamental natures), and Shodas-vikar (the sixteen products). [9] Righteous and unrighteous actions made by a soul before to its birth determine whether or not it enters a certain ovum-sperm mixture.

Agni (ovum) and soma (sperm) combine to form the psyche, which is, despite its immutability and impenetrability, influenced by the impulses of previous actions.

combined with Bhutadi's Ahankara[3].

The subtle body is linked to Satva, Rajas, and other mental states.

When Taijasa work together, they create ve Tanmatras (subtle elements), which share the same characteristic and have audible, tactile, and visual emanations.

It is only with Vayu's help that Tamas and other Godly demonical or otherwise impelled characteristics reach the uterus.

[10]

Table-1: Processes involved in genesis of progeny

Independent Process	Dependen
Srushtiutpatti (evolution)	Preconc
Formation of body parts	
Formation of Embryo & Soul	
Prakruti	

According to an equivalent passage in the first chapter of Sushruta Sharirsthana, in Ayurvedic teachings, souls are not omnipresent but endlessly reincarnated as animals, men, and gods depending on the good or bad deeds of their creator. Because of their intricacy, consciousness, and perpetual manifestation in the fusing of ovum and sperm, they are inferable. [11]

Sex Determination: Shukra (semen) generates a male kid, while Aartava (ovum) produces a female child. When both are equal, the result is a hermaphrodite. [12] Odd-day conception of a male kid and a female child may be the outcome of sexual interaction on even days. [13] If conceived now, the lady seeking a male child should put three or four drops of one of the following herbs into her right nostril (without spitting): Lakshmana (Ipomoea sepiaria Roxb), Vatashrunga (Ficus bengalensis Linn),

Sahadeva (Sida humilis Wild), and Vishvadeva (Grewia populifolia). [14]

Evolution & Body Parts: The elements facilitated in an individual with the assistance of Panchamahabhuta includes the traits those of Akash (sound, auditory organ, all ori□ces and distinctness); Vayu (touch, tactile organ, all activities (nervous system), actions in all body parts and lightness); Tejas (vision, visual organ, complexion, heat, brilliance, digestion, intolerance, sharpness and valor); Aap (taste, gustatory organ, all liquidity, immensity, coldness, unctuousness and semen) & similarly those of Prithvi (smell, olfactory organ, hardness and weightiness).[15]

Development of Embryo: Parts and subparts of the embryo develop naturally. The virtues or flaws that result from the soul entering the embryo should be recognised as such. [16] Zygote splits into two souls spurred by unrighteousness as it reaches the uterus due to internal Vayu. Twins are a common term for them. [17] Ayurveda explains the importance of Panchamahabhuta in the creation of the foetus's complexion and the six variables that affect the growth of the foetus, known as Garbhot-Padak (supporting factors for the production of Garbha). The element Tejas is responsible for the complexion. When the Aap element is prominent at conception, the foetus is fair-skinned; when the Prithvi element is dominating, the foetus is black. Eyes become red-eyed if Tejas does not reach the visual organ; the same connected with blood causes red-eyedness.yellow-eyed and white-eyed respectively, if associated with Vata it causes deformity in eye. [18] The parts of the foetal body originating from father, mother, Rasa (nutrition), Atma (soul), Satva (psyche) and Satyama (suitability) are described as Shadbhava. The hard parts like bone, nail, teeth etc originate from father; the soft parts like heart, liver, spleen etc are of maternal origin; physical development, strength, complexion originate from Rasa; sensory and motor organs, knowledge, wisdom life-span, pleasure, pain etc originate from Atma; energy, health, strength, complexion and intelligence are Satyamaj in origin.[19] Structural arrangement of body parts, falling and reappearing of teeth and absence of hair on palm and soles these are due to nature.[20] The person attains the same act in rebirth by which he was impelled in previous life. He also acquires the same qualities which were frequently used in the previous life. [21]

Foetal Deformity: Fetal anomaly is explained by Charak in terms of the seed (sperm or egg) and how it affects the portion of a foetus damaged by its genetic source. The number 22 is an example of this. Parents who do unrighteous activities may produce a foetus like a snake, scorpion, pumpkin, or other reptilian creature. Neonatal neonates such as Kubja and Kuni have a humped back, Kuni has a malformed hand, Pangu is lame, Mook is stupid, and Minmin has a muffled voice since the mother ignored her need. [23] A baby in the womb is affected by the Doshas (Bodily humour) in the same way as a tree in a river stream is affected by wood, stone fragments, and water currents during the rainy season. [24]

Prakruti The body's inherent constitution is influenced by the prevailing Dosha during conception. It has seven types: three for each individual Dosha, three for the combination of two Doshas, and one for the sum total of all seven Doshas. [25]

Discussion:

Shrushtiutpatti (Evolution): is a self-contained process that cannot be influenced by outside forces. There are three types of Triguna in Avyakta, but they are all equally distributed and inactive before abiogenesis. Differentiation in Triguna occurs when Mahat arises, and the processing of a person begins with the development of anatomical, physiological, and mental variety. Some conclusions may

be reached from a comparison of this theory of universe manifestation with the atomic hypothesis. Consider the proton, electron, and neutron as Satva, Raja, and Tama, respectively. It's well-known that each one's design and structure

The proton, electron, and neutron quantities in an atom are what determine the atom's properties. Atoms are the building blocks of the cosmos. According to Ayurveda, the manifesting cause of the whole cosmos is unmanifest. Our old idea of Abiogenesis is akin to this atomic hypothesis.

The Manas-Prakruti (psychological constitution) of a person is defined by the combination of Trigunas. Variations in Mahat and Ahankara, then, define an individual's psychic characteristics. This process may be termed autonomous since it is not under the authority of any one person.

Preconception Factors: rely on each other. It is possible for parents to influence the physical and mental qualities of their children for the rest of their lives by manipulating a number of parameters listed in Garbhasharir. Rutumaticharya ovums are observed in modern research to be in prophase of the rst meiotic division prior to maturity of the main oocyte. Garbhasharir compel menstrual women to take precautionary measures, hence there must be a link between oocyte maturation and Rutumaticharya. Epigenetic studies have shown the impact of one's food and other lifestyle choices on one's offspring.

Formation of embryo, body parts & soul: are also unaffected by external influences and must be treated as such. Rutukal, Garbhashaya, Aahar-Rasa, and Shukra-Artava are the primary elements in the conception process. The healthy progeny will not be born until all of the following four elements are normal. Conception may or may not be feasible if one of these variables is weakened. It's impossible to rule out the chance of a flaw if conception occurs under these circumstances. Because most of these entities may be planned and modified for the benefit of a healthy baby, this procedure is virtually dependant.

The Panchamahabhuta's qualities are well acknowledged. A person's rebirth might benefit from the stored knowledge about their good and bad deeds during their genesis. The stored information controls the entry of the soul into the ovum-sperm combination. The information that is kept in a computer may be compared to genetic code. The number of chromosomes is unique to each species and has a role in reproduction, as well as in the general development of a person, together with genes. When it comes to parenthood, the previous birth may be seen as a source of genetic information for their offspring's creation and development, according to this perspective Because of this, Ayurvedic terminology such as "righteous and unrighteous deeds" may be understood as genetic information.

Sex Determination: This process depends on but also operates independently of one another. As stated in Pumsavana Sanskara, the desired sex of a kid may be acquired with timely intervention (Sacrament of getting child of desired sex). Based on the prevalence of Shukra and Shonita at the moment of conception, it may be an autonomous process.

Development of Embryo: A procedure that is both reliant and autonomous The embryo's growth, which modifies people's features, is described in part by dependent elements such Garbhotpadak Bhava, nutritional and behavioural influences. "Atmaja Bhava" executions among Shadbhava are independent of each other. According to genetics, "Swabhava," or nature, is the same as "nature." GENEs contain all of the information necessary for the emergence of any given bodily component during genesis. For every organ, this stored

knowledge dictates the whole path of growth.

Foetal Deformity: A procedure that is both reliant and autonomous If you have modest hirsutism and a deep voice, as well as secondary amenorrhea and cystic ovaries, you may have Stein-Leventhal syndrome.

from the individual's Mahat and Ahankara. This means that the effectiveness of structural traits passed down through generations will differ from person to person. Individual variety is increased as a result. What's the difference between the two? Ayurveda holds that there is no existence of life without the soul. Every person has a unique soul, and the characteristics of that soul influence how that person's character emerges.

Sushruta shows that if a woman practises coitus in a dream after menstruation, Vayu, taking the ovum, creates an embryo in the uterus when it is associated with Kalala (semisolid substance resembling sputum). This causes the woman to show signs of pregnancy, but it remains a semi-solid mass similar to sputum that lacks any paternal characteristics. There is evidence that both maternal and paternal variables are necessary for the generation of normal offspring.

It has been noted by Charak that the vitiation of the Doshas that result from genetic flaws, as well as the uterus's physiology, a mother's diet, and other factors, leads to a wide range of physical and mental anomalies. Charak's view is supported by instances such as X, Y-linked illness, sickle cell anaemia, and so on. Ayurveda explains the three reasons that cause foetal abnormalities, namely, unrighteous acts, vitiated Vata, and a lack of desire in pregnancy.

Prakruti: Ayurveda genetics has been the primary concern of Prakruti's writers. There are three types of Prakruti: maternal; paternal. Each of these determines the offspring's physical, mental, as well as behavioural characteristics. Sushruta uses Tridosha to explain the same thing.

In a study on Prakruti, researchers discovered a link between the CYP2C19 genotype and Prakruti's rapid or slow metabolism. Phenomenological-genotype connection, drug development, pharmacogenomic medicine, and personalised medicine all seem to be affected significantly by these findings, too. [27]

It has been discovered that the gene PGM1 is linked to Pitta Dosha by Manipal University's Center for Cellular and Molecular Biology (CCMB). This gene's role in the process i.e., both independent and reliant. Ayurveda has a unique belief in the presence of a soul, which they think is responsible for life. Awareness the principles of embryology articulated by Ayurveda centuries ago demands an understanding of notions that are still relevant in today's scientic society.

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When it comes to the word "susher," the word "sushruta" comes to mind. Ayurvedrahasyadeepika Commentary by B. G. Ghanekar, Sharirsthana, Chapter 1 verses 2-3, Reprint ed. New Delhi; Meharchand Laxman Das publishing; 2009, p. 1-2

3.

In the Sushrutasamhita: Chapter 1, Verse 18, edited by Anantram Sharma, reprinted by Chaukhamba Surbharati in Varanasi in 2013, Volume 2, page 10, we find the following passage: "Sushrutha"

Edited by P. V. Sharma, the Sharirsthana Chapter 1 verse-4 of Sushruta's Sushrutisamhita, Sharirsthana Varanasi; Chaukhamba Visvabharati; 2005. Vol. 2: p. 118 in the reprint

On the basis of this passage from the Sushrutasamhita, Chapter 2, verse 25 of Sharirsthana:

Chap. 2, Verse -49, Reprint ed. Varanasi; Chaukhamba Sanskrit Sansthan; 2014. Vol-1. Edited by Ambikadatta Shashtri. p. 23

PGM1 has long been recognised as a key player in the regulation of the basal metabolic rate.

For more on this topic, see Ibid.

Similar to Pitta Dosha in terms of basal metabolic rate (BMR). As the preponderance of Dosha during fertilisation has an influence on several parameters, it is an independent factor.

There can be no doubt that embryology is an important topic.

chapter three, verse -35, page 44

Chapter 2, verses 34-35 of the Sharirsthana, Sharirshita (2), Sharirshita, p. 38-41

Sharirsthana Chapter 5, verse 2, p. 146 Ibidem Sushrutasamhita (2)

Sushrutasamhita (4), Sharirsthana, Sharirsthana

P. 140, verse 4 of Chapter 3

According to Ayurvedic Garbhasharir,

For more on this topic, see Ibid.

Ayurveda's philosophical and theoretical foundations. The

P. 9 of Chapter 1, Verse 16

attention is paid to both right and wrongdoing.

Italics in original (3),

Sharirsthana,

significance for the emergence of characteristics in a person.

P. 30 of Chapter 3, Verse 5

The majority of the origin theories outlined in

The Sushrutasamhita (6), Sharirsthana,

Modern science's genetic theory may help us better understand Ayurveda. Deeds, both good and bad, may be seen as a forerunner.

Page 279 of Ibidem

nutritional and environmental factors may influence an individual's genetic makeup.

The Sushrutasamhita (6), Sharirsthana,

Epigenetics is a comparison that may be drawn between parents' lifestyles and their children's DNA

.Conclusion:

Ayurveda's conception of embryology for the genesis of a person is based only on Tridosha, the core principle of the system.

Tridosha, Triguna, and Pancha-mahabhoota are Ayurveda's core concepts of embryology. There are two types of processes involved in the development of offspring, according to critical interpretation of Garbhasharir's works.

Verse 26 of Chapter 9 on page 9

In the "Sushrutasamhita" of Sharirsthan, Sharirsthan, Chapter 3, verse-34

Chapter 28 of Volume 1 of the Second Edition, published by Chaukhambha Orientalia in 2004 in Varanasi. Chap. 2, Verse 37 (Suritva), Srikantha Murthy, Sushrutha Samhita, Sharirsthan

On page 20 of chapter 2, verses 37 to 38 In the sixth chapter of the Ibidem Sushruta Samhita

Chapter 3, verse 43, p. 4 of Sharirsthana

Italics in original (4),

Sharirsthana,

In p. 138 of Chapter 2, verse 56,

There are many different ways to look at this, but here are some of the more common ones:

In the second chapter, verses 57-58 appear on page 139

2. Agnivesha, Charaka, Dhridhhabala, and others, P. V. Sharma, Reprint ed., Varanasi; Chaukamba Orientalia, 2011, Vol. 1, p. 426 of Charakasamhita, Sharirsthana, Chapter 3, verse 17.

In the Ibidem Sushrutasamhita (2), the Sharirsthana,

On page 23 of Chapter 2, verses 53-54,

Sharirthana, Chapter 2, verse -29, p. 415 of the Ibidem Charakasamhita (22),

Five. Ibidem Sushrutisamhita (4), Sharirsthana

Section 63 of Chapter 4 (page 162)

Volume 2 of Human Anatomy by B. D. Chaurasia (New Delhi: CBS Publishers, 2006), page 356

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