

International Journal of Research in Indian Medicine**“Clinical significance of Avayava Utpatti Sidhanta – review.”****Sandeep Pillai*¹, Sreeja Pillai²**

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***Corresponding Author:** ayurdreams@gmail.com; Mobile - 9096032376.**ABSTRACT**

The qualitative and quantitative aspects of longevity are programmed from the intricate, but systematic embryogenesis which can be tailored wholesome through the clinical intervention of *Ayurvedic* strategies at different levels ie, even before conception and during conception. The *Avayava Utpatti Sidhanta* reckoned in the context of *Garbha Avakranti* is a key to the susceptibility to vitiation (*Nidana*) and the ways of breaking the pathology (*Samprapti vighatana*) by the guidelines to pacification and purity of *Dosha* and *Dhatu*s involved in *utpatti krama*. Since *chikitsa* comprises *Nidana parivarjana* and *Samprapti vighatana*, the present review explores the possibilities of *Avayava Utpatti Sidhanta* in a clinical perspective.

Keywords: *Avayava Utpatti Sidhanta*, *Garbha Avakranti*,

INTRODUCTION

Garbha Avakranti is the development of a foetus in the mother's womb from conception.¹ *Acharyas* have outlined the dynamics in such a way that the *Vaidya* after learning the embryogenesis can intervene in all stages effectively to bring out a healthy (physically, mentally and spiritually) child. In an era of pandemics and lifestyle disorders that are cumulative responses to genetic, environmental and immune factors², the *Ayurvedic* understanding of *Sidhantas* related to *Sharira utpatti* is relevant in both predictive, preventive aspects along with curative aspects.

Garbha is the union of *Shukra*, *Shonita* and *Atma amsha* in *Garbhashaya*.³ Rather than being reproductive, it is the transmission of the self to the next generation; that which is advocated to be consecrated. *Acharya* describes various

purificatory procedures for intended *Beeja Shuddhi*, that will help to avoid any undesirable dissemination of *Beeja bhaga* and *Beeja bhaga avayava*.⁴ This is the first step towards the better progeny, since as per *Atreya Punarvasu* and *Dhanvantari*, the formation of all organs start simultaneously in *Sukshma bhava* during conception.^{5 6}

Avayava Utpatti Sidhanta has been elaborated in *Sushruta Samhita Sharira Sthana* fourth chapter. Similar descriptions are seen in *Ashtanga Samgraha* and *Kashyapa Samhita*.

AIM

- To study the *Avayava Utpatti Sidhanta* in the *Dosha- Dhatu - Mala* axis to understand the susceptibility to vitiation. (as per the same)

MATERIALS & METHOD

1. Relevant *Ayurvedic* and Modern Literature.
2. Research works done on the *Sidhanta* from the Internet.

AVAYAVA UTPATTI SIDHANTA

All *Acharyas* confer to the formation of different *Anga*, *Pratyanga*, *Avayava*, *Indriya* simultaneously in the third month of *Garbha Vikasa Krama*. These are stated to exist in *Sukshma* form since conception. And the further development of all these

takes place in sequential manner. From the third month onwards, the *Avayavas* start to take a definite shape defined with the word *Pravykto Bhavati* in *Sushruta Samhita*.⁷ *Avayava Vikasa* (Organ development) is continued till Seventh month of *Garbha Vikasa Krama* and complete growth of that *Avayava* is defined with word *Pravyktataro Bhavati*,⁸ and by this time, all these organs attained the functional optimum capacity to perform their normal physiological functions independently (*Sarva Anga Sampurna Garbha*).

As per the *Sidhanta*, *Yakrut* and *Pliha* are formed from *Shonita*; *Phuphusa* is formed from *Shonita Phena* and *Unduka* is formed from *Shonita Kitta*. *Hridaya* is formed from *Shonita* and *Kapha*, *Vrukka* is formed from *Rakta* and *Meda*. *Tridosha* and *rakta* take part in the formation of *Antra*, *Guda* and *Basti*. *Jihva* is formed from *Kapha dosha* and *Rakta* and *Mamsa*. *Vrushan* is formed from *Kapha*, *Rakta*, *Mamsa* and *Meda*.

As the *Sidhanta* shows, *Rakta Dhatu* takes part in each *Avayava Nirmiti*. The significance of *Rakta dhatu* as fourth dosha and in *Shalya tantra* has been emphasised in this *Sidhanta*. The significance of *Sidhanta* is to apply the role of the *Dosha Dhatu Mala* involved in each *Avayava* in their vitiation to reverse the pathology.

The *anga utpatti* can be summarised as per the table shown - Table 1

<i>Avayava</i>	<i>Utpatti</i>	<i>Derivatives</i>	<i>Embryological origin</i>	<i>Duration</i>
<i>Yakrut</i>	<i>Shonita</i>	<i>Endoderm</i>	<i>Mesenchymal structure- transverse septum(Hepatic bud)</i>	4 th wk
<i>Pleeha</i>	<i>Shonita</i>	<i>Mesoderm</i>	Dorsal mesentery as proliferating <i>mesenchyme</i>	5 th wk
<i>Phuphphus</i>	<i>Shonitaphena</i>	<i>Endoderm</i>	<i>Laryngotracheal groove</i>	On 22 nd day
<i>Unduk</i>	<i>Shonitakitta</i>	<i>Endoderm</i>	An outgrowth on the <i>midgut</i> (bud of the <i>caecum</i>)	6-10 th wk
<i>Guda</i>	<i>Tridosha+Rakta</i>	<i>Endoderm</i>	<i>Blastopore</i> of the <i>protostomes</i>	8 th wk
<i>Aantra</i>	<i>Tridosha+Rakta</i>	<i>Endoderm</i>	<i>Midgut</i> of the primitive gut tube	4-5 th wk
<i>Basti</i>	<i>Tridosha+Rakta</i>	<i>Mesoderm</i>	Partly from the <i>endodermal cloaca</i> & partly from the ends of the wolffian ducts	10 th wk
<i>Jihva</i>	<i>Kapha</i> <i>Shonita mamsa</i>	Ant2/3- Ectoderm Post1/3- Endoderm	Median tongue bud of the 1 st pharyngeal arch	4 th wk
<i>Vrukka</i>	<i>RaktaMeda</i>	<i>Mesoderm</i>	Intermediate mesoderm, lying between the somites & lateral plate mesoderm	5 th wk
<i>Vrushan</i>	<i>Mamsa Rakta</i> <i>Kapha Meda</i>	<i>Mesoderm</i>	Mesothelium as well as mesonephros	4-8 th wk
<i>Hridaya</i>	<i>Shonit Kapha</i>	<i>Mesoderm</i>	Splanchnopleuric mesoderm	21 st day

DISCUSSION

- ***Yakrut, Pliha Roga*** - Origin from *Shonita*.

Anatomical aspect - Liver is made up of the hepatocytes encircling the sinuses and dense venous network; it contains 80% of the blood volume of portal circulation.⁹ The spleen is made up of the reticular activating system (RAS) and the dense network of blood as well as lymphatic vessels.¹⁰ Development of liver is an example of epithelial mesenchymal interaction between endoderm of gut and adjacent mesoderm. Blood cells are derived from mesenchyme in bone marrow, liver and spleen.

Clinical Aspect - Since the origin is from *Rakta dhatu and Pitta dosha* (*Mala of Rakta*), the vitiation of *Rakta* due to *Rakta Dhatu Dushti* and *Raktavaha sroto dushti* stands the mainframe of the *Yakrut, Pliha roga*. Hence *Nidana Parivarjana* should aim at dissociation from *Pitta* vitiating factors and *Samprapti Vighatana* should aim at *Shonita Shudhi* and *Prasadana*. Ex - *Kamala*.

- ***Phuphusa*** - Origin from *Shonita Phena*.

Anatomical aspect - Lungs are composed of the large number of thin capillaries separated with thin lungs parenchyma and alveolar spaces with Surfactant (mucilaginous substance) giving appearance to the lungs of **air bubbles in**

the blood. Embryological origin of lungs is mesodermal as well as mesenchymal.¹¹

Clinical Aspect - *Phuphusa* can be the manifestation seat of *Kasa, Shwasa, Rajayakshma* etc, where *Srotorodha* and *Vata Pratilomata* cause the *Dhatu Kshaya*. *Virechana* and *Pitta Prashamana* with *Rakta Prasadana* are advocated in *Tamaka shwasa*.

- ***Unduka*** - Origin from *shonita kitta*

Anatomical aspect - Endodermal origin. The appendix and Caecum can be considered.

Clinical Aspect - In acute inflammations, which can be considered with *Antar Vidradhi* due to *Vidahi Ahara and Vihara*, the *Rakta Dosha Pradhana Chikitsa* ie, *Raktamokshana* and *Virechana* can be done.

- ***Hrudya*** - Origin from *Kapha and Shonita*

Anatomical aspect - Heart is composed of the cardiac muscles with blood filled four chambers and major or great vessels. The heart develops from splanchnopleuric mesoderm related to that part of the intraembryonic coelom that forms the pericardial cavity, during the 21st day of intrauterine life (IUL).¹²

Clinical aspect - The *Rasa dhatu* which is the seat of *Kapha and Pitta dosha* when vitiated causes *Hridroga* due to *Chronic Ama Sandharana*. The origin from *Kapha* and *Rakta* give the key to the *Hridroga*

Chikitsa. When *Kapha* along with *Rakta* is vitiated, the *Nidana* should be *Snigdha*, *Ushna*, *Abhishyandi* and *Virudha* which is taken in *Ati matra* and is of *Guru Guna*. So this leads to *Kleda Vridhi* in *Rasa - rakta* circulation leading to *Shonita abhishyanda*. When *Avyayama* and *Divaswapna* are followed for along time along with the above said *Ahara Nidana*, it lead to *Srotorodha* in the form of atherosclerosis, followed by infarction. So, in treatment, both *Kapha dosha* and *Rakta dhatu* have to be considered.

- **Vrukka** - Origin from *Meda* and *Rakta*

Anatomical aspect -- The definitive human kidney arises from two distinct sources. The secretory part, i.e. excretory tubules (or nephrons) are derived from the lowest part of the nephrogenic cord. This part is the metanephros, the cells of which form the metanephric blastema. The collecting part of the kidney is derived from diverticulum called the ureteric bud which arises from the lower part of the mesonephric duct, it develops during the 5th week of intrauterine life (IUL).¹³

Clinical aspect - On practicing *Vidahi*, *Abhishyandi* and *Virudha guna* with *Snigdha Adhikya*, it leads to *Kleda vridhi*. *Mutra* does the *kleda vahana* function. When the metabolization of the *Kleda* is not done by the body due to lack of exercise and energy utilization, the *Ama*

in circulation cannot be evacuated from the system. It continues in circulation and since *Sweda* is the *mala of meda dhatu*, the *Sweda* is involved in the *Samprapti* in advanced stages like Diabetic nephropathy. The *Kleda Vridhi* leads to the formation of *Krimi* which is evident in *Medovaha sroto dushti* as in *Sthoulya*, *Prameha*, *Pandu* etc.

- **Jihva** - Origin from *Kapha*, *Rakta*, *Mamsa*

Anatomical aspect - Anatomical foundation of tongue is the Muscles rich with blood supply and test buds with rich lymphatic sources.

Clinical aspect - The *Bodhaka Kapha*, *Rakta* and *Mamsa* are the mainframe of *Jihva*. In *Jihva roga*, *Langhana* should be adopted as a protocol since *Kapha*, *Mamsa* and *Rakta* have to be pacified. In *Nidana Parivarjana*, due to recurrent nature of disease, keen care is taken for *Kapha*, *Rakta* vitiating factors like *Abhishyandi*, *Vidahi ahara* and *Amla*, *Lavana atiyoga*. *Rakta moksha* has to be done in *Jihva roga* along with *Virechana*, since the origin not only involves *Kapha*, but *Rakta* also.

- **Basti** - Origin from *Tridosha* and *Rakta*.

Anatomical aspect - The development of the bladder begins during week four when the urogenital septum divides the cloaca into two parts, the rectum posteriorly and the urogenital sinus anteriorly. The

urogenital sinus will continue to grow to form the bladder.¹⁴

Clinical aspect - *Tridosha* and *Rakta* are involved in the *Rachana* of bladder which make it susceptible for vitiation easily and cause *Krichra sadhya vyadhi*. When the management is planned, there should be due regard for the *Tridosha* and *Rakta* factor.

CONCLUSION:

Avayava utpatti sidhanta has been elaborated by *Sushruta* and *Vagbhata*. The *Sidhanta* has to be understood in clinical perspective of *Nidana Parivarjana* and *Samprapti vighatana* while dealing with *Roga* of concerned *Avayava*. This *Sidhanta* can be used as a predictor for susceptible diseases and preventive measures can be taken up.

REFERENCES:

1. Charaka Samhita with Chakrapani commentary, Yadavaji Trikamji Editor, Chaukhambha Sanskrit Pratishthan, Sharir sthan 1/1.
2. Anaya JM, Ramirez-Santana C, Alzate MA, Molano-Gonzalez N, Rojas-Villarraga A. The Autoimmune Ecology. Front Immunol. 2016 Apr 26;7:139. doi: 10.3389/fimmu.2016.00139. PMID: 27199979; PMCID: PMC4844615.
3. Ashtanga Hridayam, Hari Sadashiva Shastri, Chaukhambha

Sanskrit Pratishthan, Sharir sthan; Chapter 1/ 1.

4. Charaka Samhita with Chakrapani commentary, Yadavaji Trikamji Editor, Chaukhambha Sanskrit Pratishthan, Sharir sthan 4/31.
5. Sushruta Samhita, Chaukhambha Sanskrit Sansthan, Varanasi, Sharira Sthana Chapter 3/32.
6. Charaka Samhita with Chakrapani commentary, Yadavaji Trikamji Editor, Chaukhambha Sanskrit Pratishthan, 6/21
7. Sushruta Samhita, Chaukhambha Sanskrit Sansthan, Varanasi, Sharira Sthana Chapter 3/18
8. Sushruta Samhita, Chaukhambha Sanskrit Sansthan, Varanasi, Sharira Sthana Chapter 3/30.
9. T.W Swadler, Langman's medical embryology; Chapter 6, Third to eighth week: The embryonic period; 11th edition, South Asian edition; Wolter Kluwer health, Gurgaon: Third Indian Reprint 2011;
10. Embryonic origins of spleen asymmetry, K.D. Patterson, T.A. Drysdale, P.A. Krieg: Development 2000 127: 167-175.
11. Johannes C. Schittn, Development of the lung:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5320013/>.

12. Antoon Moorman, Sandra Webb, Nigel A Brown, Wouter Lamers, and Robert H Anderson et al. Heart, 2003 Jul; 89(7): 806–814. doi: 10.1136/heart.89.7.806: PMID: 12807866.
13. Rehman S, Ahmed D. Embryology, Kidney, Bladder, and Ureter. [Updated 2020 Sep 3]. In: StatPearls [Internet]. Treasure

Island (FL): StatPearls Publishing; 2021 Jan-

<https://www.ncbi.nlm.nih.gov/books/NBK547747/>.

14. S Lukacz, C Sampselle, M Gray, S MacDiarmid, M Rosenberg, P Ellsworth, and M H Palmer, A healthy bladder: a consensus statement:: Int J Clin Pract. 2011 Oct; 65(10): 1026–1036, PMID: 21923844.

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