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### ABSTRACT

*Ayurveda* is a basic science of life having holistic approach. It considers human body composed of *Tridosha*, *Sapta Dhatu*, Three *Mala* and twelve *Prana*. *Hridaya* is mentioned as a *Pranayatana* (resort of life) in *Ayurvedic* literature which mentions its significance at physiological level to maintain vitality as it functions continuously from birth to death. *Hridaya* is involved in the flow and conduction of *Prana* (vital energy in form of *Rasa-Rakta*) thus it is considered as *Pranvaha* and *Rasavaha Srotas Moola*. In *Ayurvedic* classics it is classified in *Shriogata Hridaya* and *Urogata Hridaya*, which indicates the fine association between heart and brain. *Hridaya* is originated from essence part of *Rakta* and *Kapha Dosha* during 4<sup>th</sup> month of fetal life. It has immense importance as it is considered as *Kosthang*, *Pratyanga* and *Marma*. Ten vessels (*Dash Mahamoola*) arise from the *Hridaya* by which *Prana* in form of *Rasa Rakta* and *Oja* is circulated throughout the body. *Rasa Dhatu* is circulated from *Hridaya* to all body under influence of *Vyana Vayu* result in nourishment of all *Dhatus*. Thus *Hridaya* has immense importance in maintaining vitality of an individual.

**Keywords:** *Hridaya, Pranayatana, Prana, Pranvaha, Rasavaha Srotas*

**INTRODUCTION:** *Ayurveda* is an ancient science of life which basically deals with the focus on quality of life of an individual. *Ayurveda* is a combination of two terms; “*Ayu*” which means life and “*Veda*” which indicates knowledge that means, it aims towards the longevity of life in terms of being healthy in all aspect i.e., physically, mentally and socially. Here the term “*Ayu*” is a fine integration of four essential parts, *Satva (Manas)*, *Atma (soul)* *Indriya (the senses)* and *Sharir (the body)*<sup>1</sup> and the fine combination of all these are said to be the medium to conquer the *Purusharth* (goal of life) i.e. *Dharm* (moral duty), *Artha* (economic prosperity), *Kama* (Pleasure) and *Moksha* (spiritual liberation)<sup>2</sup>. *Sharir* is basically composed of *Dosha*, *Dhatu* and *Mala*. Apart from these entities there are so many structures which are having immense significance both anatomically and physiologically, to

maintain the life. In other words we can term as *Pranayatana* ( resort of life/vitality) . In our classical texts there are ten structures which are considered as *Pranayatana*.<sup>3</sup> *Hridaya* (heart) is one of them and is very important organ for the body. In *Ayurvedic* literature *Hridaya* is mentioned in different context with different means so it is very necessary to review *Hridaya* and to understand it in both anatomical and physiological purview. The present article deals with the literary review of *Hridaya*.

### AIMS & OBJECTIVE:

- To review the *Hridaya* in terms of physiological aspect.

### MATERIAL AND METHODS:

Review of literature is done from various classical *Ayurvedic* texts and matter available on internet and published journals.

**DISCUSSION:** It is important to understand about *Hridaya*, that what it is exactly, where it is situated, what its *Panchbhautik* composition is, how it is originated and developed and how it does function. So very first coming to the derivation of term *Hridaya*, etymologically it is composed of as ‘*Hri*’ + ‘*Da*’ + ‘*En*’ where ‘*Hri*’ means uptake (of *Rasa* and *Rakta* from entire body), ‘*Da*’ means to supply (the *Rasa* and *Rakta* to body) and ‘*En*’ means the movement or continue function. Overall it can be said that the term *Hridaya* is combined indicator of all the three functions mentioned above.

***Hridaya* in Ayurvedic literature:** All the ancient Ayurveda literature are written in *Sanskrit* and in terms of language it is a very superior language having lots of meaning of the same word or term which are to be understood according to the context. Same case is with *Hridaya*, sometimes it supposed to be *Mastishka*

**Table no.1 Difference between *Urogata Hridaya* and *Shirogata Hridaya***

S.No.	Characteristics	<i>Urogata Hridaya</i>	<i>Shirogata Hridaya</i>
1	<i>Utpaati</i>	<i>Shonit- Kapha Prasadjam</i>	Not described as
2	Shape	<i>Paundrika Sama</i> (like a lotus)	No shape described
3	As <i>Kosthang</i>	Considered as <i>Kosthang</i>	Not considered as <i>Kosthang</i>
4	Situation	In <i>Vaksha Guha</i> (thorax)	Somewhere in between <i>Shirah</i> and <i>Kapal</i>
5	Functions	<i>Chetna Adisthana, Rasa samvahana, root Pranvaha Srotas</i>	Holding up <i>Medha, Buddhi, Smriti Dharan</i> ,etc

On the basis of above discussion it is supposed that *Hridaya* which is said to be the root of *Pranvaha Srotas* is the organ present in the thoracic cavity and it is always functioning and performing the process of *Rasa -Rakta Samvahna*.

#### ***Hridaya* as per anatomical purview:**

Acharya Charak says ten *Siras* which are considered to being *Mahamoola* and

and in other context, when *Manas* and *Indriyani* are considered *Hridaya* is taken as root of *Pranvaha Srotas* and *Rasavaha Srotas* situated in *Uroguha* (Thoracic cavity).

- “*Hridaya Fuffussthanam*
- *Hridaya* having *Dasamahamoola Sira* and reservoir and conductor of *Rasatmaka Oja*.<sup>4</sup>
- *Raktapadmakaram Adhomukham*<sup>5</sup>
- *Sa-spandmanam*
- *Kapha -Shonit Prasadjam*<sup>6</sup>

All the above references make clear view about the *Hridaya* which is considered to be the root of *Pranvaha Srotasa*.

*Chakrapani* while explaining the difference about *Urdhva Hridaya (Shirogata Hridaya)* states that when *Manas* is enforced to its function it works under *Shirogata Hridaya* and when not in function it is attached with *Urogata Hridaya*.

*Mahaphala, Shadang Sharir* ( two upper limb, two lower limb head and trunk) all sense organs their subjects, *Atma, Manas* and its subjects all are reliant in *Hridaya* and *Hridaya* has synonymously considered as *Artha* and *Mahat*.<sup>7</sup>

Acharya Sushrut has stated that, *Hridaya* is composed of finest and essence part of

*Shonit* and *Kapha* and all *Pranvaha Dhamnies* are reliant in *Hridaya*.<sup>8</sup>

#### **As Pratyang:**

*Hridaya* has been considered as *Pratyanga* according to *Sushrut*.<sup>9</sup>

#### **As Kosthang:**

While mentioning about *Kosthang Acharya Charak* has placed *Hridaya* among eight *Koshtang*.<sup>10</sup>

#### **As Marma :**

*Acharya Sushrut* has conceived *Hridaya* as *Sadhyo Pranhara Marma* which is located between *Stanmoola* and near the orifice of *Amashaya*.<sup>11</sup>

#### **Location of *Hridaya*:**

*Hridaya* is located twelve *Angul* below the *Greeva Moola* and twelve *Angul* above the *Naabhi*.<sup>12</sup>

#### **Shape of *Hridaya*:**

All *Acharya* have elucidated the shape of heart as *Padmakara*, *Kamalmukulakara* but *Sushrut* has added one more specific feature and described it as “*Padmakaram Adhomukham*” ( lotus facing downwards).<sup>13</sup>

#### ***Hridaya Kostha*:**

There is no clear cut description about the chambers/*Kostha* of *Hridaya* but in the description of the functioning “*Vidhamyante Samanatatah*” it can be understood the as the movement of all four chambers of heart.

#### ***Hrid-Peshi* :**

According to *Sushrut* and *Vagbhatt* there are two *Peshis* in *Hridaya*.<sup>14</sup>

#### ***Hridaya* in relation to Other Organs:**

Below the *Hridaya* in left side *Pleeha* and *Fuffus* are situated and in right side below *Hridaya* *Yakrit* and *Kloma* are situated.<sup>15</sup>

#### **Vessels of *Hridaya*:**

All the *Acharya* have mentioned ten main vessels (*Das Mahamoola*) which are further divided into minute vessels. These

vessels play significant role in *Rasa Rakta Samvahana*.<sup>16</sup>

#### **Origin and development of *Hridaya*:**

*Garbha* is formed by the combination of sperm (*Shukra*), Ovum (*Shonita*), *Atma*(soul), *Prakriti* (Primordial substances) and *Vikritis* in the *Garbhashaya*. *Panchamahabhoota* act upon the *Garbha*, helps it to mature and develop.

- *Vayu Mahabhooot* is involved in *Vibhjana Karya*. It divides the *Garbha* into different fragments.
- *Tejas Mahabhoota* is involved in *Pachana Karya*. It helps in processing and bringing about maturity *Garbha*
- *Apaa Mahabhoota* is involved in *Kledana Karya*. It helps in Nourishing the *Garbha* and its component.
- *Prithvi Mahabhoota* is involved in *Samhanana Karya*. It helps in bringing out the integrity and compactness in all components.
- *Akash Mahabhoota* is involved in *Vivardhana Karya*. It helps in the coelomicity of the foetus. It provides space for the developing organs and various components.

Along with all factors mentioned above there are some other factors which also helps in determining the fate of the *Garbha* and formation of complete *Shareera*. There are *Rasaja*, *Satmayaj*, *Satvaj*, *Aatmaj*, *Pitraja* and *Matruja Bhava*.<sup>17</sup> Among all these six *Bhavas*, *Matruja* and *Pitruja Bhava* play a key role in determining the origin and development of various body parts.

All soft organs including the *Hridaya* (heart) are derived from *Matruja Bhava*.<sup>18</sup> These organs are present in the *Beejbhaga* as *Beejavyava* in subtle form. After *Shukra* *Shonit Samyog* and the combined effects of

all the necessary factors and by the actions of *Mahabhoota*, they start to differentiate and to develop day by day.

Though the subtle form of *Hridaya* is present in the *Beejbhaga* during the *Shukra Shonit Samyog* but after that by the physical change over process it is transformed in a more compact form. All this process happens in the first two month of fetal life. In the third month along with the minute chamber form of *Hridaya*, *Indriotpatti* and *Vednanubhooti* is also originates, the *Hridaya* become more expressed developmentally and the *Chetna Dhatus* is also expressed now. Now this condition is known as *Dauhrid Avastha* of *Garbhini*. In fifth month of fetal life there is *Mansa Shonit Upchaya* in the heart and up to sixth month more strength is poured in the *Hridaya*. Up to the end of seventh month *Hridaya* has optimized up to its level best functionally. During eighth month there is reciprocal transport of *Para Ojas* from mother to Fetus thus the embryological development of *Hridaya* occurs.<sup>19</sup>

#### **Panchmahabhautik composition of Hridaya**

At the time of *Shukra Shonit Samyoga*, genetic material for the development of *Hridaya* is always present in terms of *Beejbhagavaya* in *Beeja*. When attached to *Garbhashaya*, by the impact of all the *Garbhottpadak Bhavas* it starts to develop. As discussed earlier among all six *Garbhottpadak Bhavas*, *Matrija Bhava* contributes in the origin and development of *Hridaya*. *Rasavaha Nadi* which is attached from mother to fetus performs two main functions; one is to provide nutrition and second is to transport the *Ojas* from mother to fetus. Eventually by the action of *Agni Mahabhoota* (Metabolic activity, *Pachan Vyapar*) and

*Vayu Mahabhoota (Vibhajana)* the *Mansa Dhatus* present as *Anu* form in *Rakta* and by the association of *Kapha Dosha (Avlambaka Kapha)* *Hridaya* is developed as an organ.

Under the concept of “*Sarve Dravyam Panchbhautikam Asmin*” all the *Chetan* and *Achetan Dravya* are *Panchmahabhautik*. As *Shukra* and *Shonit* being *Panchmahabhautik* all the organs deriving from are also *Panchmahabhautik* in their composition. *Hridaya* being composed of the essence part of *Rakta* and *Kapha*, it is understood that *Panchbhautik* composition of *Hridya* is predominantly *Agneya, Prithvi* and *Apyeya*.

#### **Function of Hridaya:**

*Hridaya* is the resort of *Rasa, Vatadi Dosha, Satva, Buddhi, Indiya, Atma* and *Ojas*<sup>20</sup> and it is the superior most place for *Antaratma*. It holds the all *Dash Dhamni, Prana, Apana, Manas, Buddhi* etc like the centre of a cartwheel<sup>21</sup>. All the ten Vessels of *Hridaya* circulate the *Rasa* in form of *Ojas* and all these ten Vessels defiantly help in the all body functions. *Dushit Rasa* in form of *Rakta Dhatus* for getting purified comes to the *Hridya* and circulates to *Fuffus* after getting purified it comes back to the *Hridaya* and by the function of *Vyan Vayu* it is pumped out to whole body. So in brief heart functions to maintain vitality, it transports the *Prana* in form of *Rasa Rakta* and *Ojas* to entire body.

#### ***Hridaya* as a Moola of *Pranvaha Srotas* and *RasaVaha Srotas*:**

*Acharya Charak* and *Sushrut* both have included *Hridaya* as the *Moola* of *Pranvaha Srotas* and *Rasavaha Srotas* because it actively takes part in respiration and *Rasa Rakta Samvahan*. As mentioned by *Acharya Charak* the functional area of *Pran Vayu* include *Moordha, Urah, Kantha, Jihva, Asya, Nasika* and in

functions for *Shwasna* and *Ahara* along with *Sthivana*, *Kshwyathu*, *Udgar*<sup>22</sup>. In the process of *Ahara Paka*, *Pran Vayu* helps in the propagation of *Ahara* from mouth to the *Koshta*<sup>23</sup>, where *Aharapaka* take place and *Rasa Dhatus* is formed. This *Rasa Dhatus* (in form of *Rakta*) along with *Prana* is sent to the *Hridaya* under influence of *Samana Vayu*<sup>24</sup>, in *Hridya* the *Rasa*, under influence of *Vyan Vayu*<sup>25</sup> is circulated through-out the body to nourish the further *Dhatu* and after that the violated *Prana* (due to *Dhatu Paka*) is returned back to *Hridaya* now it is sent to *Fuffusa* from where it is expelled out and after getting saturated it returns back (it includes both phenomenon outer respiration and cellular respiration) thus it is purified and send to the *Hridaya* again and from here it is re circulated to the body and tissue. Thus it is clear why *Hridaya* is stated as common *Moola* of both *Pranvaha* and *Rasavaha Srotas*.

On the basis of above discussion it can be simply understood that *Hridaya* performs conduction of *Rasa* which contain nutrients for body tissues, *Rakta* the red fraction, *Prana* the fraction that is produced by the act of respiration, and *Ojas* the same time. But is actually the blood the tissue which contains all the above components and continuously flow through the body by the pumping of heart and performs all the functions<sup>26</sup>.

### CONCLUSION:

On the basis of above discussion it is concluded that *Hridaya* is very important organ in our body and it is well emphasized by our *Acharya*. Physiologically it performs very important functions like *Rasa*, *Rakta*, *Prana* and *Ojas Samvahan*, by the blood circulation process. It performs all these functions with the mutual coordination with

respiratory system. Thus it is considered as *Moola* of *Pranvaha Srotas* and *Rasavaha Srotas*. It is the resort of *Ojas* and helps to maintain life from birth till death.

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