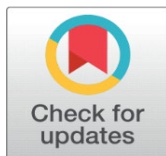


RECENT RESEARCH ON THE CONCEPT OF THE *HRIDAYA* IN *RACHANA SHARIRA*, AND ITS RELATION WITH MODERN ANATOMY

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ABSTRACT

Ayurveda states that *Hridaya* is one of the most important parts of the mortal body. An injury to it may affect it in severe conditions. The specific signs and symptoms of these conditions are well defined in *Samhitas*. Any kind of trauma or injury to it may lead to death. Therefore, it has been classified under *Tri Marma* and *Dashsa pranayatana*. [Dwivedi & Kumar \(2010\)](#). The term *Hridaya* indicates the organ which regulates the circulation of *Prana* throughout the body by collecting and diffusing rhythmically. *Samhitas* state that *Hridaya* performs several other functions along with the circulation of *Prana* (blood/ oxygen). These ancient classics mention that *Hridaya* controls the mortal body, sensations, and powers of logic, becoming the center of life and wit. Hence at one point the term *Hridaya* is considered as brain. *Acharya Charaka* and *Sushruta* have considered the *Hridaya* as a *Koshthanga* (organ present in *Koshtha*/trunk). This easily indicates that *Hridaya* is nothing but *Urastha Hridaya* (organ present in *Koshtha*/trunk). In this composition, an attempt has been made to connect references about *Hridaya* to modern anatomy through logical analysis of these references.

Keywords: *Hridaya*, *Manas*, *Hridaya Marma*, *Trimarma*, *Koshthanga*

1. INTRODUCTION

In Ayurvedic texts, many references are available regarding *Hridaya* they are available in scattered forms. The word " *Hridaya*" first appeared in Atharvaveda, where it's appertained to as the cardiorespiratory system that includes the heart and the brain (cranial *Hridaya*), (thoracic *Hridaya*). Two *Hridaya* — one located in the thoracic region and the other in the head — is expressly mentioned by *Yogvashishtha*. According to Ayurveda, *Hridaya* is formed from the purest essence of *Shonita* (*Rakta*) and *Kapha*. As it is a muscular organ, it is considered a *Matruja*

(from the maternal side). Vyana vayu regulates the rhythm of the heart. [Ambikadutta \(2011\)](#)

1.1. ETYMOLOGY

According to Shatpath Brahman and Brihat Aranyak, the word – Hridaya is made up of three Dhatu (verbs) – Hru stands for Harati (beneficiary), – Da for Dadati (to give or contribute) &

– Ya” stands for Yagati, which means – to control, or – in Gatou, which refers to the rhythmic movement for collecting and diffusing of Prana. Hri the suction exertion of Hridaya (i.e., venous return), Da- the pumping action of Hridaya (i.e., to propel of oxygenated blood), and Ya the operation of these above two conditioning, therefore, express the function of the organ. [Vidyadhar \(2017\)](#).

1.2. DEFINITION

As a result, the heart is indicated as the body organ called Hridaya since it receives, emits, and moves. Throughout awakened state and sleep, the Hridaya alternates between contraction and relaxation. Indeed if it happens further slowly while you are sleeping, this action nonetheless goes on.

1.3. LOCATION

The location of the heart is in between mammary glands in the thorax. Its position is superior to the Amashaya Dwara (epigastric fossa). It's a position of properties of mind i.e. Trigunas (Satwika, Rajasika, Tamasika Gunas). Any trauma to Hridaya may lead to death. Hence it is termed as Sadyopranahara Marma. [Gupta \(2012\)](#).

2. AIM

Understanding the concept of *Hridaya* according to *Rachana Sharira*, and its relation with modern anatomy.

3. OBJECTIVES

To study the anatomical structures involved in *Hridaya* according to Ayurveda.

- 1) Detail study of anatomy and physiology of human heart.
- 2) Detail study of the term *Hridaya*.

4. MATERIALS AND METHODS

This is a literary or conceptual study, classical Texts (Samhitas) was used to gather data. Research articles, international journals, available on the internet, and modern books were referred to understand the Ayurvedic point of view of Hridaya and its correlation with modern anatomy.

According to Charak Samhita– Arthe Dash Mahamuliya Adhyaya and - Trimarmiya Adhyaya and Sushrut Sharir Sthana's – Garbh Vyakarana Shariropkramnitya Adhyaya, both give excellent illustrations of the notion of Hridaya. The Hridaya is counted in Siramarma because it provides Rasa, Rakta, and Oja to all of the Srotas of the body. [Ambikadutta \(2011\)](#).

Hridaya has been described by Vagbhata as the Moola of Sira, [Gupta \(2012\)](#). and Sira are Rakta- updhatu. Since Sira (vessels), the end product of Rakta and Meda commerce, are abundant in the heart, it's Sira Marma. According to Ayurveda, the Hridaya evolves into a muscular organ from the Prasadbhag of Shonita (Rakta) and Kapha which can be identified with myometrium. [Ambikadutta \(2011\)](#). The durability of life processes depends on the twelve Prana, which are concentrated at different locales on the mortal body called Marma (Prana sthana). Trimarma are Shiras (head), Hridaya (heart), and Basti (urinary bladder). Even today, death is ultimately caused by cerebral death, cardiac arrest, and renal failure.

Hridaya is also named by Acharya Charaka as one of Trimarma and Dasavisheshaayatana, [Dwivedi & Kumar \(2010\)](#). and by Acharya Shushruta as a Marma sthan of the Sadhyapranhar variety (grounded on injury prognosis, i.e., a pivotal organ that, if injured, may affect in immediate death), [Ambikadutta \(2011\)](#). They've determined that this area is Pranayatan. Two words, Prana (life) and Ayatana, combine to form the word Pranayatana (Ashrayasthana- Seat). In light of the fact that Pranayatana is a pivotal element of mortal beings and essential for life, any Aaghat or complications caused by it affect death. Acharya Kashyapa also appertained to Hridaya as Pranayatan and Mahamarma. [Tiwary \(2002\)](#) . Since it's the position of Chetana, Mana, and all the other Prana, Charak refers to it as Mahamarma.

According to Acharya Sushruta, Charaka, and Vagbhata, this Ura sthitha (thoracic) Hridaya is an organ, with a cavity that's Aashaya, [Ambikadutta \(2011\)](#) a Kosth [Ambikadutta \(2011\)](#). and a Kosthanga. [Agnivesha. \(n.d.\)](#) Acharya Sushruta gave the veritably scientific description of the heart in which it's positioned in between the area of bone and epigastric fossa with Pleeha (the spleen) and Phuphus (the lung) and as if side relation while Yakrut (the liver) and Klome (pancreas) in the right side position. Acharya Sharangdhara also has the same view.

The size of the heart is roughly 4 Anguli or about the size of an individual's own fist. It's composed of two Peshis of the Bahala and Shlakshna types since its function must begin in the womb and continue continuously till death. As a result, the heart's muscular structure is exceedingly sophisticated and effective. Three Mandala Sandhis are present in it. The indirect valves regulate the passage of the Rasa-Rakta complex in and out of the heart. [Ambikadutta \(2011\)](#). These are appertained to as Sandhi/ joints by Acharya Sushruta because they allow for the unidirectional movement of fleshly region. In Aamavata, portable joints become bloated and uncomfortable, and valvular heart disorders can develop as a consequence.

5. SHAPE OF HRIDAYA

Figure 1

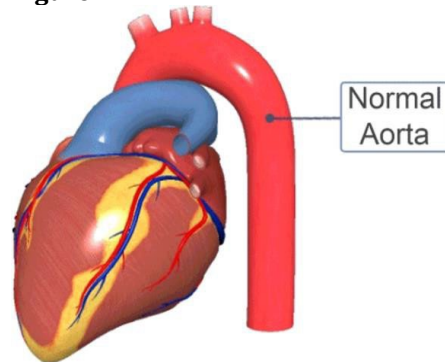


Figure 1 Heart with Aorta [Newport Cardiac & Thoracic Surgery. \(n.d.\)](#)

Figure 2



Figure 2 Inverted Lotus bud [Dreamstime. \(n.d.\)](#)

Its shape is Adhomukha- Pundrika, or a downward-facing lotus. [Trikamji et al. \(2009\)](#). It is connected to ten Mahadhamani, or throbbing vessels, which supply the entire body with blood, nutrients, and oxygen as well as vital substances. The disagreement girding the cranial and thoracic hearts is thus ultimately cleared up by the references mentioned over. As a result, it may be said that the constitution, physiology, and functionality of the Urastha Hridaya are analogous to those of the heart.

This Hridaya contracts during sleep and dilates when awake. The heart with aorta and brain with spinal cord appear like a lotus (with long slender stem) as described by Acharya Sushruta. The spinal cord and descending aorta resemble the stem or stalk of a lotus. In cerebrovascular accidents, both organs are affected.

Both clinical and experimental evidence suggest that the heart has an important impact on the brain, interacting not only locally with cardiac physiology, but also directly through neuroendocrine and metabolic pathways.

6. EMBRYOLOGY

Because it's soft, malleable, contractile, and expansible, the Hridaya, which is an element of the fertilized ovum, is genetically appertained to as the maternal organ. [Ambikadutta \(2011\)](#). The heart is created from the clear and pure part of Rakta, Mansa, and Kapha in the 4th month of intrauterine life. The pregnant lady is appertained to as Dvihridaya when the full-fledged heart has evolved by the fourth month [Ambikadutta \(2011\)](#). (one who has two hearts). Being the place of Manas, the Atma, it manifests a number of longings known as Dauhrida that must be satisfied. However, if they are not met, congenital anomalies can develop.

7. DISCUSSION

Hridaya- Chetana Sthana According to Acharya Charaka, the Hridaya is where Prana and Oja (Para Oja) reside, while according to Acharya Sushruta, the Hridaya is where Chetna Tatva resides. The seat of cognizance is in the heart, according to the expression – Hridayam Chetana Sthanam”. The heart is the source of life, and the body's capability to sustain itself depends on it. It also serves as the seat of the mind or Mana [Shastri \(2012\)](#). Chakrapani Chaithanyasangraha (Ch.Su.30/7) claims that through managing the mind, cognizance can be concentrated on the heart. Because the heart is the place of the cardiac impulse, it contains Aatmikguna analogous Dhyana, Vidnyas, Iccha, Dvesha, Sukha, Dukkha, and Prayatna. As the Hridaya (heart) is the site of Chetana Tatva, it's discerned first in foetal

development, according to Balhik Bhishaka Kankayana. According to Dhanvantari, all organs, including the heart, appear together with the Bhavas Oja, Mana, Aatma, and Buddhi. Since the heart is the centre of all sense perception (representing Vayu's action), the Hridaya (heart) is essential for all regular internal and physical functions.

The term "Hridaya" indicates the organ which regulates the circulation of Prana throughout the body by collecting and diffusing in a rhythmic manner. According to this description, Hridaya is also the brain and the heart. Shirastha Hridaya (by its function of knowledge, memory, intelligence, etc). Hridaya has a downward-facing lotus form. According to Indian books of medicinal tradition, Hridaya is the motherland of two Srotas, which are Pranavaha Srotas, which carry Prana. The Aahar Rasa is transformed into Rasa Dhatu, which nourishes the further Dhatus of the body. This process is carried out by Rasavaha Srotas. By gorging, Rasa; Pranvaha Srotas gain an unbroken provision of Amberapeeyush (oxygen). Only the several Bhava (that Mana granted are articulated by Hridaya. Extreme anxiety is one of the main factors that contribute to the vitiation of Rasavaha Srotasa (Ch.Vi.5). The part of Mana, or the mind, according to Acharya Charaka, includes everything that can be allowed, analogous as a choice, arguing, grasping, making opinions, and anything else that the mind can smell, analogous as joy, anguish, desire, aversion, and other particular heartstrings. It's plausible to claim that these are motifs connected to the brain, supported by both classical and contemporary wisdom.

8. MODERN PERSPECTIVE

The term Hridaya Marm refers to the heart with 4 chambers, great vessels originating from heart and vessels supplying heart (coronary vessels), middle space between two lungs (mediastinum). [Garg \(2018\)](#).

The five anatomical structures are essentially involved in Marma these are Mansa, Sira, Snayu, Asthi, Sandhi i.e. muscle, ligament, and bone, joint respectively. As Hridaya is predominantly made up of Siras i.e. vessels; it is named as Sira Marma.

If Hridaya Marma receives any kind of trauma, mostly the major vessels present in this area gets damaged compared to other structures present in this area, which leads to immediate death.

The heart communicates with the brain and the rest of the body in three ways proved by solid scientific trials neurologically (through transmissions of neural impulses), biochemically (through hormones and neurotransmitters), and biophysically (through pressure sensation). Through these natural communication systems, the heart has a significant influence on the function of our intelligence and all our physical systems. [Vinay et al. \(2014\)](#).

As a result, heart failure is caused by severe physiological ramifications. Any damage to the heart's myocardial; valves, conduction system, and coronary vasculature can negatively affect pumping performance, which increases morbidity and mortality. [National Center for Biotechnology Information. \(2020\)](#)

9. CONCLUSION

In Ayurveda, the term Hridaya suggests both heart and brain. According to the Samhitas, the Urastha Hridaya was a hollow organ (Kostha) with a lotus-like shape made of two Peshi, three Mandala Sandhi, and ten Maha Dhamani, or pulsating vessels, which supply Prana and nutrients, as a result, energy to the entire body. The Hridya described in Ayurveda literature shares multitudinous anatomical,

physiological, and functional characteristics with the heart understood from an ultramodern perspective.

CONFLICT OF INTERESTS

None.

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