

LITRARY STUDY OF THE HRIDAYA IN AYURVEDA WITH ITS CLINICAL IMPORTANCE

¹**Dr. Nazrul Islam Prodhani** and ²**Dr. Ruksana Parvin**

¹Assistant Professor, Sharir Rachana Department, IA. Ayurvedic Medical College, Meghalaya.

²Consultant PTSR and Medical Officer[Ayur], Umrangso CHC, Dima Hasao, Under Government of Assam.

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***Corresponding Author**

Dr. Nazrul Islam Prodhani

Assistant Professor, Sharir
Rachana Department, IA.
Ayurvedic Medical College,
Meghalaya.

ABSTRACT

Hridaya is one of the most important organs of the body. Ayurveda has described Hridaya as heart anatomically and physiologically but it also has functions which can be correlated with the functions of nervous system specifically autonomous nervous system. The thoracic heart has functions like brain or act in collaboration with brain for e.g. control of the mind. As per Ayurveda in addition to circulation hridaya is sensory organ and sophisticated centre for receiving and processing information. The heart is now recognized by scientists as a highly complex system with its own functional brain. This study wants to highlight all the aspects of hridaya in Ayurveda namely origin, morphology, histology, surface anatomy, clinical importance and its relation. Here we found that the functional aspect of mana which is located in hridaya is related to Psychological aspect and Autonomus nervous system.

KEYWORDS: Hridaya, Heart, Function, Clinical anatomy.

INTRODUCTION

According to Ayurveda “HRIDAYA” is one of the most important marma and pranayatana. It is also the moolsthana of prana and rasa vaha srota. It is the vital organ of body which looks like downward facing red lotus bud. All the physiological functions are due to vayu, specially prana and vyana vayu. Hridaya is the sthana of sadhak pitta, avalambak kapha, ojha and mana. According to Acharya Charaka, hridaya is the place of atma (soul) and chetana (self-

consciousness).^[1] Modern sciences say heart is cardinal organ of respiratory and circulatory system.

AIM: Detail literary study about hridaya in Ayurveda.

OBJECTIVES

1. Literary study of hridaya in Ayurveda like origin, morphology, histology, surface anatomy, and clinical anatomy.
2. Analysis of the functional aspect of hridaya specially in relation to brain.

DISCUSSION

Meaning of Hridaya: It word Hridaya had originated from ‘Hri’ dhatu, here “HRI”- means to receive. “DA”- means to give. “YA”- means to control.

Synonyms: Hridaya contains 10 mahamool (roots), and 10 mahaphal (vessels), as rasavahini. Thus it has synonyms- Artha and Mahat.^[2]

Embryological Origin: During the garbhotpatti (organogenesis), heart is form first in foetus as per Acharya Kritivirya discussed in Susruta samhita. It is originated at 4th month of embryonic development.^[3] Hridaya originates from the essence of Rakta and Kapha.^[4]

Histology: Genetically it is originated from matrija bhava and it is structurally made of soft tissues.^[5] It is said that hridaya is formed by mamsapeshi and looks like rakta (red) colour lotus.^[6]

Measurement: Anguli pramana of hridaya is of panitala akunchita samitani and 4 angula [like own fist].^[7]

Surface anatomy: Hridaya is located at uras[thorax] between stana (breast) up to amasaya dwara (cardiac orifice of stomach).^[8,9] It is placed between two nipple.^[10]

Location: Pliha (spleen) and phupusa (left lungs) are located on the left side Hridaya while yakrit (liver) and kloma (trachea) are on right side of it.^[11] Hridaya is specifically the seat of consciousness and as such when it is covered by tamas, it make the person sleep.^[12] Hridaya is the place of satta, raja, tama and situated in chest in between breast and cardiac sphincter and its injury cause sudden death.^[12] It is one of the kosthanga according to both Charaka and Susruta.^[13,14]

Morphology



Figure 1: Downward facing red lotus bud.

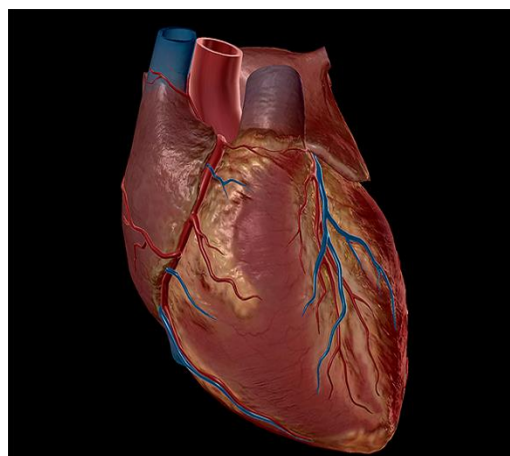


Figure 2: Heart with vessels.

Hridaya resembles the red lotus bud and is pointed downwards; in awake person it blooms while during sleep it closes.^[15] Hridaya contains 10 mahamool (entry-roots i.e. vein), and 10 mahaphala [exit- branches i.e. artery], so has synonymous as Artha and Mahat.^[2] Hridaya is like padmakosha (lotus bud) and downward facing with lots of opening.^[16]

Hridaya and its relation to Prana: Prana of human beings is located in the hridaya.^[17] It is one of the sadya pranahara marma. So it should be always protected. Hridaya has the attachment of ten vessels, prana, apana, mana, buddhi, chetona, and mohabhutas i.e. prithvi, jala, agni, vayu and akash as spokes of a wheel are attached to the centre.^[18] It is one among the places where prana resides e.g.- murdha [head], jibha bandhan [frenulum], kantha [throat], hridaya [heart], nabhi [umbilicus], basti [urinary bladder], guda [anus], sukra [semen], ojas [vigor, immunity] and sonita [blood].^[13]

Hridaya as place of Chetana: In intrauterine life at 4th month hridaya and chetana are developed.^[7] Hridaya is the place of chetana (consciousness or live), sleep comes when it is subdued by tamas. Tamas is the cause of sleep and satta is the cause for awakening or above all, nature itself is the dominant cause.^[19,20,1]

Hridaya's relation to Sira, Dhamani and Srotas: Hridaya is the moola sthan [influencing place] of Prana vaha srotas and Rasa vaha srotas.^[21,22] 10 main dhamani originated from hridaya.^[23] 10 siras drain in to the hridaya.^[24] It is the place of siramarma.^[7]

Hridaya's relation to Marma: It is one of the trimarma and it is mahamarma as per Acharya Charaka. It is one of the sadya pranahara marma. It is one of the types of sira marma.^[7]

Hridaya's relation to Nervous system function: Hridaya is the place of sadhaka pitta and thus control buddhi, medha, mana, utsah, avipret. According to Yogashastra. hridaya is the seat for anahata chakra, it is like red lotous with 12 branches. In Amarakosa, the words Chitta, Hridaya and Manas have been used in the same sense. Hridaya is responsible of chetana and also helps in sleeping.^[4] Acharya Charaka told that Saguna Atma, Chitta (Mana) and its Arthas are sheltered or supported in Hridaya.^[1] Astanga Samgraha notes that 'Sadhaka Pitta located in Hridaya, is responsible for Buddhi (intelligence), Medha (memory and intellect), Abhiman [ego], Utsaha (enthusiasm) and the achievement of one's aspirations.^[25] Describing the pathogenesis of Apasmara, Unmad, Charaka noted that the morbid dosha lodged in dhamani affecting Hridaya cause disturbance in its function and the person is affected with stupor and derangement of mind.^[26] Hridaya is responsible for sensory perception. Vyana vayu is present in hridaya^[24] and is responsible for different function in body like nimesh[closing], unmesha [blooming].

Clinical importance of Hridaya

- Injury to the heart gives rise to kasa, swasa, dubalya, kantha sosh, klomakarsana, jihwanigamom, mukha talusosh, apasmar, unmad, prolapse, chittnasha, etc. It is the place of satta, raja and tama. Injury to hridaya cause sudden death.^[18]
- Vidha laksha of prana vaha and rasa vaha almost same as Hridaya is the mool sthana of both. The symptoms includes akrosh[screaming] vinaman [bending of body], moha [perplexing], bhrama [giddiness].^[27]
- Inside the mother womb fetal heart originated at 4th month which along with mother's heart is known as Dwehridaya. At that time chetana [consciousness] and sense organ also start developing. So mother develops different desires things like to taste, to smell, etc. Dwehridaya abamana [Unfulfilled mother desire] at that time may lead to various diseases to the foetus like kubja [hump back], khanja [deformed arm, leg], jara [stupor], vama [dwarf], vikrita akshi nakha [defective eye] etc.^[3]

Study about the functional relation of heart to brain

- It is long known that changes in emotions are accompanied by predictable changes in the heart rate, blood pressure, respiration and digestion. So, when we are aroused, the

sympathetic division of the autonomic nervous system energizes us for fight or flight, and in more quiet times, the parasympathetic component cools us down. In this view, it was assumed that the autonomic nervous system and the physiological responses moved in concert with the brain's response to a given stimulus^[28] (Rein, Atkinson, et al, 1995).

- It was found that, the heart seemed to have its own peculiar logic that frequently diverged from the direction of the autonomic nervous system. The heart appeared to be sending meaningful messages to the brain that it not only understood, but also obeyed^[29] (Lacey and Lacey, 1978).
- Later, neurophysiologists discovered a neural pathway and mechanism whereby input from the heart to the brain could inhibit or facilitate the brain's electrical activity.^[30] (McCraty, 2002)
- The heart's nervous system contains around 40,000 neurons, called sensory neurites³¹. (Armour, 1991).
- The heart and amygdala Research has shown that the heart's afferent neurological signals directly affect activity in the amygdala and associated nuclei, an important emotional processing centre in the brain. The amygdala is the key brain centre that coordinates behavioral, immunological, and neuroendocrine responses to environmental threats. It compares incoming emotional signals with stored emotional memories, and accordingly makes instantaneous decisions about the level of perceived threat. Due to its extensive connections to the limbic system, it is able to take over the neural pathways, activating the autonomic nervous system and emotional response before the higher brain centres receive the sensory information.^[32] (Rein, McCraty and Atkinson, 1995 & McCraty et al, 1995).

CONCLUSION

Ayurvedic science has described functions of Hridaya which is quite same to heart. Ayurveda described the thoracic heart has its own functional brain (Psychological functions). It is not only single pump but is also sensory organ and sophisticated centre for receiving and processing information. Thus in addition to circulation of blood hridaya works as nervous systems functional unit also. The heart is now recognized by scientists as a highly complex system with its own functional brain. It is also clear that hridaya [heart] has brain like functional similarity in case of controlling mind. So there is scope of research.

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