



A Deceptive View On Rasavaha Srotas And Cardiac Diseases :- A Descriptive Study

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Abstract: Ayurveda is holistic science of life which is very ancient. Many siddhantas are explained in Ayurveda, srotas kalpana is one of them. Srotas are the channels of the body through which the materials needed for tissue building, nutrition and other nutrients flow from one corner of the body to the other, we can tell that the materials are transported through the channels from the place of production to place of need¹(Gangadhara) Rasavaha srotas are considered as main srotas since they supply nutrients to all body parts. Aim & Objective: i) To Study the concept of Rasavaha Srotas ii) To Study the Anatomical view of Heart and Cardiac Diseases. Methodology: There are many Ayurvedic text, literature, articles, books which enlighten the topic. Brihatrayee with their commentaries. Conclusion: The transportation is the key for evolution of mankind. The word Srotamsi in the context of srotas indicates all level of exchanging and transportation of Posahya Rasa from Ahara Rasa at micro to macro level of cells and tissue. The sapta dhatu are the product of ahara rasa. The poshya Ras Dhatu is the first tissue. This comes in the heart and is circulated all over the body providing nourishment. If the heart is not developed or if there is abnormalities then the char Ras which is flowing will hamper the body, creating defect in it. This is not only for the organ but all the body organs must be healthy to secure a healthy and faithful life. The article is a try to opt on Rasavaha Srotas in detail view and resemblance with cardiovascular system.

Keywords: Srotas, Rasavaha srotas, Ahara rasa, cardiovascular system

I. INTRODUCTION

Human body is a conglomeration of srotasa. It is a channel system of our body. Those from which sravana or flow of body substances take place or those through which the materials flow in the body are called srotas².

According to Chakrapani, the channels who transport the poshaka dhatus (the part of the rasa etc) tissues which flow to provide nutrition to the successive tissues are called as srotas. The srotas have their own moolasthan or root³. Chakrapani mentioned moolasthan of srotas as prabhavasthan means the anatomical seat of respective srotas is the main seat of pathological changes, its be the focus of treatment.

Acharya Sushruta explains two type of srotas i.e Bahirmukha and Antarmukha⁴. Rasavaha srotas are considered as main srotas since they supply nutrients to all body parts. Rasa vaha srotas, the channel of the lymph and plasma, which is responsible for delivering refined nutrition and nourishment to every cell and tissue throughout the body. Rasa means 'movement', as per this definition any liquid element in body which flows may be treated as Rasa including Rakta and lymph etc⁵.

Rasavaha Srotas are considered as main Srotas since they also give Poshana to Rasa Poshan through this Srotas since food first goes to Yakrit then through the circulatory system of Hrudaya it will circulate to all body parts. Therefore the concept of Rasavaha Srotas in Ayurveda may be correlated with modern functions of heart, lungs and liver⁶.

The Cardiovascular diseases is the world's biggest killer and claims more than 17.5 million's lives over the world. The Asians Indian are at 3-4 times higher risk of CAD than white Americans, 6 times higher than Chinese, 20 times higher than Japanese. The incidence of Coronary Artery Disease in young Indians is 12-16% which is higher than any other ethnic group and 5-10% of heart attack occur in Indian men and women who are younger than 40 years. The number of patient with coronary artery about 25% of overall mortality⁷.

Methodology:

The heart is an important seat (primary location) of vata, pitta, kapha, and ojas (the subtle essence of vitality and immunity), and it plays a crucial role in a number of internal bodily channels (srotamsi). The Ayurvedic texts reveal that the heart is intimately connected to every cell and tissue throughout the body. No other organ in the body shares that level of integration with the entire body. The organs and channels through which this Rasa Samvahana (circulation) takes place are collectively termed as Rasavaha Srotas and include the following – Hrudaya (heart), Sira –Jala (network of veins), Dhamani Jala (networks of arteries), Rasayani Jala including the Lasika Granthis (network of lymphatics)^{8,9}.

Related with Rachana Sharira-

Hrudaya- This organ is made up of Mamsa dhatu, having the shape of a lotus bud held upside down, located in between the two lungs inside the chest just beneath the sternum slightly to the left of the middle line, its apex about 1” below the left nipple. The entire organ is covered with two layers of Snayujakalas -the Hrudayavarana Kala/ pericardium. In between the two layers, there is a small amount of thin fluid to help its free movement.

With its bag, the heart measures 6” in length, 4” in breadth, 3” in thickness and weighs about 200-300 gms, in an adult. Hrudaya is a hollow organ having 4 compartment viz, the two Hrtkarnas/ right and left auricles and two Hrtkukis/ right and left ventricles- Hrtkarnas being the upper cavities and Hrtkukis the lower one each on either side. The two halves /right and left of the Hrudaya are separated by a thick band of Mamsa while, in between Hrtkarnas and Hrtkukis, there are Kapatras / Valves with two Patras/ cusps on the left side and with the three on the right. These Kapatras/ valves allow anything from above downwards only, but not in the reverse direction.

Hrudaya is connected with the main trunks of Dhamanis and Siras / Mula. The Uttara and Adhara Mula Siras / Mula. The Uttara and Adhara Mula Siras / SVC and IVC join the right Hrtkarna / right auricle and empty their contents into it. From the left Hrtkarna / left auricle empty their contents into it. From the right Hrtkukisi / right ventricle arises the main Puppusabhi Sira / pulmonary artery which, dividing itself into two, carries Rasa-Rakta to the two Puppusas. From the Vama Hrtkukisi / left ventricle arises the main trunk of Mahadhamani /Aorta, which arises upwards, takes a curve above the Hrudaya and descends down into the abdomen. At the root of this Muladhamani, two branches arise from it at the level of its bend on either side of its neck, which supply Rasa-Rakta to the Hrudaya itself known as Hrtposini Dhamani / coronary arteries. All along their length, the Dhamanis go on giving out small branches, the terminal branches / arterioles being as small as cannot be seen by the naked eye. These terminal branches of Dhamanis / arterioles fuse with similar terminal branches of the Siras / venules at the level of the Dhatus/ tissue. These terminal Siras, in their turn, join bigger Sira / veins. Thus two Jalas / network, one each of Dhamanis and Sira are spread out all over the body.

In addition to these two, there is still one more the Rasayani Jala/ lymphatic network innumerable minute tubes of varying lengths, white in color, spread out all over the body, they are connected with small Granthis/ lymph Glands in between and finally join the main trunk of veins inside the chest, at the level of the neck and empty their contents into them. These, Granthis, called Lasika Granthis/ lymph gland are smooth, soft and are of the size of grapes. Even though present all over the body they are found in bunches in the Griva/ neck, Karnamula/ back of the ears, Kaksa/ axilla, Uras/inside the chest, Udara/ inside the abdomen, Vankshana/groin, etc. The Rasayani Jala is again of two kinds- lacteals/ Payaswini Jala comprising of Rasayanis arising from the walls of the Antras/ intestines which fuse into two medium sized channels, the right and left Rasakula/ lymphatic ducts, the left one being bigger, Called as Mukhya or Pradhana Rasakula/ thoracic duct. Payaswinis are so called, because they collect from the intestines the Payasa Rasa /chyle which is a portion of Ahara Rasa, they purvey half of this fluid to the Yakrit / liver, to be converted into Rakta blood formation, the other half is poured directly into the Sira. And other on is Laskia Jala / lymphatic vessels is the network of channels situated beneath the Twaka/ skin, connected in between with Granthis called /more appropriately as Laskia Granthis. This network also joins the main veins inside the chest and pours contents into it.

The Dhamani jala appears red in color the Sira Jala blue and Rasayani Jala /lymphatic is white. That is the major difference in this three Jala¹⁰.

Sroto Dusti Karana¹¹⁻

AHARA	VIHARA	MANSIKA
Food which are At-Snigdha, Atisita, Swadu, Amla, katu, Madura, Guru, Adhyasana, Visamasana, Anasana/ Malnutrition. Atimadyapa, frequent hot drinks like coffee & tea, Avyayama, sweet & fatty foods, over eating, use of tobacco and alcohol,	Lack of exercise, mental emotions have been the most important causes in the present day. Heart diseases are seen more in civilized societies and advanced countries. use of white sugar, meat, marrow, animal fats, ice-cream etc. have proved to be causes of heart attacks.	Udwegas /mental emotions like Krodha/anger, Irsya/ jealousy, Bhaya/fear, chinta/ worry, disappointment, frustration, social ill-adjustment etc. VISHISTHA VYADHIS OF OTHER ORGANS- Phupphusa Roga, Vrukka Rogas, Amavata, HTN, Surgical operations and Aushadha. Sahaja Vikritis.

Vridhi/Kshaya Lakshana of Rasa Dhatu^{12,13-}

The effect of Rasa Vriddhi, Rasa Kshaya and Ojas Kshaya are clearly discernible in all the organs of this system and so have to be carefully noted. Some important Lakshanas are tabulated

RASAVRUDDHI	RASAKSHYA	OJASKSHAYA
HRUDAYA Hrd Ayama/ dilatation	Hrd Sankocha/atrophy	Kriya Nirodha
Hrd Gaurava	Hrd Shunyata	Hrd Stambha
Hrd Drava	Hrd Tama, Hrd Kampa, Hrd Drava, Hrd Shula.	Vegakshya
TWAK & DHATUS Sweta Varna	Ruksata	Duchchaya, Gatra Sada
Shaitya		Gurugatrata
Shotha		Mamsakshaya
Gurugatrata		
SIRAS AND DHAMANIS Kathinya, Ayama, Granthi, Vidirna	Riktata, Saithilya	
MANASIKA LAKSHANA Alasya, Atinidra	Tama, Nidranasha, Sabda Asahisnuta	Bhaya, Adhyana, Tandra, Nidranasha, Murcha, Moha, Pralapa, Samjna Nasa
ANYA LAKSHANA	Truhsna	Ati Dourbalya, Marana

Praseka, Kasa, Shwasa		
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Layers of Heart	Diseases caused by Vata	Diseases caused by Pitta	Diseases caused by Kapha
Endocardium	Valvular abnormalities	Bacterial Endocarditis	Endo cardial fibro- elastosis
Myocardium	Atrophy / fibrosis and dilatation of heart	Myocarditis	Hypertrophy due to storage disorders
Pericardium	Pericardial constrictions	Pericarditis	Pericardial effusion

In Ayurvedic samhitas and Puranas (1000 BC to 500 AD) observations have been recorded regarding the concept, manifestations and management of Hrudaya Roga. While the Medieval period a simplification of the knowledge already rendered in the classical age is found. An account of general features, signs and symptoms of five types of heart diseases (Vataja, Pittaja, Kaphaja, Sannipataja and Krmija), definition of heart diseases, aetiology, pathogenesis and management have been described in Charak Samhita, Sushruta Samhita and Astanga Hridaya. Some of Cardiac diseases described below can be correlated with above 5 types of Hrudaya roga.

Mitral

This occurs when the mitral valve in the heart does not close tightly enough. This allows blood to flow back into the heart when it should leave.

Mitral Valve Prolapse

The valve between the left atrium & left ventricle does not fully close, it bulges upwards, or back into the atrium.

Peripheral Arterial Diseases

Diseases of blood vessels that supply blood to the arms and legs.

Cardiomyopathy- Diseases of cardiac muscles

Heart Failure

A critical syndrome cause by the inability of the heart to supply sufficient blood to the tissues to meet their metabolic requirement.

Pulmonary Heart Diseases-

A failure at the right side of the heart with respiratory system involvement.

Endocarditis-

Inflammation of the inner layer of the heart, the endocardium.

Myocarditis-

Inflammation of the myocardium, the muscular part of the heart.

Congenital Heart Disease-

Heart structure malformation existing at birth.

Rheumatic Heart Disease-

Heart muscles and valves get damaged due to rheumatic fever.

Coronary Artery Disease-

Due to hardening of arteries (atherosclerosis)

Discussion:

Rasavaha Srotas are considered as main Srotas since they give Poshana to Rasa Dhatu and Rakta Dhatu. Yakrit and Hrudaya contributes significantly towards Ahara Rasa Poshan through this Srotas since food first goes to Yakrit then through the circulatory system of Hrudaya it will circulate to all body parts¹³.

Rasa Dhatu's main function is Preenana (gratification) and Rakta Poshana (nourishment of corresponding Rakta Dhatu)¹⁴. Blood i.e. Rakta is haemoglobin portion of blood and giving oxygen supply to all over the body. Unobstructed Srotas allow manufacture of new tissues and proper flow of nutrients and waste materials. Impaired functions of Srotas lead to stagnation of Doshas, Dhatus and Malas in the Srotas of the respective Dhatu and thus produces disease. Hence, improper Ahara vihar leads to the Rasavaha Sroto Dhusti and this result in the formation of many Hrudaya roga. Chakrapani mentioned moolasthanana of srotas as prabhavasthanana means the anatomical seat of respective srotas is the main seat of pathological changes, so it is necessary to protect heart and Dash dhamani(moolasthanana of Rasavaha srotas) from various nidan and this moolasthanana be the focus of treatment.

Conclusion:

Rasavaha Srotas is considered as systemic capillary circulation by Acharya Ghanekar (commentator on Sushruta samhita)¹⁵.Rasa dhatu is the foremost Dhatu formed in the body which is responsible for the existence of the body. The Sthana of the Rasa dhatu is Hridaya from here it circulates all over the body. If the heart is not developed or if there is abnormalities then the char Ras which is flowing will hamper the body creating defect in it. This is not only for the organ but all the body organs must be healthy to secure a healthy and faithful life.

Hence it is necessary to have profound knowledge about this Rasa dhatu and the manifestation of diseases due to rasa dushti.. Many Hrudaya Roga are due to Rasavaha Srotas Dushti in which Rasa and Rakta are mainly affected.Symptoms described for Rasavaha Srotas Dushti in Ayurveda were clearly corelated with cardiac diseases, delay in their management may lead to grave consequences.

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