



ANATOMICAL AND PHYSIOLOGICAL STUDY OF PRANVAHASROTAS

AUTHOR:

1. **Dr. Atul Gopal Kesarkar** (Associate Professor, Rachana Sharir, Shivganga Ayurvedic Medical College and Research Center, Patgaon)
2. **Dr. Amol Ashokrao Deolekar** (Professor, Kriya Sharir, Shivganga Ayurvedic Medical College and Research Center, Patgaon)
3. **Dr. Raj Ahamad Ghudulal Jamadar** (Associate Professor, Kriya Sharir, Shivganga Ayurvedic Medical College and Research Center, Patgaon)

ABSTRACT:

The Srotas related with the transportation and transfusion of Pranavayu in the human body has been named as Pranavahasrotas, which is of prime importance for animates. Pranavahasrotas which is first in number in the chronology of Srota Shareera belongs to the basic life system as its nomenclature speaks to the facts. As the term speaks, it is channelized system for the transportation of the life forces (Prana). Respiratory system itself is very important system in the body which functions for the transportation of oxygen and carbon dioxide. Similarly cardiovascular system is also very important for life system which transports nutrients and nourishes to whole body and also glucose as material of first order for the life process.

KEY WORDS: Pranvahasrotas, Pranvayu, respiratory system, cardiovascular system

INTRODUCTION:

The aims of Ayurveda are to restore the health of healthy individual and to cure the diseased person. Promotion of positive mental health is essential for acquiring state of eternal supreme happiness i.e. Moksha. It defines a useful and harmful, happy and unhappy life and gives means for constantly maintaining a balanced state of Tridosha. According to Sushrutacharya Pran means that the entity which does the protection of Sharir these are twelve factors i.e. Agni, Som, Vayu, Satwa, Raj, Tam, Panchindrya, Bhutatma. The specific channels constituting the internal transport are named as Srotas. The term Srotas means a channel or path. It is derived from the root "Sangatan", means to flow, to ooze or exude. Acharya Charaka the founder of Sroto Shareera is presented under Srotovimana chapter of Charaka Samhita has presented that organism is the organization of systems of channels. The Srotas which carries the Prana is called as Pranavaha Srotas. Acharya Charaka has opined that Srotases are the

channels, which transports the metabolic derivatives in the body as essential constituents. Acharya Sushrut has opined that ducts emanating from the cavity of the body other than the Siras (Veins), Dhmanies (Arteries) and found to course through the whole body are strata's. Srotas are also defined as the structure through which "Sraavan" (Oozing, Permeation and filtration of materials) takes place. Srotases are considered as the channels, distributed in the entire body of individuals, the importance of Srotas has been stressed out both physiologically and pathologically, In Physiological point of view they carry the nutrient materials such as Rasa and Rakta to the distant parts of the body and help in nourishment of tissues. Regarding numbers of Srotases there is no specific numbers because at some level it is defined by Charaka that every functional factor in the body holds its own Srotas. The Srotases also act as one of the important factor in Samprapti or Pathogenesis of diseases, as it is said that diseases are caused because of obstruction in the Srotases. Sroto Shareera can be seen in a much elaborated form as presented in Ayurvedic texts which ultimately opens to the fact that functional Anatomy as well as Systemic Anatomy has been an important area of learning in the fundamental biology. Under Ayurvedic concept on Srotoshareera these two systems have been somehow explained under heading of Pranavaha Srotas, under the consideration of the Mulasthanas of Pranavaha Srotas. Acharya Charaka has said that Pranavaha Srotas moolsthana are Hrudaya (heart) and Mahasrota. Acharya Sushrut has presented the moolsthanas of Pranavaha Srotas are Hrudaya (heart) and Rasavahi Dhmanies (Blood Vessels). Sharangadhara samhita explains that Prana which is situated in the Nabhi comes to Hrudaya from Hrudaya it goes out to environment through throat to drink the Vishnu Padaamruta or Ambara Peeyusha, Ambar means sky and Peeyusha means nectar. After taking atmospheric nectar i.e. oxygen, it enters the body again through Pranavaha Srotas to nourish the whole body and to stimulate the digestive fire for the proper digestion of food.

AIM AND OBJECTIVES:

1. Review the Anatomical correlation of Pranavahasrotas with modern science
2. Review the Physiological correlation of Pranavahasrotas with modern science

MATERIAL AND METHODS:

1. Literary review from Ayurvedic texts.
2. Literary review from Modern texts.
3. Literary review from various articles.

OBSERVATION:

As we discuss earlier that literary means of Pranavahasrotas is that "The channels where prana dwells and moves." But, because at different places Prana is considered in different meanings as mentioned in synonyms, then doubt arises that which prana should be considered as prana in pranavaha srotas. Pranayatan are also considering as those places where prana is special intimate. So in general, Prana should move among these places and so these pranayatan should consider as Pranavahasrotas. But by accepting these both concepts it would be impossible to

identify that infact which srotas should be considered as Pranavahasrotas. Where prana word has so many meaning, Pranayatan also has ten places which include marma (Shir, Hridaya, Basti, Nabhi, Guda and Kantha) and raktha, sukra, ojus and manas. Out of these, Charaka and Sushruta both have described raktavaha, manasavaha, sukravaha, and pranavahasrotas separately. So if we consider the pranayatana as channels of prana then many contradictory things may arises as pranayatan itself will cover raktavaha, mansavaha, sukravaha and pranavahasrotasa. If this would be assumed by Charak and Sushruta then they would not described Pranavahasrotas separately from all these srotasa. But as we known, Charak and sushurta have described Pranavahasrotas and these srotas separate i.e. these would not be the same but would be separate srotas. For clearance of all these doubt, Chakarpani has made clear ideas as – So pranavahasrotasa should be consider as srotas for prana sangyak vatavahanam i.e. (prana vayu), he also said that prana – here prana word is specially used for prana vayu, with this he also explains that in general vayu is moving in all sira and dhamani and it is right, no doubt, but Pranavahasrotasa is specially described for prana sangyak “Prana vayu”. According to Acharya Sushutra Hridaya and Rasavahinie Dhamanies are pranavahasrotasa mulas. At the time of comment on Sushutra, Sri Ghanekar has said that in Sushutra, there should be Pranavahani Dhamanies in place Rasavahini Dhamanies as mulas of Pranavaha Srotasa and bronchi, Bronchiole and pulmonary artery should be consider as Pranavaha Dhamanies arises from Hridaya, and Prana Vayu is spread in whole body by Hridaya. In fact, this It is strange that why any Acharya has said of not Fuffus (lung) as mulas of Pranavaha Srotas. In place of this Fuffus, Both Acharyas have described Heart as Mulas of Pranavaha Srotasa. The probable explanation of this may be that, Hridaya is only one structure which apparently throw any substance (such as Rasa, Raktha or Prana Vayu) throughout body and expect Hridaya, there is not any clearly visualized organ which actively take part in such kind of work. So, when Prana Vayu is coming in Urah Pradesh from outer atmosphere, then it is the heart that spread Prana vayu in whole body. And surprisingly it is very true. As we know with Modern science, that after absorbed in pulmonary blood oxygen comes to heart and from there it spread out in whole body. So it is not very contradictory to assume heart as mula sthana of pranavaha srotas. Second mula sthana of Pranavaha Srotasa is mentioned “Maha Srotasa” by Acharya Charak and Acharya Vagbhata. It is also a controversial things, that how can one assume maha srotas as mula sthan of Pranavaha Srotas. Maha srotas is considering as maha srotasa from “mouth to anus”. Although Charak, Susruta, Vagbhata or any other Acharyas do not count maha srotasa as a srotasa by its name. Acharya Charaka has considered it as mula sthan of Pranavaha Srotasa, but the reason is not explained. And third rasa vahi dhamanies are assumed as mulas of pranavaha srotasa by Acharaya Susruta. It perhaps because rasa vahi dhamanies are assumed as spreading occurs through these rasa vahi dhamanies and perhaps due to this rasa vahi dhamanies are considered as mula of pranavaha srotasa. Although the commentarators of Susruta, has an different thought and they says that his rasa vahi dhamnies should be consider as prana vaha dhamanies. And by this they consider it as Bronchi and pulmonary arteries. The respiratory tract’s role in facilitating gas exchange aligns with Pranvaha Srotas and its connection with the oxygen. The relation between heart, lung and blood vessels is vital for the transportation of oxygen and nutrients throughout the body.

If accordance with pathology the symptoms of heart diseases closely parallel the signs and symptoms of disorders of Pranvahasrotas. So we can come to know that the relation of Pranvahasrotas is with both the cardiovascular system and respiratory system.

DISCUSSION:

While giving the definition of srotas, Charak has defined them as the channels which carry the transformed material after its digestion, all the structural aspects remain present in the body are representative aspect of srotas shareera only. Charak considered the body is nothing but the combination so many srotas .Based on above explanation, Acharaya Charak has tried to explain the definition of srotas in scientific way. If it is closely analyzed it can be considered that srotas are micro and macro structural aspects which absorb the external substance inside and in turn are also responsible for ejecting the waste products after the process of digestion. If we follow the sequences of srotas we will find that it is according to scientific standards presented by Charak and is associated with structure and Sharira Kriya in Ayurveda. Even with very less research work on srotas, his contribution towards the same are amongst adorable, excellent scientific principles explained ever by anybody. He gave complete information about principles of srotas shareera and gave high place to it when compared with other general principles of human body, he mentioned regarding this in vimanasthana, while giving the definition of srotas Acharya Charak has defined them as the channels which carry the transformed material after its digestion and all the structural aspects remain present in the body. Acharaya Sushurta was also equally scientific but as he was authority of surgery view of approach is different towards the subject. According structure that takes part in transportation and is spread within the body should be considered as srotas. By this we can understand that the explanation given by Sushurta is equally scientific when compared with Charak. He deviates himself only by not considering the siras and dhamani as srotas, by explanation of both acharay we can understand that there is not much difference in between their views. The srotodusti lakshana atishrushtam (increased in breathing rate), atibadham (difficulty in breathing), kupitham alpa and bhikshanam (increased breathing rate with short frequency), sashabha shoola (breathing pattern with sound and pain) and also abhigata or injury of pranavaha srotas causes vinamana (deformity of thoracic region), mohana (loss of unconsciouness), bramana (illusion), vepana (tremors), maranam (death). Above mentioned signs and symptoms are related to respiratory systems, so hence pranavaha srotas can be compared with respiratory system. In Pranavaha srotasa, Prana word is used for “Prana vayu”. It means the places where Prana vayu resides and moves can be considered Pranavaha srotasa. Again on this basis, most of Acharyas consider Pranavaha srotasa, equivalent to Respiratory system. It is also looking right in reference to diseases, which are consider in pranavaha srotasa are same diseases which are consider in respiratory diseases. In reference of “Pranayatana”, Prana word is used for Life, and Ayatan means habitat. It means the special place where life dwell specially are considered as pranayatana. Shwasa and kasa are the diseases which are described in pranavaha srotodusti and also as diseases of respiratory system. Hikka is a disease which is consider as a disease of pranavaha srotasa in Ayurveda, But as a disease of Gastro- intestinal system in modern. It may be explained on the basis of this – that , the act of respiration is necessarily stopped, during the episode of hikka and

hikka can be a sign of advanced respiratory problems, because so many diseases of respiratory system are capable to produce hikka i.e. it could be a symptom of respiratory disease. Shwasankriya is performed by the help of Pranvayu and Udanvayu in the form of Uchhwas and Nishwas simultaneously. The Udangati (expiration) and the Prangati (inspiration) both together form the Shwasgati i.e. complete respiration.

CONCLUSION:

1. Anatomically Pranvahasrotas is correlated with the respiratory system.
2. Physiologically Pranvahasrotas carries Pranvayu so it is correlated cardiopulmonary system.
3. Pathologically on the basis of moolsthandushti and srotodushti also Pranvahasrotas can be correlated with the respiratory system.

REFERENCES:

1. Ashtanga sangraha of Vagbhatacharya, (English translation), Prof.K.R Shrikant Murthy, Choukhmba Orientelia Varanasi, Second edition 1999.
2. A text book of medical physiology, Arthur C. Guyton, W. B. Saunders Company west Washington square, Philadefia, PA, Eight editions 1991.
3. Ashtanga Hridayam, Arundatta Virachit, Dr. Anna M. Kunte, K Naware, Choukhamba Orientelia, Delhi, Seventh edition 1982.
4. Ayurveda ke Mulsidhhant 1st part, Dr. Laxmidhar Dwivedi, Krishnadas Academy, First edition 2000.
5. Ayurvediya kriya sharira, Vd. Ranjitray Desai, Shree Baidyanath Ayu. Bhavan ltd Nagpu, 8th Edition 1999.
6. Ayurveda the science of self- healing, Dr. Vasant Lad, Motilala Banarasidas publishers private Ltd. Delhi. 1st edition.
7. Ayurveda arogya vidnyan Kosham, P Govinda Panikar, Sun Co Publishing Division, 4th Edition 2005.
8. Ayurvediya Kriya Sharira, Ranjith Rai desai, Baidyanath Ayurved Bhavan, Nagpur, 8th Edition 1994.
9. Concise Medical physiology, Sujit K. Chaudhary, New Central Book agency, Calcutta. 2nd edition.
10. Charak samhita, M Narayan Vaidya, Dhanvantari printers, Kannur, 1999.
11. Charak samhita, Dr. Brahmanand Tripathi forwarded by Dr. Ganga Sahaya Pande, Chaukhambha Surbharati Prakashan.
12. Essential of Medical Physiology, K Sembulingam, Prema Sembulingum, Jaypee Brothers Medica Publishers, Delhi. 3rd edition.
13. Human Anatomy Volume I, B.D. Chourasiya, CBS publishers & Distributors, 4th edition.
14. Sushrut Samhita, Dr. Bhaskar Govind Ghanekar, Meharchand Lachhamandas publication, Ansari Road Dariyaganj ,New Delhi, Reprint 2006.

15. Sharir kriya vidnyan (A textbook of physiology in Ayurveda), Dr Nandini Dilip Dargalkar, Choukhamba Sanskrit Sansthan, Varanasi, Reprinted 1998.
16. SushrutaSamhita(Dalhanachar Tika), Acharya Priyavat Sharma, Choukhamba Orientalia, Varanasi, 8th Edition.

