

REVIEW ARTICLE

A Critical Review on *Rasadhatu Samvahana* w.s.r Lymphatic Circulation

Author: Amardeep Kour¹

¹NAM, Govt. Ayurvedic Hospital, Jammu, India

ABSTRACT

Ayurveda is the eternal science of life. It gives us the various phenomenon related to our body in the form of *Kriya sharir*. Ayurveda say *Dosha dhatu malamulam hi shareeram* which means *dosha* along with *dhatu* and *mala* are the roots of *shareerutpatti*, *prakriti* and *vikruti*. When these are in *prakruta awastha* they lead to a healthy state of body as well as mind and when they are in *vikruta awastha* leads to the diseased condition of body and mind. For the proper functioning of body, *dosha* are important but *dhatu* also plays an important role. *Dhatu* does the *dharana* and *poshana* of the body. *Rasa* is the first and foremost *dhatu* of the body and it helps in the *vridhi*, *dharana* and *kshatipurti* of the body by residing in *hridaya* and then from there traveling all over the body with the help of twenty four *dhamanees*. And an effort has been done to enlighten the concept of *Rasa Samvahana*. Circulation of *rasa dhatu* in body through this article.

Key Words *Rasa, Samvahana, Poshaka, Jala, Agni, Shabda, Circulation, Hridaya, Dhamnees*

Received 09th January 21 Accepted 10th February 22 Published 10th March 2022

INTRODUCTION

WHAT IS RASA?

In *Susruta Samhita sutrasthana* it is explained that the extract or essence of the food which is in ultra fine or minute form is called *Rasa*. The *rasa dhatu* is directly formed from the essence of food that we take. When the food enriched with *shadrasas*, *panchmahabhutas*, *dwividhaveeryas*, *shatvidhaveeryas*, *ashtavidhaveeryas*, *anekagunas* is subjected to proper digestion by *Jathragni* it is converted into microfine (*paramsuskshma*) extract or essence and this essence of food is called as *Rasa*¹. The microfine form is very essential for the *rasa* to flow freely in the circulation and nourish the body. It is also

mentioned by *Acharya Susruta* that *rasa dhatu* is one that always moves or circulates and for its *samvahana*, *vyana vayu* does the *preran karma* and *vikshepana karma*. i.e it motivates the *rasa* to come out of *hridaya* makes it to travel in all the directions of body.

RASA SAMVAHANA

Acharya Chakrapani has stated that the *parthiva anshbahulahara rasa* travels to *yakruta* for further paka and formation of next *dhatu* and the *apyabahulahara rasa* travels to *hridaya* with the motivation of *vyana vayu*.

According to *Acharya Bhela*, *Rasa* is circulated from *hridaya* to all over the body with the help of *vyana vayu*. *Acharya Charaka* has stated that

REVIEW ARTICLE

samvahana kriya is done by the *vikshepana karma* of *vyanavayu*² and it does the *poshana* of *dhatu* i.e *dosha*, *dhatu* and *mala* of the *shareer* with the help of *kedarikulyanyaya*.

Acharyas has taken both *rasa* and *rakta* while explaining the *samvahana*. It is mentioned in the texts that *rasa* and *rakta* travels through the *susrutokta* twenty four *dhamanees* and *charakokta* ten *dhamanees*³. And after providing *poshana* to all the *dhatu* and *kosha*'s of the *shareer* they travel back to the *hridaya*. This is how the *rasa* does its *prenana karma*. And this process is the continuous circulatory process that never stops just the way a wheel once start rotating will never stops.

Acharya susruta has mentioned, the location or seat of *rasa* is said to be *hridya* or heart. The food is digested in the stomach and intestines. After proper digestion (*poshaka rasa dhatu*) essence of food whose function is to nourish is formed. This *rasa* is being pushed by *vyanavayu* and reaches *hridya*. The *rasa* from *hridya* enters the twenty four *dhamanees*⁴ and reaches different parts of the body pumped by the heart with the help of *vyanavayu*.

Through the *tendhamani*'s travelling in upward direction, the *rasa dhatu* travels and nourish the upper part of the body. Through the *tendhamani*'s travelling in downward direction, *rasa dhatu* travels and nourish the lower part of the body and travelling through four *dhamani*'s going laterally or sideways, the *rasa dhatu* nourishes the lateral parts or sides of the body⁵. Though *rasa* is circulating all over the body, its

main site is said to be *hridya* because it is *hridya* which distributes the *rasa* through the *dhamani*'s. *Acharya sushruta* in *Shareersthana* has given detailed description relating to the circulation of *rasa dhatu*. Twenty four *dhamani*'s take their origin from the *hridya* and further branched into thousands of small tributaries and supply each cell of the body. These branches of *dhamanis* appear in the form of large network. Their terminal endings open up in hair follicles (*romakupa*) through which they excrete the wastes in the form of sweat. These branches carry *rasa* through their minute branches and nourish each and every corner of the body. The terminal branches of *dhamani*'s located near the surface of skin or in the vicinity of roots of hair follicles absorb the *virya* of the medicines when treatment like *abhayanga*, *parisheka* (steam pouring of medicated oils or liquids), *avagaha* (tub bath in medicated liquids), *lepa* (herbal pastes) etc. are conducted or applied over the skin⁶.

The active principles of medicines get digested and processed by the *bhrajaka pitta* and to a form which is beneficial to the body and are transported to *rasa dhatu* through the terminal openings of *dhamanees* in the skin.

Thus, the *dhamani*'s help in nourishing the *rasa dhatu* through skin also.

The flow and transportation or circulation of *rasa dhatu* is been explained by *Acharya Susruta* in *Sutrasthana*

Sashabdaarchijalastanvadnumavisheshenanudhavytyavevamshareeramkevlam⁷

REVIEW ARTICLE

Acharya Dalhana has stated “*anunavisheshana*” means “*sukshmaprakarena*”, “*anudhavtyeva*” means “*sancharana*”. From *hridya*, *rasa* travels through *sukshma* to *sukshmatararasvahinees* to all the dhatus and from *sukshma* to *sthulasiras* travels back to *hridya*.

Acharya *Susruta* has explained the *rasasamvahana* with the help of this simile of “*shabdaarchijalastanvadnuma*”. The *rasa dhatu* runs in microfine way all through the body uninterrupted just like the *shabda* (sound waves), *archi* (flames of fire) and *jala* (flowing water). *Shabda* denotes the *tiryakgamitva* of *rasa* i.e the lateral flow, *Archi* denotes the *urdhvagamitvai* i.e the upward flow of *rasa* and *Jala* denotes the *adhogamitvai* i.e the downward flow of *rasa*.

Acharya *Dalhana* in the above context has also stated that in *tikshnaagni purusha* *rasa* travels like the speed of *shabdainmadhyamagni purusha* travels like the speed of *agni* and in *mandaagni purusha* it travels like the speed of *jala*. As a result of which in *tikshnagni purusha* the formation of *rasa* to *shukrah* happens in eight days and in *mandagni purusha* formation of *rasa* to *shukra* happens in one month⁸.

This law of *rasa* circulation is explained well in ayurvedic text and is explained in modern prevalence as follows

Shabdasantanvata: Just like one sound wave pushes the other sound wave and occupies its place and makes it to travel in all the directions (*tiryakgamitva*), in the same way the *ras dhatu* pushes the part of *ras dhatu* ahead of it

in the channel and occupies its place. This pushing forward of the successive part of the *rasdhatu* by the part of *ras dhatu* preceding it in the channels of *dhamani* makes the *ras dhatu* to flow. This is the concept of pressure gradient and filtration.

Archisantanvat:- This explains the process that is happening in the *dhatu kosha* (cells), When a material burning in the fire burns completely, the part of burnt material gives way to the next part of the material which is in queue of being burnt and this process goes on till the complete burning of the material. In the same way the tissues or the body parts make use of *ras dhatu* supplied to it and it gets replaced by *theras dhatu* in the circulation.

Jalasantanvata:- Just the water oozes or overflows to its surroundings without any pressure, *theras dhatu* too oozes out from its terminal ends of the *dhamanees* into the tissues to nourish them. It is the concept of osmosis.

Few commentators have mentioned that *Archisantan* means *dhamanigatapravaha* of *rasa*, *Shabdasantana* means *siragatapravaha* of *rasa* and *Jalasantana* means *srotogatapravaha* of *rasa*.

According to Dr. *Ghanekar*, for the circulation of *rasa* from *srotas* to cells and tissues, process of filtration, osmosis and diffusion are responsible⁹.

The main function of *rasaisprenana* i.e nourishment to tissues. In the modern view, twenty upward and downward moving arteries are superior vena cava, inferior vena cava, right atrium, right ventricle, pulmonary artery, p

REVIEW ARTICLE

ulmonary vein, left atrium, left ventricle, aorta and thoracic duct¹⁰. The four arteries moving laterally have its branches to skin (hair follicles). These arteries receive the sensory perceptions. The hair follicles excrete waste product in the form of sweat.

DISCUSSION

The *rasa samvahana* is the circulation of *rasa dhatu* as a *poshaka rasa* that circulates within the *rasavahasrotas* for the *premana* of *poshyadhatus*. *Poshaka rasa* first goes to *yakrit* and then to *hridaya*. From *hridaya* it will be circulated throughout the body by *vikshepana karma* of *vyanavayu*.

Acharya dalhana has described the circulation of *rasa* comparable with these three entities i.e. *shabda*, *agni* and *jala* depending upon the variable characteristics like direction, motion and formation of *dhatu*s.

As the sound waves proceed with high velocity in circumferential direction and is produced very rapidly, the comparable *shabdasantanvata rasa* circulates with higher velocity, lateral direction and is formed rapidly due to high *agni* content (*tikshnagni*).

As the flame tends to move in upward direction with a moderate velocity but is formed not very rapidly. The similar *agnisantanvata rasa* also moves in upward direction, with moderate velocity as compare to sound waves and is formed with moderate velocity as compare to sound waves and is formed with moderate speed

due to moderate *agnicent* (*madhyamagni*). Above description shows a hypothetical transportation of *rasa dhatu* in body in different directions by comparing its directions with flow of *shabda*, *archi* and *jala*.

As the water has the tendency to flow towards the depth with slow velocity. The similar *jalasantanvatarasa* circulate slowly and downwards within the body. Thus, *jalasantanvatarasa* lead to *agni* content formed during *mandagni*.

The motion entity of *rasa samvahana* can be compared with the rate of flow of blood in different parts of body. Blood circulating in arteries moves with higher pressure to perfuse the body tissues whereas the blood within veins moves at a comparatively lower pressure. The vessel walls of arteries are thicker to withstand higher pressure whereas the walls of veins are comparatively thin with valves within its lumen to prevent the backflow of blood.

The mean arterial pressure of blood is about 70-110 mm of Hg. The total volume of blood throughout the body is approximately equal to the total blood circulating within a minute i.e.; the cardiac output. About 30% of this volume reaches the liver, about 26% reaches the kidney and 15% of cardiac output reaches the head and remaining portion supplies to the rest of the body¹¹.

These normal limits of tissues perfusion results in proper development and functioning of tissues and organs. Any deviation from the normal limits may dearrange the homeostasis and impair the

REVIEW ARTICLE

physiological functioning resulting underdevelopment and malfunctioning of the organs.

Our health depends on how best the *poshaka* rasa is formed, how uninterruptedly it circulates throughout the body and how it nourishes the dhatus. Insufficiency of *rasa samvahana* may lead to *rasa dhatu kshayalakshana* or palpitation, emptiness of heart, darkness of vision, cardiac pain etc¹².

CONCLUSION

Rasa samvahana is important for nourishment of dhatu so we should always put effort to protect *rasa dhatu*. The concept of *rasa samvahana* in ayurveda exactly resembles with the modern blood circulation. The *rasa dhatu samvahana* is precursor to the *rakta dhatu samvahana* and both are important for the *poshana* of other dhatus and for the *prenana* and *jeevana karma*.

REVIEW ARTICLE

REFERENCES

1. Susruta Samhita Sutrasthana, chapter14, pageno.61,vol-1,byDr.Ambikadattshastri, edition 2011, chaukhamba publications New Delhi.
- 2.Charaka Samhita Chikitsasthana chapter 15 page 459,vol. 2,by Pt.Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti academy.
- 3.Charaka Samhita Vimanasthana chapter 5 page-711 Pt.Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti academy.
4. Susruta Samhita Sharirsthana,chapter9page.96 part-1,by Dr. Ambika datt shastri, edition 2011,chaukhamba publications New Delhi.
5. Susruta Samhita Sutrasthana, chapter14,page no. 61, part-1, by Dr. Ambika datt shastri, edition 2011,chaukhamba publications New Delhi
- 6.Susruta Samhita Sharirsthana, chapter 9, pageno.94,part-1,by Dr.Ambika datt shastri, edition 2011,chaukhamba publications New Delhi.
7. Susruta Samhita Sutrasthana, chapter14 page no. 67, by Dr. Ambika datt shastri, edition 2011, Chaukhamba publications New delhi
8. Dalhana commentary on Susruta Samhita Sutrasthana chapter 14. by Vaidya jadavji trikamjiacharya, Edition 2013,c haukhamba publications New Delhi
9. Commentary on Susruta samhita Sharirsthana by Dr. Bhaskar Govind Ghanekar, edition 2002,ML publications, New Delhi.
10. Human physiology vol.1 13th edition pg. 120-121 by Dr C. C. Chaterjee, CBS publishers and distributor.
- 11.Textbook of physiology 17th edition vol.1 page 117 by Dr.Ak Jain, avichal publishing company
- 12.charaka Samhita sutrasthanachapter 17,page.347,vol.1 by Pt.Kashinath shastri and Dr.Gorakhnath Chaturvedi ,Chaukhamba Bharti Academy.