

Classical review regarding role of vyana vata in rasa-rakta samvahana (circulation of blood)

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ABSTRACT:

Rasa (nutrient food or plasma) and Rakta (blood tissue) provides Prinana (nourishment) and Jivana (life providing by oxygenation) as well it remains continuously circulated throughout the body. Vata protects body giving upon it Utsaha (enthusiasm), expiration and inspiration, all physical, mental and vocal activities, initiation and execution of Vega pravartana (urges), normal movements and actions of Dhatus (various tissues) and proper functioning of sense organs. Vyana Vata is located in the heart, moves all over the body at an enormous speed with performing all activities related with the body. It has been described as highly powerful and highly speedy in the movement and is responsible for the circulation of blood and other liquids of body. Gaydasa has explained 'Rasa samvahana' (circulation of Rasa Dhatu) and Bhavamishra has added word 'adi' (etc.) which means circulation of blood etc. Sushruta has elaborated five types of actions of Vata from which Purana (filling) should be taken as swallowing of the food material and filling of stomach, etc. as well the filling of vessels like arteries etc. maintain their normal pressure. The contraction and relaxation of muscular tissues as well the vasomotor nervous system and the conduction system of heart can be considered as apparatus of Vyana. There are enough findings to establish the role of Vyana in Rasa-Rakta Samvahana (blood circulation), but we are not able to study at stretch due to their scattered appearance. This article is an effort to collect and re arrange for its proper understanding.

1. INTRODUCTION:

Rasa (nutrient food or plasma) and Rakta (blood tissue) offers Prinana (nourishment) and Jivana (life providing by oxygenation) to the body and stay on constantly circulated throughout the body. The chief tool for this action is heart, which is placed in the thorax mainly covered with the apparatus of respiration i.e. lung. Vata is the moving and controlling reason behind the entire process, which plays the most

significant role in circulation of blood and factors. Remaining two Doshas, i. e. Pitta and Kapha, consideration to be lame and cannot be in motion without any external power, and moved and circulated with the power of Vata.¹ Vata in its normal status, protects the body bestowing upon it Utsaha (enthusiasm), expiration and inspiration all physical, psychological and verbal activities, commencement and execution of Vega pravartana (urges),

regular movements and actions of Dhatus (various tissues) and appropriate functioning of sense organs. By reviewing authentic references of Ayurvedic research articles, we found only two articles that have made efforts to focus on some aspects of blood circulation. Hence there is a need to understand the role of Vyana in Rasa-Rakta Samvahana (blood circulation), but we are not able to study at stretch due to their scattered appearance.

2. VYANA VATA:

Vata has been divided into five types, viz. Prana, Udana, Vyana, Samana and Apana. Vyana vata is located in the heart, moves all over the body at a huge speed attends to functions such as walking, bringing the body parts downwards, lifting the body parts upwards, opening and closing the eyes etc. generally all actions concerned with the body.² Vyana vata has been described as 'maha javah' or highly powerful and highly speedy in the movement and its site is at the heart.³ Its nomenclature Vyana is considered and can be described as 'nadimukheshu vitananta Vyanah' and indicates that this kind of vata is accountable for the circulation of blood and other liquids of the body. Gayadasa, the commentator of Sushruta samhita, has quoted that 'rasa samvahana' means circulation of only Rasa Dhatu⁴ but Bhavamishra has explained about the word 'adi' (etc.) as circulation of blood etc.⁵

2.1 Locations of Vyana Vata:

Classics has mentioned its location at Hridi awasthitah (located in cardiac region)⁶, Kritsna deha charah (moving in whole body)⁷, Sarva sharirgah (moving in the entire body), Kati (lumbar region), Padau (legs), Sakthi (thigh), Asthi (bone), Majja (bone marrow) and Srotram (ears).⁸

2.2 Actions of Vyana Vata:

Gatirgati (speedy movements)⁹, Prasarana (extension), Akunchana apakepana (contraction, downward movement), Nimesha – unmesha (movements of

eyelids), Jrambhana (yawning), Annaswadana (receptor of taste), Srotovishodhana (purification of channels), Swedasruk sravanadi kriyah (oozing of sweat, blood, etc.), Yonaushukra prutipadana (to establish semen in vagina), Annasya kitta sara vibhajana (division of food material into essence and exerts), Dhatu tarpana (nourishment of various tissues), Rasa samvahana (circulation of nutrient fluid) and Sarva sharira cheshta (circulating in the entire body) are actions of Vyana Vata illustrated by Ayurvedic classics. The body tissue remaining in the form of liquid (plasma, lymph, etc.) are equally circulated and divided in the whole body through Vyana Vata. Contraction and relaxation of the muscular tissues are also performed by Vyana Vata.¹⁰

Vata Dosha is described as the promoter and the controller of all physiological and pathological actions in its normal and aggravated conditions. Sushruta has explained five categories of this actions¹¹ viz., Praspandana, Udvahana, Purana, Viveka and Dharana. Atrideva Vidyalkar has explained that Purana (filling) should be taken for swallowing of the food material and filling of the stomach, etc.¹², while Pathak R.R. has interpreted Purana as the filling of vessels like arteries etc. maintain their standard pressure.¹³

2.3 Vyana Vata – Vikshepa action:

Rasa Dhatu in the body is circulated in the body by the Vikshepa (throwing away) action in the following method –

- Yugapata (simultaneously)
- Sarvatah (from all sides, everywhere, entirely)
- Ajasram (forever, constantly perpetually)
- Sada (always, continually, for the whole life)

When and where in the body the stream of the Rasa Dhatu is blocked, diseases can occur.¹⁴ The Vyana Vata maintains the Rasa (and Rakta) in circulation in the total

body. Rao M.R.S. has quoted that the vasomotor nervous system and the conduction system of heart can be believed as apparatus of Vyana Vata.¹⁵

2.4 Vyana Vata Prakopa:

Vyana Vata is responsible for the circulation and identical distribution of liquid tissues particularly and namely – Rasa and Rakta in the body. Any Prakopa (aggravation) or obstruction of this system leads to ailments as affecting the whole body.¹⁶ The Avarana (veiling) of Vyana Vata by Pitta Dosha manifests Daha (burning sensation), Gatra Vikshepana and Klama (fatigue).¹⁷ Problems of Shukra (semen) and a variety of types of Pramehas (metabolic and urinary diseases) arise due to aggravation of Vyana and Apana type of Vata.¹⁸ Heaviness of body organs can take place if Vata is Avrita (surrounded) by Kapha Dosha.¹⁹ This aggravation or veiling of Vyana Vata manifests in various diseases involving the whole body.

3. Importance of Hridaya (heart):

Hridaya (heart) is important organ of the body, both anatomically & physiologically. Anatomically it pumps the blood to whole body, having nutrient value and is the base and symbol of living individuality. Charaka has mentioned ten vessels of great biological importance attached to the heart. The words Mahat and Artha have been used as synonyms by Charaka indicate its importance. It is the centre of different somatic, psychic and spiritual entities. It provides life by supplying Jiva Tatva (blood) to whole body. Consciousness Atman itself is a very important entity located in the heart.²⁰ Hridaya has been described as one of the Marmas located in thorax²¹ as well as Siramarma²² and Sadya- pranahara Marma.²³ As the central girder supports the wood and bamboo frame work of the roof, so the heart represents the substratum of all the entities and qualities of individual. Even a small injury to the heart results in the fainting and any serious injury to it lead to

death.²⁴ It can be said that only so long as the heart is in its normal condition, the sense organs, happiness etc. remain in good condition. A preliminary understanding of the cardiovascular system as a 'closed circuit' and the heart acting as a pump have been reviewed.²⁵

4. Circulation of Rasa and Rakta Dhatu:

Rasa is the primary Dhatu (tissues) in liquid form²⁶ which is manifested after the digestion of the food. Circulated and thrown all over the body, blood tissue and all other tissues.^{27 & 28} Rasa Dhatu can be understood as the lymph tissue and plasma in the body as per physiology. The circulation of Rasa Dhatu contains few peculiarities as discussed by Charaka.²⁹

- The liquefied material is thrown all over the body by Vyana Vata
- The activity takes place simultaneously (Yugpat)
- Rasa is circulated all over the body (Sarvatah)
- It is a constant and perpetual activity without any obstruction (Ajasram or avishrantam)
- It is a continuous whole life process (Sada)
- It is a cyclic process (Chakravat)³⁰

The main function of the cardiovascular system is to provide proper supply of the materials required for maintenance, development and proper functioning of all the cells (tissues) of the body and to carry away the waste material (like CO₂ etc.) from the body. This action is performed with the supply of oxygenated blood with the help of pumping system of heart with its complete network of arteries, veins and capillaries.^{31 & 32} The amount of the blood in the body is limited. Charaka has quoted eight Anjalis of blood quantity.³³ The unlimited functions are obtained by the recycling (the hollow formed by joining both the hands) of the blood in the body.³⁴ The cardiovascular system keeps the blood in circulation. Lungs, liver, spleen, etc. help in storage, formation and circulation

of blood.³⁵ Out of seven Dahtus, Rasa (nutrient food or plasma) and Rakta (blood tissue) are being kept run and circulated in the whole body continuously, for the whole life with the help of Vyana Vata.

5. CONCLUSION:

Rasa (nutrient food or plasma) and Rakta (blood tissue) provides Prinana (nourishment) and Jivana (life providing by oxygenation) as well it remains continuously circulated throughout the body. Vyana Vata is described as highly

powerful and highly speedy in the movement and is responsible for the circulation of blood and other liquids of body. It is liable for the contraction and relaxation of muscular tissues and maintenance of blood pressure. Vasomotor nervous system and the conduction system of heart can be believed as apparatus of Vyana. Thus, scholars of Ayurveda have well explained the central role of Vyana Vata in 'Rasa – Rakta Samvahana' (circulation of blood).

6. REFERENCES:

1. Tripathi bramhanand, Sharangadhara samhita with 'dipika' hindi commentary, Varanasi; chaukhamba Surbharati prakashan, reprint, 2001, purvakhand, chapter 5, sutra 43-44, p. 60
2. Tripathi bramhanand (editor), Ashtang hridayam with nirmala hindi commentary, Delhi; chaukhamba sanskrit pratishthan, reprint, 1995, sutrasthana, chapter 12, sutra 06-07, p. 171
3. Tripathi bramhanand (editor), Ashtang hridayam with nirmala hindi commentary, Delhi; chaukhamba sanskrit pratishthan, reprint, 1995, sutrasthana, chapter 12, sutra 06, p. 171
4. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhamba orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 17-18, p. 260-261
5. Mishra bramhashankar (editor), Bhavaprakasha, vol i, New Delhi; chaukhamba sanskrit sansthan, 10th edition, 2002, chapter 3, sutra 109, p. 36
6. Gupta atrideva, Ashtanga samgraha with hindi commentary – vol i, Varanasi; Krishnadas academy, reprint, 1993, sutrasthana, chapter 20, sutra 4, p. 160
7. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhamba orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 20, p. 261
8. Tripathi Bramhanand (editor), Ashtang Hridayam with nirmala hindi commentary, Delhi; chaukhamba sanskrit pratishthan, reprint, 1995, sutrasthana, chapter 12, sutra 06-07, p. 171
9. Shastri rajeshvaradatta, et al. (editor), Charaka samhita, part ii, Varanasi; chaukhamba bharati academy, 17th edition, 1991, chikitsasthana, chapter 28, sutra 9, p. 777-778
10. Dhyani shivcharan, sharira kriya Vidnyaniya – part 2, Varanasi; chaukhamba orientalia, 1st edition, 1991, chapter, p. 8
11. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhamba orientalia, reprinted 4th edition, 1980, sutrasthana, chapter 15, sutra 4, p. 67
12. Atrideva vidyalankar, Sushruta samhita with hindi commentary, vol i, Varanasi' chaukhamba sanskrit sansthan, reprint, 2010, sutrasthana, chapter 15, sutra 4, p. 74

13. Pathak ramaraksha, tridosha tatva vimarsha, Nagpur; shri baidyanath ayurved bhavan ltd., 5th edition, 1994, chapter 1, p. 10
14. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part ii, Varanasi; chaukhambha bharati academy, 17th edition, 1991, chikitsasthana, chapter 15, sutra 37, p. 458-459
15. Rao M. Rama Sundara, sharira kriya vidnyanam, Vijayawada; Rao M. Rama Sundara, 9th edition, 2008, p. 93
16. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 18, p. 260-261
17. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 38, p. 263
18. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 20, p. 261
19. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, nidanasthana, chapter 1, sutra 39, p. 263
20. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part i, Varanasi; chaukhambha bharati academy, reprint, 1998, sutrasthana, chapter 30, sutra 3-4, p. 581-582
21. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sharirasthana, chapter 6, sutra 5, p. 370
22. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sharirasthana, chapter 6, sutra 7, p. 370
23. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sharirasthana, chapter 6, sutra 9 & 26, p. 370 -371, 373-374
24. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part i, Varanasi; chaukhambha bharati academy, reprint, 1998, sutrasthana, chapter 30, sutra 5-6, p. 582-583
25. Patwardhan K., the history of the discovery of blood circulation: unrecognized contributions of ayurveda masters, Adv Physiol Educ. 2012 Jun; 36(2):77-82. doi: 10.1152/advan.00123.2011, PMID: 22665419
26. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sutrasthana, chapter 14, sutra 13, p. 62
27. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sutrasthana, chapter 46, sutra 528, p. 253
28. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sutrasthana, chapter 15, sutra 5, p. 67
29. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part ii, Varanasi; chaukhambha bharati academy, 17th edition, 1991, chikitsasthana, chapter 15, sutra 36, p. 458-459

30. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part ii, Varanasi; chaukhambha bharti academy, 17th edition, 1991, chikitsasthana, chapter 15, sutra 21, p. 457
31. Jadavaji trikamji acharya (editor), Sushruta samhita, Varanasi; chaukhambha orientalia, reprinted 4th edition, 1980, sharirasthana, chapter 7, sutra 12, p. 377
32. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part i, Varanasi; chaukhambha bharti academy, reprint, 1998, sutrasthana, chapter 30, sutra 3, p. 581
33. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part i, Varanasi; chaukhambha bharti academy, reprint, 1998, sharirasthana, chapter 7, sutra 15, p. 615-616
34. Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part ii, Varanasi; chaukhambha bharti academy, 17th edition, 1991, chikitsasthana, chapter 15, sutra 2, p. 452-453
- Shastri rajeshvaradatta, et al. (editor), Charaka samhita – part i, Varanasi; chaukhambha bharti academy, reprint, 1998, vimanasthana, chapter 5, sutra 8, p. 711