

An Ancient Overview of *Dhatus* with Special Emphasis on *Rakta*

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ABSTRACT

One of the oldest traditional medical systems that is widely accepted today is Ayurveda. Ancient knowledge underlying this medical system is still not fully comprehended. The main obstacle to the convergence between the theoretical doctrines of this and other contemporary systems is a lack of knowledge of the distinctions and parallels among them. The fundamentals of this systems are the dosha dhatu mala, the understanding of which is crucial for the ultimate goal of this science of preventing as well as treating ailments. Dhatus are the building blocks of the body corresponding to the tissues. They form the basic framework of the body and support its regular functioning. Rakta which is correlated with blood is one amongst the seven dhatus. It is also considered as prana because its presence is vital for maintenance of a healthy living status. It is formed by the Ranjana-karma of rasa dhatu in presence of ranjaka pitta or raktagni in yakrita, pleeha and amashaya and helps in formation of the succeeding dhatus. It is also mentioned under the dash pranayatanas or the dwellings of prana that are the places where prana or vital force resides. Any injury or loss in these pranayatanas can pose as a threat to the continuity of life or cause a temporary or permanent disability. This overview tries to highlight the long history and fundamental ideas of dhatus with special emphasis given to the rakta dhatu. This would aid emerging academics, researchers, and practitioners in developing a deeper understanding of the subject.

KEYWORDS- Ayurveda, Dosha-Dhatu-Mala, Dhatu, Rakta Dhatu, Ranjaka Pitta, Raktagni

INTRODUCTION

Ayurveda is a traditional Indian medical practice that places a strong emphasis on preventing disease rather than just treating its signs or symptoms. The treatment of an individual as a whole is central to Ayurveda.^[1] The true worth of Ayurveda is found in its fundamental concepts, such as its distinctive ideas of Panchamahabhuta, Prakriti, Agni, Dosha, Dhatu, Mala, and Srotasa, as well as its individualized approach to Nidana, Rupa, and Chikitsa. Numerous concepts from the ancient Ayurvedic writings are still relevant today.

Ayurveda today has undergone numerous changes to meet the needs of the time, yet key concepts have not changed.^[2]

Dosha-dhatu-mala is a theorized autonomous basis of the Ayurvedic medical system. The dosha-dhatu-mala forms the body's foundation. Thus, it is one of the Basic Principles of Ayurveda. It is the reason that the often referred to "Ancient Science of Life" or Ayurveda has continued unhindered from its fundamental trisutra form to the proactive current science that is characterized by the introduction and pursuit of research activity.^[3] The dosha-dhatu-mala

are present throughout the body. These three fundamental components are addressed by all eight of ayurveda's specialties.^[4] When these three are in balance, it is called Sukha, which means health, and when they are out of balance, it is called Dukha, which means disease.^[5]

The knowledge of anatomy, physiology, pathology, and treatment in Ayurveda is based on the dosha-dhatu-mala.

MATERIAL AND METHODS

The data was derived from various Ayurvedic classical texts, relevant modern medical science books, Ayurvedic and allied pharmaco-clinical dissertation works, websites and research & review articles published so far using PubMed, Medline, Google Scholar and manual search.

REVIEW AND DISCUSSION FUNDAMENTAL PRINCIPLES OF AYURVEDA

The autonomous cause of disease and the creator of the natural body constitution, is highlighted by the word "dosha".^[6] It is important to remember that the doshas are expressed by their acts, which can be inferred, rather than being immediately observed.^[7] The dhatu substratum of the doshas exhibits the vitiation of the dosha. Dosha thus has a dwelling in the dhatu or tissue. Therefore, dhatu has supremacy over the gross body structure and its existence. The mala stand for the substances that are waste products of metabolism and ought to be eliminated. Diseases are caused by the buildup of mala. Consequently, it is evident that the supreme entities that have the capability to vitiate the gross dhatu and the mala are the doshas. Disease is defined as a dosha-dhatu-mala imbalance. The restoration of the dhatusamyam^[8], a distinctive holistic view of health, is the goal of the Ayurvedic treatment.

DHATU

Understanding of Physiology in Ayurveda should start with the understanding of innumerable minute individual living units

now known as cells. A group of such functionally and structurally similar units is called a Dhatu.^[9]

The dosha's foundation is established by the dhatu. The tissue that makes up the body's basic framework and sustains the body through nutrients corresponds to the dhatus.^[10] Seven such Dhatus have been enumerated in Ayurveda, which have distinct roles that Acharya Vagbhata summarizes as follows, the rasa gives sustenance, the rakta sustains life, the mamsa covers the skeletal portions, the meda oleates, the asthi provides a framework, the majja fills the cavities in the bones, and the shukra is in charge of reproduction. When impaired, these functions signify the vitiation of the tissues known in Ayurveda as the dhatu pradoshaja vikara.^[11,12]

As per Acharya Sharangdhara, "Dhatava Deha Dharanat" is stated as the basic function of "Dhatu." The literary definition of the word "Dharana" is "holding, bearing, keeping, retention, preserving, protecting, maintaining, possessing, etc." Thus, we can conclude that what supports or upholds our body's regular functioning should be referred to as dhatu.

According to this viewpoint, doshas, dhatus, and malas should all be referred to as dhatu because they all have a role in maintaining the normalcy of our bodies.

By stating that "Deha Etaistu Dharyate," or "the body is never without kapha, pitta, maruta (vayu), and even shonita (blood), the body is always supported by these," Acharya Sushruta accepted all three doshas, i.e., vata, pitta, and kapha, as dhatu.

In the Charaka Samhita, dhatus are divided into two categories: prasada dhatu, which should be understood as the body's essential structural elements like rasa, rakta, and mamsa, and mala dhatu, which should be understood as waste products like sweda, mutra, and purisha.

We can infer from the aforementioned explanations that the term "Dhatu" collectively refers to the three vital elements, namely dosha, dhatu, and mala, which are in charge of preserving the body. Any disease's

origin begins with the consumption of nidana (causative elements), which causes a number of changes in the states of dosha, dhatu, and mala before ailments exhibit.

SAPTA DHATU

1) Rasa-Plasma

Rasa, in the Ayurvedic medical system, stands in as the first dhatu. The main and most significant component of a human body is rasa. Rasa is the representation for the bodily fluids (including extracellular and intracellular components), and it is primarily concerned with nourishing and sustaining the blood. When the food has ended up being digested, it transforms into a liquid (chyle), which is then processed into blood tissue.

2) Rakta-Blood

The term "rakta dhatu" (blood tissue) refers to the refined form of rasa or plasma. Rakta dhatu is primarily concerned with providing the body with sustenance by transporting macro- and micronutrients to the body's cells and tissues via the circulatory system or blood vessels. The life-preserver rakta dhatu is crucial to gaseous exchange.

3) Mamsa-Muscles

Mamsa is a representation of the muscle that permeates the internal organ that constitutes the human body. Rakta Dhatu gives rise to Mamsa Dhatu, which is the covering for the human body's skeletal and structural framework.

4) Meda-Fat

Adipose tissue, also known as fatty tissue, is represented by meda tissue. The mamsa dhatu becomes the meda dhatu after being refined. The body parts' lubrication relies greatly on medadhatu. It is a crucial component of the spinal cord, brain, and neurological system. Most importantly, Meda dhatu aids in maintaining body temperature on the interior.

5) Asthi-Bone

The term "asthi-dhatu" refers to the meda dhatu after it has undergone refinement.

The Asthi dhatu focuses primarily on the structural framework of the human body. All of the human body's cartilaginous elements are incorporated in asthi dhatu.

6) Majja-Bone marrow

Asthi dhatu develops majja-dhatu when it has undergone refinement. Myeloid tissue is referred to as as Majja dhatu. Either yellow or red colors are taken up by myeloid tissue. Myeloid tissue is confined to the bone cavity, which is also present in the brain and spinal cord.

7) Shukra-Reproductive tissue

Skukra-dhatu is primarily in charge of the body's ability to reproduce. In actuality, skukra-dhatu is the most sophisticated form of all the dhatus before it. It is referred to as sukra (including the sperm) in males and as shonita (includes the ovum) in females.

RAKTA

Rakta is a Sanskrit word that derives from the word "Raj Ranjane" and means "to stain".^[13] Given that it is one of the seven Dhatus (tissues), it is found throughout the entire body. However, it might be abundant in specific areas and might only be functioning in relation to a particular organ. These locations are referred to as the Sthana of the Raktadhatu. The primary location of the blood, or Raktadhatu, is Raktavaha Strotas. Liver and spleen are the mula of this srotasa.^[14] The Raktavahi Dhamini were introduced by Susruta. For a steady internal environment to be maintained, blood is an essential component. The continuation of life depends critically on it. A fourth entity called Rakta Dhatu (blood) also has a role in genesis and sustenance, just as Dosha (body humours) are responsible for the birth of a living body.^[15] Therefore, the Rakta Dhatu is referred to as the fourth Dosha (body humours) by Acharya Sushruta.^[16]

Nirukti

'Raja Ranjane' means to stain, since this Dhatu is red coloured, it is called as Rakta.^[16]

Synonyms

Rudhiram, Asriga, Shonitam, Asram, Lohitam.^[17,16]

Mahabhuta composition

Rasa, which is Soumya, gives rise to Artava and Sonita, both of whom are Agneya by nature.^[18] Certain scholars hold the view that Rakta is Anushnashita. Therefore, it can be said that Agni Mahabhuta and Jala Mahabhuta constitute Rakta. Some academics believe that Panmahabhutas constitute the blood.^[19]

The five attributes of the Rakta are a result of five Mahabhutas. The characteristics of Prithvi, including a marine odor, jala as fluidity, agni as a red colour, vayu as pulsation, and akash as lightness, are all observed in blood.^[20] Acharya Charaka's viewpoint Rakta is grouped under the Jala Mahabhuta Pradhana Dravyas when the body's tissues are categorized based on the mahabhutas.^[21] Rakta is regarded as having Agni and Soma Guna when addressing the treatment for Raktakshaya.^[22,16]

Associated dosha

According to the concept of ashraya ashrayi bhava, the rakta is the dwelling of the pitta dosha. Digestion and metabolism are significantly influenced by Pitta which is one of the three doshas. There are five distinct types of pitta dosha: pachaka, ranjaka, alochaka, bhrajaka, and sadhaka. Rakta dhatu receives its red hue from the ranjaka pitta. The locations of ranjaka pitta that are referenced in ancient literature are the yakrit (liver), pleeha (spleen), and amashaya (stomach). The creation of rakta dhatu is significantly influenced by raktagni and ranjaka pitta. According to Sushrut, the sarakta meda, which is responsible for the formation of rakta, is present in the alpasthi.^[23]

Sites and process of formation

According to Ayurveda, the essence of the food is transformed into Rasa Dhatu after digestion, and as this Rasa travels through

Yakrit and Pleeha it is coloured by the action of Raktagni and Rakta is formed.

According to Vagbhata and Sushruta, the Ranjaka Pitta is located in Amashaya, and in Yakrit and Pleeha, respectively. It is the main element in the creation of Rakta dhatu. The purpose of Ranjaka pitta, also known as Ranjaka agni, is to transmit Ragakrit, its distinctive hue, to the rasa. According to Vagbhata, the Yakrit and pleeha circulate with Ranjaka pitta and a collection of compounds that are Agneya in origin and are capable of adding color to the otherwise colorless rasa dhatu. Due to the color that pitta's heat imparts, that essence of Rasa is changed into Rakta. In the passageway between Yakrita and Pleeha, Rasa acquires its distinguishing pigment and acquires the appellation of blood.^[24]

Quantity of Rakta Dhatu

Physiological measure of the Raktadhatu is 8 Anjali.^[25]

Up to one prastha (13.1/2 pala) of blood can be extracted from the veins during the raktamokshana technique. There is a high probability of complications if there is excessive bleeding, so precautions must be taken to preserve the patient's life.

Shuddha Rakta lakshana

Physical characteristics such as radiant Indragopa, pure gold, padma and alaktaka, and brightly reddish resembling gunja phala are used to assess the purity of blood.^[26] Rakta should be considered as normal if it is the same color as Indragopaka, isn't excessively thick, and doesn't have any discoloration.^[27] Asamhatam, or neither a viscous nor a liquid state, characterizes Rakta Dhatu.^[28,16]

Rakta Dhatu Sara Purusha Lakshana

A Dhatu in our body that is in perfect condition is identified by that sarata. One is said to have Rakta Sarata if one possesses pure Rakta in excellence. Unctuousness, attractive, sparkling appearance of the ears, face, tongue, nose, lips, soles of the hands and feet, nails, forehead, and genital organs

are characteristics of those who possess the quality of Rakta. They are content, intelligent, mentally calm, and compassionate. They cannot withstand heat and are more sensitive to stress. Their body temperature remains in the relatively upper range. A Raktasara person has unctuous, crimson hands, feet, lips, tongue, palate, and nails. [29,16]

Physiological functions of Shuddha Rakta

Rakta is referred to as "prana" and is said to boost longevity, happiness, and strength. [30,31]

The Rakta endowed with its attributes improves skin clarity, nourishes muscle tissue, prolongs life, and improves the quality of the Ojas. Along with them, it withholds vitality through its Pranadharana activity. [32] Due to their pure blood, living beings possess strength, an attractive complexion, happiness, and long life. Blood is essential to the maintenance of Prana. [33]

Rakta is one amongst the ten dwellings of prana, known as the "Dash Pranayatana," viz., the "shankha dwaya," "marma traya," "kantha," "rakta," "shukra," "guda," and "oja." Additionally, it has been said that a physician who is acquainted with these pranayatanas can provide effective treatment of ailments. [34,30]

Rakta as the fourth Dosha

Rakta helps in the dharana of an individual similar to the function of the doshas. It is a crucial factor for maintenance of life and therefore, also termed as the "Prana" of a living being. It has sthana, guna, karma in a similar manner to the doshas and any alteration in its quality or quantity are manifested as kshaya vriddhi lakshana and lead to Rakta pradoshaja vikara. In the Kriyakala of Vyadhi, Acharya Sushruta has stated that Rakta is a factor in the movement of vitiated doshas throughout the body. Also, the doshas flow through the body in 15 forms including single doshas, rakta, combination of doshas with each other and with rakta. Therefore, it can be concluded that rakta is equally important as the doshas. While

discussing the diseases occurring due to a single dosha, 80 vataja, 40 pittaja, 20 kaphaja and 10 raktaja diseases have been mentioned, thereby establishing it as the fourth dosha and an etiological factor for manifestation of various diseases. [35]

CONCLUSION

Ayurveda is a traditional Indian medical practice that emphasizes preventing disease rather than treating symptoms. Its core concepts include Panchamahabhuta, Prakriti, Agni, Dosha, Dhātu, Mala, and Srotasa, as well as an individualized approach to Nidana, Rupa, and Chikitsa. The dosha-dhātu-mala, found all over the body, form the foundation of Ayurveda medical system. When these components are balanced, they signify health, while their imbalance signifies disease. Ayurveda's knowledge of anatomy, physiology, pathology, and treatment is based on this principle.

Ayurveda physiology begins with understanding individual living units, known as cells, and a group of functionally and structurally similar units called Dhātu. These Dhātus are responsible for maintaining the body's normal functioning and are divided into seven categories: rasa, rakta, mamsa, meda, asthi, majja, and shukra.

The term "Dhātu" collectively refers to the three vital elements, dosha, dhātu, and mala, which are responsible for preserving the body. Any disease's origin begins with the consumption of nidana, which causes changes in the states of dosha, dhātu, and mala before ailments appear.

The first dhātu in Ayurveda is rasa, which represents bodily fluids and is primarily concerned with nourishing and sustaining the blood. Rakta dhātu, the refined form of rasa, is crucial for providing sustenance by transporting macro- and micronutrients to the body's cells and tissues via the circulatory system. Mamsa dhātu, the covering for the skeletal and structural framework, is the most significant component of the human body. Meda dhātu, also known as adipose tissue, is essential for maintaining body temperature and lubrication. Asthi dhātu, the refined form

of meda, focuses on the structural framework of the human body. Majja dhatu, the bone marrow of myeloid tissue, is confined to the bone cavity and is responsible for reproduction. Shukra dhatu is the body's ability to reproduce.

Rakta is one of the seven Dhatus (tissues) found throughout the body. It plays a crucial role in maintaining a stable internal environment and the continuation of life. The Rakta Dhatu is considered the fourth Dosh (body humours) by Acharya Sushruta.

The five attributes of Rakta are a result of five Mahabhutas: Prithvi, jala, agni, vayu, and akash. According to Ayurveda, the essence of food is transformed into Rasa Dhatu after digestion, which is colored by the action of Raktagni and Rakta. The Ranjaka pitta, also known as Ranjaka agni, is located in Amashaya, Yakrit, and Pleeha, respectively.

The physiological measure of Rakta Dhatu is 8 Anjali, and up to one prastha (13.1/2 pala) of blood can be extracted from the veins during the raktamokshana technique. Shuddha Rakta lakshana is characterized by physical characteristics such as radiant Indragopa, pure gold, padma, alaktaka, and brightly reddish gunja phala.

Rakta Dhatu Sara Purusha Lakshana are characters of individual with proportionate rakta dhatu, characterized by unctuousness, attractive appearance, contentment, intelligence, mental calmness, and compassion. Rakta is said to boost longevity, happiness, and strength, improving skin clarity, nourishing muscle tissue, prolonging life, and improving Ojas quality.

Rakta is also stated as the fourth dosha. It is essential for maintaining Prana and is one of the ten dwellings of prana, known as the "Dash Pranayatana". Pranayatanas are the residing areas of prana and any injury to these areas can affect the functioning of the body leading to various health threats ranging from a short-term disability to fatality and death. A physician familiar with these pranayatanas can provide effective treatment for ailments. Therefore, understanding the aforementioned concept is

mandatory for the physician for understanding, diagnosing and managing the related conditions.

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REFERENCES

1. Yogini S. Jaiswal, Leonard L. Williams, A glimpse of Ayurveda – The forgotten history and principles of Indian traditional medicine, *Journal of Traditional and Complementary Medicine*, Volume 7, Issue 1, 2017, Pages 50-53, ISSN 2225-4110. <https://doi.org/10.1016/j.jtcme.2016.02.002>
2. Samal, J. (2013). The concept of public health in Ayurveda. *International Ayurvedic Medical Journal*, 1(2), 1-5.
3. Dadu V. Progressive march of Ayurveda from trisutra to the contemporary science of medicine. *WJPPS* 2015; 4(12):485-492.
4. Sharma H. *Ashtang Hridayam of Vagbhata*. Reprint edn, Chaukhamba Bharati Academy, Varanasi (India), 2008, 2.
5. Sharma PV. *Charak samhita*. Edn 1, Chaukhamba Orientalia, Varanasi (India), 1983, 54.
6. Shastri S. *Madhava Nidana with Madhukosh Vyakhya*. Edn 18, Chaukhamba Sanskrit Sansthanam, Varanasi (India), 1989, 64.
7. Murthy KRS. *Sushruta Samhita*. Edn 2, Chaukhamba Orientalia, Varanasi (India) 2004; 1:110.
8. Acharya YT. *Charak samhita with Ayurveda Deepika Commentary of Chakrapani*. Reprint edition, Rashtriya Sanskrit Sansthanam, Delhi (India), 2006, 14.
9. Patwardhan, K. (2008). Concepts of human physiology in ayurveda. *Sowarigpa and ayurveda*, published by central Institute of higher Tibetan studies, sarnath, Varanasi. *SamyakVak series-14*, 53-73.
10. Sharma PV. *Charaka Samhita*. Edn 1, Chaukhamba Orientalia, Varanasi (India), 1983, 223-224.
11. Sharma PV. *Sushruta Samhita with Nibandha Samgraha commentary of Dalhana*. Edn 8, Chaukhamba Orientalia, Varanasi (India), 2005, 634.

12. Dadu, V., & Rajani, A. V. (2016). A review on the Ayurveda fundamentals of Dosha-Dhatu-Mala in reference to Shalaky Tantra. *IJAR*, 2(4), 125-129.
13. Raja Radhakanthadeva Shabdakalpadruma. Vol-V. Published by Nag Sharan Singh. Delhi. Nag Publications: p.303
14. Agnivesh's CharakSamhita, Elaborated by Charak & Drdhabala based on Chakrapanidatta's Ayurved Dipika by Dr Karan Sharama & Vaidya Bhagwan Dash, volume II, Charaka VimanaSthana, chapter no 5 verse no 7, published by Chaukhambha Sanskrit series office Varanasi, sixth edition 2000.p.117.
15. Susruta Samhita of Maharasi Susruta by Dr Kaviraj Kunjalal Bhisagra, prologue & edited by Dr Laxmidhar Dwivedi Volume I, Susrut Sutra Sthana Chapter No 21 Verse no 2, Chaukhambha Sanskrit series office, Varanasi, second edition 2002,p.185.
16. Dr. Swapna Tadasad, Dr. B. H. Katti, Dr. M. R. Sajjanshetti, Dr. G. N Kannolli. Concept of Rakta Dhatu w.s.r. to Rakta Pradoshaja Vikara. *J Ayurveda Integr Med Sci* 2018; 5:187-197.
<http://dx.doi.org/10.21760/jaims.v3i5.13842>
17. Sir Monier-Monier-Williams. A Sanskrit English Dictionary. Motilal Banarasidas publishers Pvt.Limited Delhi. 2002. Pp1333. p 1004
18. Sushruta, Sushruta samhita with Nibandha Samgraha Commentary of Dalhana and Nyayachandrika of Gayadasa on Nidanasthana, Edited by Acharya Yadhavji Trikamaji, Varanasi: ChaukhambhaKrishnadas Academy, Ed. Reprint, 2004,pp 824, p62
19. Sushruta, Sushruta samhita with Nibandha Samgraha Commentary of Dalhana and Nyayachandrika of Gayadasa on Nidanasthana, Edited by Acharya Yadhavji Trikamaji, Varanasi: ChaukhambhaKrishnadas Academy, Ed. Reprint, 2004, pp 824, p60
20. Sushruta, Sushruta samhita with Nibandha Samgraha Commentary of Dalhana and Nyayachandrika of Gayadasa on Nidanasthana, Edited by Acharya Yadhavji Trikamaji, Varanasi: ChaukhambhaKrishnadas Academy, Ed. Reprint, 2004,pp 824, p60
21. Agnivesha. "Charaka Samhita" Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Acharya Yadhavji Trikamaji. Varanasi: Chaukhambha Sanskrit Sansthan, Ed. Reprint, 2006, pp 738, p515
22. Vriddha vagbhata, Ashtanga Samgraha with the Shashilekha commentary of Indu, edited by Dr.Shivprasad Sharma, Varanasi: Chowkhamba SanskritSeries Office, Ed. 3rd 2012, pp 965.
23. Roushan, R., & Moharana, P. (2019). RANJAK PITTA AND ITS AFFILIATES IN MODERN PERSPECTIVE: A REVIEW. *Journal of Advanced Scientific Research*, 10(03 Suppl 1), 124-130.
24. Sharma, V. (2021). A PHYSIOLOGICAL STUDY OF RANJAKA PITTA IN THE FORMATION OF RAKTA DHATU. DOI: 10.20959/wjpr20214-20227
25. Vagbhata. Ashtanga Hridaya, Utharasthana 35/7 with commentaries of Arunadutta and Hemadri, edited by Pt. Hari Sadasiva Sastri Paradakara: Chaukhambha Surbharati Prakashan, Ed. Reprint 2010, P:902, pp184
26. Agnivesha. "Charaka Samhita" Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Acharya Yadhavji Trikamaji. Varanasi: Chaukhambha Sanskrit Sansthan, Ed. Reprint, 2006, pp 738, p125
27. Sushruta, Sushruta samhita with Nibandha Samgraha Commentary of Dalhana and Nyayachandrika of Gayadasa on Nidanasthana, Edited by Acharya Yadhavji Trikamaji, Varanasi: ChaukhambhaKrishnadas Academy, Ed. Reprint, 2004, pp 824, p64
28. Sushruta, Sushruta samhita with Nibandha Samgraha Commentary of Dalhana and Nyayachandrika of Gayadasa on Nidanasthana, Edited by Acharya Yadhavji Trikamaji, Varanasi: ChaukhambhaKrishnadas Academy, Ed. Reprint, 2004, pp 824, p64
29. Agnivesha. "Charaka Samhita" Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Acharya Yadhavji Trikamaji. Varanasi: Chaukhambha Sanskrit Sansthan, Ed. Reprint, 2006, pp 738, p125
30. Naina Joshi, Srikanta Kumar Panda: Understanding Prana in Contemporary Times, *Int J Ayu Pharm Chem* July 2022 Volume 17, Issue 1 Page 1-7
31. Pt. Kashinath Pandey Shastri & Dr. Gorakhnath Chaturvedi (reprint year 2017),

- Charaka Samhita Vidyotini vyakhyan, Sutra Sthana chapter 24, Chaukhamba Bharti Academy
32. Agnivesha. "Charaka Samhita" Revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Acharya Yadhavji Trikamaji. Varanasi: Chaukhambha Sanskrit Sansthan, Ed. Reprint, 2006, pp 738, p124
33. Vagbhata. Ashtanga Hridaya, Utharasthana 35/7 with commentaries of Arunadutta and Hemadri, edited by Pt. Hari Sadasiva Sastri Paradakara: Chaukhambha Surbharati Prakashan, Ed. Reprint 2010, P:902, pp326
34. Pt. Kashinath Pandey Shastri & Dr. Gorakhnath Chaturvedi (reprint year 2017),
- Charaka Samhita Vidyotini vyakhyan, Sutra Sthana chapter 29, Chaukhamba Bharti Academy
35. Manjunatha B. Sunagar, Pratibha Kulkarni, & Shantha Basavaraj Sunagar. (2022). Critical analysis on concept of Rakta. Journal of Ayurveda and Integrated Medical Sciences, 6(6), 181 - 184.

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