



*Review Article*

**Literature Review on Rakta Dhatu**

Swati Chobhe<sup>1,\*</sup>, Shilpa Yadav<sup>2</sup>  
Professor & HOD<sup>1</sup>, PhD Scholar<sup>2</sup>  
Department of Kriya Sharir<sup>1,2</sup>

<sup>1,2</sup>P.D.E.A.'s College of Ayurved And Research Center, Nigdi Pradhikaran, Pune, Maharashtra, India- 411044

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\*Corresponding Author: Dr. Swati Chobhe, E-mail: [chobheswati@gmail.com](mailto:chobheswati@gmail.com)

**ABSTRACT:**

Dosha, Dhatu, and Mala are considered to be the fundamental building blocks of the body in Ayurveda. Out of these, Dhatu is primarily responsible for holding the various parts of the body together. Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra are the seven actual Dhatus. Our body's Rakta Dhatu, whose Moola Sthana are Yakrita and Pleeha, is a crucial part. According to Sushruta, the Rakta Dhatu is the foundation of the living body and sustains life. As a result, one should take good care of the Rakta Dhatu by eating a healthy diet and engaging in beneficial daily routines.

**KEY WORDS:** Rakta, Strotas, Raktavaha Strotasa

**INTRODUCTION:**

Ayurved studies the human body with respect to Dosha, Dhatu and Mala. Body consists of three Dosha, seven Dhatus and three Malas. Among the seven Dhatus, Rakta is of prime importance. There is seven Dhatu in all, according to Ayurveda, and they are Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra. These Dhatu are described based on its intended use.

These are crucial for maintaining a healthy physique. In a series of seven Dhatu, Rakta Dhatu is the second one. In terms of modern science, Rakta Dhatu is comparable to blood, yet Ayurvedic writings show that the idea of Rakta Dhatu is considerably more expansive than that of blood.

**MATERIALS AND METHODS:**

Ayurvedic classical texts have been consulted for references pertaining to the proposed title. Numerous books, articles from the internet, publications, research papers, and seminar proceedings are gathered on the subject.

**Nirukti (Etymology):**

Rakta Dhatu is very important Dhatu for sustainance of life. It is primal tissue of the body. If white cloth is stained with this Rakta, it becomes red coloured, the word indicates this.

**Synonyms:**

In the Amarkosha and various Ayurvedic texts so many synonyms of Rakta Dhatu has been described as follows-

Rakta, Rudhira, Asuram, Lohitam, Rudram, Adhigam, Tejobhavan, Killam, Kshatajam, Rasajam, Aggnaum, Manaskari, Ragakam, Rohitam, Twakjam, Rasobhavam, Rasaum, Rasateja, Visram, Loha, Swajam, Pramdam, Asruk, Asra, Vashishta.

**Rakta Dhatu Utpatti:**

There are so many factors responsible for the Rakta Dhatu formation like Aahara Rasa or Rasa Dhatu, Rakta Dhatu, Raktavaha Strotasa, Vyan Vayu, Agni and Yakrit, Pleeha.

All Acharyas accept that the Rakta Dhatu generates from the previous Rasa Dhatu. According to commentator Acharya Chakrapani, when Rasa takes its origin in Rasavahastrotasa, Rasadhatvagni acts on its nutrients coming from Ahararasa and Rasa Dhatu is produced in Rasavahastrotasa. Part of Rasadhatu reaches the next strotasa i.e., Raktavaha Strotasa. Here, by the action of Rakta Dhatvagni, the portion of Rasa which is similar to the Rakta is converted into Rakta Dhatu and Rakta Dhatu is formed in Raktavaha Strotasa.<sup>1</sup>

Acharaya Harita says that for the conversion of the Rasa Dhatu into the Rakta Dhatu, it takes seven days. During this time, it goes through different stages. The different stages were indicated by different colours, which were observed by Acharyas. These colors are 1) Sweta 2) Kapot 3) Haarit 4) Haridra 5) Padamkinshuka 6) Alaktaka 7) Rakta. We can compare these stages with the colour changes in the stages of Erythropoeisis.<sup>2</sup>

#### **Time of Rakta Dhatu Formation:**

There are different opinions regarding the time of Rakta Dhatu formation. The following are the theories found in different Ayurvedic Samhita.

##### **1) Theory of one day:**

Acharya Charaka has mentioned that Aahara Rasa takes six days to convert into Shukra. From this, it is inferred that Rakta being second Dhatu must be necessarily formed after one day interval.<sup>3</sup>

##### **2) Theory of five days:**

According to Acharya Sushruta, 3015 kala are necessary for Rasa to stay in every other Dhatu for its formation. If this time is calculated to Nimesa etc. The five days are counted hereby conclusion is made that Rakta is formed after the five days of Rasa formation.<sup>4</sup>

##### **3) Theory of Seven days:**

Acharya Harita appears to have different opinion that Rakta is formed after passing through different colors and this entire process take seven days in completion. Therefore, it is inferred that Rakta according to Harita Samhita is formed after seven days.

#### **Sites of Rakta Dhatu formation:<sup>5,6</sup>**

The principal sites of Rakta Dhatu formation are Yakrit and Pleeha. Besides this Raktavaha Dhamani, Sira, Raktavaha Strotasa, Raktadhara kala and Raktashaya are mentioned in Samhita Grantham as site of Rakta Dhatu formation. The formation of Rakta Dhatu occurs in Raktavaha Strotasa and is nourished by the Ahara Rasajanya, Rasa Dhatu and Rakta Prasadaunsha. The Yakrit, Pleeha and Aamashaya are the main site of Ranjaka Pitta which helps in conversion of Rasa Dhatu into the Rakta Dhatu in association with Ranjakagni. Acharya Sushruta mentioned Raktadhara Kala as a main site of Rakta formation which is situated in inner part of Mamsa.<sup>6</sup>

#### **Rakta Praman:**

In healthy individual the total amount of Rakta has been mention about eight Anjalis. Acharya Sushruta did not mention the Praman of any Dhatu.<sup>7</sup>

#### **Characteristics of rakta dhatu:<sup>9,10,11</sup>**

All ancient Acharyas have mentioned about the colour of Shuddha Rakta Dhatu. Acharaya Charak describes the different colours of Rakta compared to colour of red-hot gold, Indragop insects, Padma, Alaktaka, Gunjaphala and Laksharasa. According to Chakrapani the intensity of colour varies in each individual according to Dosha predominant in the formation of Prakriti.

According to Acharya Sushruta Rakta in its healthy and natural state is possessed of a vivid Red colour like that of an Indragopa. It may be slightly semisolid. If we wash the blood-stained loth, it does not give any stain to the cloth. It has Madhura Rasa, which helps in metabolism. It has also slightly Lanvana Rasa due to which it gets percolate in the other tissue as per requirements. The Rakta Dhatu is Samshitoshna means neither too hot nor too cold.

#### **Panchbhautika Swarupa of Rakta:**

Everything in the universe is made up of Panchmahabhoota. Rakta is also made up of the Panchmahabhoota but Teja and AapMahabhota predominant. Panchbhautikatva of the Rakta Dhatu is as follows:

- Prithvi Mahabhoota - Visrata.
- AapMahabhoota - Dravata.
- Teja Mahabhoota - Rag.
- Vayu Mahabhoota - Spandana.
- Akash Mahabhoota - Laghuta.

### Functions of Rakta Dhatu<sup>12,13,14</sup>

Rakta Dhatu is extremely important for sustenance of life. It is therefore needed to protect this Dhatu by every possible measure. As Vata-Pitta-Kapha are responsible for creation of living body, fourth entity named Rakta Dhatu also takes part in origin, sustaining it and are responsible for death. That is why Sushruta has mentioned Rakta as Fourth Dosha. He also says that Rakta is a Jivita that means to hold Prana or life. Rakta is always necessary for maintenance of life.

#### 1) Prana:

This means that every individual's Bala (strength), Varna (color), Sookha (sense of well-being), depends upon 'ShuddhaRakta'. Rakta maintains union of Panchmahabhoota, Indriyas and Aatma that is required for every living being. Therefore, life depends on Rakta only. Hence Rakta is called as Prana.

In Ayurveda, concept is that the Prana i.e., life of every individual depends upon Bahyaguna (external factors). These external factors are Agneya, Soumya, Vayu, Shabda, Sparsh, Roopa, Rasa, Gandha. Aabhyantara Prana of individual depends on these Bahya Prana.

Air we breathe through nose goes to trachea and lungs. However, the essential factor i.e., oxygen is carried from external air into the internal tissue of body by means of Rakta only in this way external Prana Dravya is carried by Rakta to the internal tissue. This is maintained upto the end of our life. If due to any reason oxygen supply to the vital organs like brain, heart or kidney is stopped, immediately the life comes in danger. Therefore, maintenance of Prana is main function of Rakta.

#### 2) Varna Prasadna (colour of body):

Rakta maintains color of the body. If there is any abnormality in Rakta, the skin color of person changes e.g., Pandu, Kamala. In

addition, Rakta maintains sensation of skin.

### 3) Mamsa Poshana (nutrition):

According to different Dhatu Poshana Nyana, Mamsa is developed from the Poshaka or Asthai part of Rakta Dhatu, which is carried to Mamsavaha Strotasa and acted by Mamsa Dhatvagni and converted to Mamsa Dhatu.

#### Raktavaha Strotasa:<sup>15</sup>

According to Acharya Charaka the mool of Raktavaha Strotasa is Yakrit and Pleeha, while two of Raktavaha Strotasa mentioned in the Sushruta Samhita, their Mool is Yakrit, Pleeha and Raktavahini Dhamanias.

#### Updhatu of Rakta Dhatu:<sup>16</sup>

Sira and Kandara are Updhatu of Rakta Dhatu.

#### Mala of Rakta Dhatu:<sup>17,18</sup>

Pitta is the Mala of Rakta Dhatu.

#### Rakta Sara Purush Lakshana:<sup>19,20</sup>

Individuals having the excellgance of Rakta are characterized by unctousness, reddish, beautiful, dazzling appearance of ears, eyes, face, tongue, nose, lips, sole of the hands and feet, nails, forehead and genital organ. Such individuals are endowed with happiness, great genius, enthusiasm, tenderness, moderate strength and inability to face difficulties. They cannot bear warm environment.

#### Rakta Kshaya<sup>21,22</sup>

Rakta Dhatu decreases as a result of malnutrition and poor diet. Rough skin, a need or desire for sour and chilly items, and leaky veins are all side effects of Shonita Kshaya (emptiness of blood vessels). Any time Rakta Dhatu is lost, all other Dhatu experience Kshaya (reduction) and Vata becomes vitiated.

#### Rakta Vriddhi<sup>23,24</sup>

The symptoms of increased Rakta Dhatu include reddening of the skin and eyes, engorgement of blood vessels, and overconsumption of greasy, pungent food due to the hot climate. Red eyes, skin, and urine with bleeding can occasionally occur as a result of an

increase in Rakta Dhatu Visarpa, Pleeha Vidradhi, Kushtha, Vatarakta, Raktapitta, Gulma, Upakusha, Kamla, Vyanga, Agninasha, and Sammoha.

## DISCUSSION:

Ayurveda states that anything consumed in the form of food is transformed into Sara, and this Sarabhaga is then digested and yields Rasa Dhatu. This Rasa Dhatu travels to Yakrit and Pleeha, where Ranjaka Pitta affects Rasa, causing it to turn crimson and eventually create Rakta Dhatu.

As one of the seven Dhatus, Rakta Dhatu is found throughout the entire body, although Yakrit, Pleeha, and Raktavahi Dhamani are its particular locations. Every Dhatu receives Prana from Rakta Dhatu. The air that the human body inhales at the act of inspiration becomes vital Prana. Each organ, tissue, and cell receives this Prana through Rakta Dhatu in order to carry out their particular physiological functions.

The foundation of every living thing that sustains life is known as Rakta Dhatu. Rakta keeps a person alive and nourishes the Mamsa Dhatu. It also makes the skin glow. Pure Rakta Dhatu manifests as a radiant complexion. All tissues receive nutrition through Rakta Dhatu's circulation.

A fourth entity known as Rakta is also responsible for the existence, sustenance, and maintenance of the body, according to Acharya Sushruta, who also claimed that Vata-Pitta-Kapha are responsible for the genesis of the living body.

On the basis of the PanchaMahabhuta (five elements), Acharya Sushruta described the composition of Rakta as consisting of Visrata (Prithvi Mahabhuta), Dravata (Jala Mahabhuta), Raga (Agni Mahabhuta), Spandan (Vayu Mahabhuta), and Laghuta (Akasha Mahabhuta). Similar to how it can be demonstrated that Prithvi Mahabhuta includes serum protein, haemoglobin, glucose, etc. based on current physiology. Vayu Mahabhuta comprises oxygen, carbon dioxide, vitamin C, and thyroxin. Jala Mahabhuta includes plasma, lipids, etc. Agni Mahabhuta includes potassium, magnesium, iodine, chloride, acid phosphate,

lipase, insulin, etc. According to Chakrapani and Dalhana, Agni and Jala Mahabhuta comprise the majority of Rakta Dhatu's constitution.

## CONCLUSION:

The following inferences can be made based on the conceptual analysis and discussion:

- By conveying nutrients that are analogues of Rakta Dhatu, Rasa aids in the development of Rakta. These analogous compounds take on a crimson colour when Pitta's Ushma is present.
- Rakta gives the Mamsa Dhatu nourishment, gleams the skin, and sustains life. Rakta Dhatu is responsible for the existence, support, and upkeep of the body as it circulates throughout the body and provides nourishment to all Dhatu.
- The body's tissue systems are made up of seven different types of fundamental tissues, or Sapta-Dhatu. Rakta is one of them. It is created when the Raktagni catalyses the transformation of Rasa Dhatu, its preceding Dhatu.
- The term "RaktaSthana" refers to the location where Rakta is either formed, stored, or both. Charaka and Sushruta have acknowledged Yakrit and Pleeha as the RaktaSthana. These authorities have also acknowledged Yakrit and Pleeha as the Moola of Raktavaha Srotas.

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