

## RAKTAJ VYADHI (BLOOD DISORDERS) AND ITS METHODS OF DIAGNOSIS – A REVIEW

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## ABSTRACT

*Ayurveda* is an ancient and comprehensive source of medical science's essential ideas. *Ayurveda* has influenced many more modern scientific principles. *Sushrut samhita* is one of the world's oldest treatises on surgery, while *Charak samhita* is a treatise on medicine. The formation of *Rakta dhatu* has been explained in *Ayurveda* many years ago. *Raktaj vyadhies*, like *Vata*, *Pitta*, and *Kapha vyadhies*, are more essential from a diagnostic and treatment perspective. In *Charak samhita sutra sthan* chapters 24 and 28, *Acharya Charak* mentions *Raktaj vyadhi*. *Acharya Sharangdhar* and *Kashyap* have also mentioned the *Raktaj nanatamaj vyadhis*. *Raktaj vyadi* treatment is very important but at the same time, we notice that *Raktaj vyadhi* does not have a separate *Chikitsa upkrama* like *Vata*, *Pitta*, or *Kapha* ones. That's why, *Raktaj vyadhi* and its *Ayurvedic* diagnosis must be emphasized. As a result, the focus of this paper is on *Raktaj vyadhi* and how to diagnose it.

**Keywords:** *RaktajVyadhi*, Blood disorders, Diagnosis

## 1. INTRODUCTION

The blood is considered to be the vehicle of *Ayu* or life in *Ayurveda*; hence its state has a direct impact on the four aspects of life: the soul (*Atma*), mind (*Ma-*

*na*), senses (*Indriya*) and body (*Sharira*).<sup>1</sup>Blood that is free of toxins and waste products helps to sustain life and maintain the physiological balance required

for good health. Many allergy illnesses, systemic ailments and skin diseases are caused by blood toxicity or imbalance. For better management of blood-borne disorders, it is necessary to remove the toxic blood from the body.<sup>2</sup>The body is made up of seven *dhatu* according to *Ayurveda*. *Rakta dhatu* is the second *dhatu* in the body and it gets formed after *rasa dhatu* in the *Dhatuposhan kram*.<sup>3</sup>Its vitiation and imbalance cause a variety of symptoms and disorders that impair the body's normal health. Red blood cells (RBCs) are red cells found in the blood, according to current medical science. RBC's functions and features are extremely similar to those of *Rakta dhatu*. The haematopoiesis organs *Yakrit* (liver) and *Pleeha* (spleen) are mentioned.<sup>4</sup>Almost all *Ayurvedic Acharyas* share the same opinion regarding the process of formation of *Rakta dhatu*. The essential substances responsible for the formation of *Rakta dhatu* are *Tejo dravyatmak ahar*, *Ranjak pitta*, and *Raktagni*. Modern research also acknowledges that the liver and spleen are hematopoietic organs in the foetus, but after birth, red bone marrow of long and flat bones takes over for hematopoiesis.<sup>5</sup>*Rakta dhatu* is also mentioned under the group of *Dasha pranayatana* (ten seats of life). *Rakta dhatu* should be regarded as pure when it has a colour like that of heated gold, red velvet mite, red lotus, *lac* and *gunja* (abrus seed).<sup>6</sup>The *Rakta dhatu* is also known as *rudhir*, *lohit*, *shonit*, *ashrik*, and *kshataj* in *Ayurveda*; all of which refer to the colour red. Eight *Anjali* is the total amount of *Rakta dhatu* in the body. *Rakta dhatu*, according to *Acharya Sushrut*, is a *Moola* of the body because it gives nutrients, allowing *Rakta dhatu* to keep the body in good shape. As a result, all efforts should be made to protect it. *Rakta dhatu* is life itself because the loss of (blood) *Rakta* almost always results in death.<sup>7</sup>The *Rakta dhatu* improves skin tone and colour of an individual. *Rakta dhatu* is completely reliant on the body's physiology because it strengthens and maintains its health. As a result, the *rakta dhatu* extends a person's life span and keeps persons active. *Acharya Charak* has mentioned 13 *Srotas* while *Acharya Sushrut* has mentioned 11 pairs of *Srotas*. They have described their specific *Moola sthan*

(roots).<sup>8</sup>A *Moolasthan* (root) of a *Srotas* is an organ whose appropriate functioning is very crucial and necessary for the healthy condition of that *Srotas*, and any abnormalities or sickness developing in that organ will induce symptoms of *Srotodushti* in that *srotas*.<sup>9</sup> As a result, any anomaly in these organs will disrupt the function of the *Raktavaha srotas*, and various symptoms will be caused because of *Raktavaha srotodushti* and many *Raktaj vyadhis* (blood related diseases) will arise. When diagnosing and predicting the prognosis of any *Raktaj vyadhi*, various RBC-related examinations might be highly useful. Therefore, the study of these two concepts is very essential.

## 2. Aim and Objective

- To evaluate, elaborate and discuss the *Raktaj vyadhi* with special reference to (blood disorders).
- To evaluate, elaborate and discuss the diagnosis methods of *Raktaj vyadhi* with special reference to (blood disorders).

## 3. Material and Method

Materials related to *Raktaj vyadhi* and blood disorders are collected from *Ayurvedic* texts *Brihatrye*, *Laghutrye* and textbooks of modern medicine respectively. The index, non-index medical journals have also been referred to collecting information on a relevant topic.

## 4. Literary Review

### 4.1 What is blood in Ayurveda?

Blood is a type of connective tissue that is in a fluid state. Since both *Rasa* and *Rakta dhatu*s are liquids and circulate in the intravascular compartment, they can be termed blood.<sup>10</sup> *Acharya Chakrapani* defined *rasa* as "*Rasateeti Raso Dravadhatuuchayate Taenrudhiraadinaamapi Dravaanam Grahanam Bhavati*," where the term *rasa* stands for intravascular circulating fluid (*Drava*), which includes plasma and blood cells while describing the circulation of *Rasa* by the action of *Vyana vayu* (a subtype of *Vata dosha*).<sup>11</sup> *Acharya Bhela* has also used word *Rasa* while describing the circulation of *Rasa* in heart and blood vessels.<sup>12</sup>The term *Rasa-rakta* has been utilised for the fully digested important and minute material once more (nutrients absorbed in the blood).<sup>13</sup>*Rakta*

can be interpreted as red blood cells (RBCs), as it is reported to be red like *Gunja (abrus precatorius)* and *Padma (nelumbo nucifera)*.<sup>14</sup>

**Table 1:** Raktaj vikar (blood disorders) in Ayurveda and modern point of view<sup>15</sup>

Sr.no	Ayurveda	Modern
1.	<i>Mukhpak</i>	Stomatitis
2.	<i>Akshirag</i>	Conjunctivitis
3.	<i>Putighran</i>	Rhinitis
4.	<i>Asyagandhita</i>	Foul odour from mouth
5.	<i>Gulma</i>	Abdominal tumour
6.	<i>Visarpa</i>	A skin disease characterized by the acute spread
7.	<i>Raktapitta</i>	A disease characterized by bleeding from different parts of the body
8.	<i>Pramila</i>	Drowsiness
9.	<i>Vidradhi</i>	Abscess
10.	<i>Raktmeha</i>	Haematuria
11.	<i>Pradar</i>	Menorrhagia
12.	<i>Vatashonit</i>	Gout
13.	<i>Vaivarnya</i>	Pallor
14.	<i>Agnisad</i>	Suppression of digestion capacity
15.	<i>Pipasa</i>	Thirst
16.	<i>Gurugatrata</i>	Heaviness of body
17.	<i>Santap</i>	Burning sensation
18.	<i>Ati dourabalya</i>	Asthenia (excessive weakness)
19.	<i>Aruchi</i>	Anorexia
20.	<i>Shirshool</i>	Headache
21.	<i>Vidah Annapan</i>	Internal burning sensation
22.	<i>Tikt amla udiran</i>	Bitter sour eructation
23.	<i>Sweda sharir dourgandhya</i>	Hyperhydrosis with foul body odour
24.	<i>Kampa</i>	Tremor
25.	<i>Swara kshya</i>	Aphonia
26.	<i>Ati tandra</i>	Drowsiness
27.	<i>Atinidra</i>	Hypersomnia
28.	<i>Ati tam darshan</i>	Attack of fainting
29.	<i>Kandu</i>	Pruritus
30.	<i>Kotha</i>	Eruption
31.	<i>Pidaka</i>	Pimples
32.	<i>Kustha</i>	Skin disorders
33.	<i>Charmadal</i>	Scaling of skin (Desquamation?)
34.	<i>Mad</i>	Intoxication
35.	<i>Klam</i>	Feeling fatigued without work
36.	<i>Krodh prachurta</i>	Extreme anger
37.	<i>Buddhi moh</i>	Hallucination

**The diagnostic methods through Ayurveda**  
**Ayurvedic Procedures for Identifying Impure**  
**(Vikrit) Blood:** Ayurveda proposed unique methods

for determining the impurity of blood from patients. Animals and birds such as dogs and crows should be fed blood from patients mixed with food. If it is not

consumed, it is assumed to be impure blood. Another procedure given by *Acharya Charka* is to *Soak* a white cloth fabric in the blood and then wash it with warm water to remove the pigment; if the cloth retains the colour, it is impure blood. If, on the other hand, the fabric turns clean and white, it is to be considered living blood.<sup>16</sup>

**Trivadha Parikshan:** *Ayurveda* has suggested *Trividha pariksha* having *Darsan*, *Sparsan* and *Prashn* which is unique and will play a major role in diagnosis of diseases.<sup>17</sup>

**Darshan (Inspection):** The *Darsan pariksha* is included in the inspection which is done by *Darshan indrya* (eyes) of a physician. It is nothing but visible signs of patients in *Raktaj vyadhi* which will be evaluated by inspection.

**Sparshan (Palpation):** It plays an important part in patient examinations that include palpitation. Interrogation regarding symptoms detected in patients in *Raktaj vikar* is known as *Prashn* (questioning). Questioning will be used to assess the symptoms of *Raktaj vikar*.

### The diagnostic methods through Modern Science<sup>18</sup> How blood is obtained

Blood is drawn from a vein using a needle to fill one or more sample tubes, or from the fingertip with a needle prick to acquire a little amount of blood. The vein to be used is usually one on the inside surface of the person's elbow, which is determined by a health care practitioner. A tourniquet is wrapped around the upper arm, causing the veins beneath it to fill with blood, allowing them to be seen or felt more easily. A needle is placed into the vein after the skin immediately surrounding it has been properly cleansed. The needle is normally inserted with a stinging feeling, but the operation is painless after that. Blood is drawn into a syringe or collection tube through the needle. After collecting enough blood, the tourniquet is removed, the needle is removed from the vein, and pressure is applied to the puncture site to prevent haemorrhage. If only a tiny amount of blood is required, the area is cleansed and a needle is used to prick the skin (typically a finger or the heel in infants).

### Laboratory Tests for Blood Disorders

- **Complete blood count (CBC)** - The complete blood count is the most common blood test. The CBC is a test that examines all of the blood's biological components (red blood cells, white blood cells and platelets). On a small amount of blood, automated devices do this test in less than a minute. In rare cases, the CBC is reinforced with a microscope study of blood cells (blood smear).
- **Red blood cell parameters evaluated by CBC include**
  - Number of red blood cells (RBC count)
  - The proportion of blood made up of red blood cells (hematocrit, Hct)
  - Amount of haemoglobin (the oxygen-carrying protein in red blood cells) in the blood (Hb)
  - The average size of red blood cells (mean cellular volume, MCV)
  - Variability of the size of red blood cells (red cell distribution width, RDW)
  - The concentration of haemoglobin in an individual red blood cell (mean cellular Hb concentration, MCHC)
- **White blood cell parameters evaluated by the CBC include the**

Total number of white blood cells(TLC)

Percentages and numbers of the different types of white blood cells (DLC)

White blood cells (WBC) are the most important part of the immune system. Neutrophils, lymphocytes, monocytes, eosinophils, and basophils are the five basic types of WBCs, and different types are recruited into service when the immune system responds to different stresses or illnesses.

- **Blood smear**

Although automated equipment can quickly count the number of different blood cells and provide information on red blood cell size and shape, as well as the types of white blood cells; viewing a blood sample under a microscope can reveal additional information. A drop of blood is smeared across a glass slide to create a thin layer that allows individual blood cells to be seen. After that, the slide is stained with coloured chemicals to expose certain blood cell

properties and inspected under a microscope. A skilled investigator can frequently gather more information on cell counts, size and shape, and specific cell features than a machine.

- **Reticulocyte count**

The amount of freshly generated (young) red blood cells (reticulocytes) in a given volume of blood is measured by the reticulocyte count. Reticulocytes make up around 0.5 to 2.5 per cent of all red blood cells in the body. When the body requires extra red blood cells, such as after a blood transfusion, the bone marrow produces more reticulocytes. Thus, the reticulocyte count is a measurement of the bone marrow's ability to produce new red blood cells.

- **Clotting tests**

The prothrombin time (PT) and partial thromboplastin time (PTT) are the two mostly used tests. Individual clotting factor levels can also be screened and determined.

## 5. DISCUSSION

The foundation of the body is stated to be *dosha* (biological functional entity), *dhatu* (tissue) and *mala* (waste products).<sup>19</sup> *Rasa* (plasma) and *rakta* (formed constituents of blood) are both liquids, since their measurements are stated in terms of *anjali pramana* (liquid measurement by uniting both hands), and they are both in continuous circulation. *Rasa* is the first *dhatu* created following complete digestion of food, and it is termed *rasa* because of its continual circulation. *Preenana* (nutrition) is the prime function of *rasa dhatu*. Since it is named as *pranayata* (seats of life); among the ten seats of *pran* (life), *rakta dhatu* has been considered the most important of the seven tissues.<sup>20</sup> *Rakta* plays an important role in the sustenance of life.<sup>21</sup> Acute blood loss of more than 10% can result in life-threatening diseases such as hypovolemic shock. Because blood provides nutrition to all tissues; if it is inadequate, it will lead to poor nutrition of other tissues, ischemia and hypoxia, which eventually leads to tissue death.<sup>22</sup> Hence nutritional status of all the tissues depends on the status of *Rakta dhatu*. Considering such a great physiological importance of *Rakta*, *Acharya Sushruta* designated it

as the fourth *Dosha*, apart from the three *Doshas Vata, Pitta* and, *Kapha*.<sup>23</sup> The scholars of ancient Greek medicine have also considered that the regulators of all physiological processes in the body are the four humours namely 1. blood 2. phlegm 3. Yellow bile and 4. black bile.<sup>24</sup> Unani medicine has also accepted blood (*Dam*) as humour.<sup>25</sup> As a result, various traditional medical fields have acknowledged the importance of blood in maintaining homeostasis of the body. Certain physiological, psychological, and physical aspects associated with these *Dhatu*s have been documented under the study of *Dhatu sarata* (excellence of tissues). In order to examine the functional adequacy of *Rakta dhatu* in an individual, the *Raktaj vyadhi* should be considered when treating any conditions, such as *Vata, Pitta* or *Kapha dosha*.

## 6. CONCLUSION

After this literary study, we found out some important facts about *Raktaj vyadhi*. *Rakta dusti* is also considered by many *Acharyas* to be one of the primary causes of *Pittaj* and *Raktaj vyadhi*. Three types of blood vessel illnesses are common and should be diagnosed as soon as possible. These diseases are known as *Raktaj vyadhi* in *Ayurveda*. When *shit, usna, snigdha* and *ruksha* treatments are ineffective, the ailment is classified as a *Raktaj vyadhi* one and treatment is provided accordingly and appropriately. This *Raktaj vyadhi* diagnosis is based on *Upshaya-anupshaya* (a sort of trial & error method), which takes time and causes greater suffering. In such conditions, diagnostic tool like *Trividh pariksha*, CBC, RBC etc. are very important and effective. *Trividha pariksha* is the unique method of diagnosis of any disease mentioned in *Ayurveda* which will be useful to diagnose the *Raktaj vyadhi* also somewhat.

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