CONCEPT OF RAKTHA DHATU IN AYURVEDA

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ABSTRACT

Raktadhatus (Blood) is one of the seven dhatus. Word Rakthais taken from Devanagari “Raj Ranjane” which determines red shading. The functions of Raktha dhatu are clarified in many different views as Kala, MatrujabhavTwacha, Avayava Utpatti in Garbhavastha, Formation of Srotas, its Panchabhautiktva, Upadhatu, Pramana, Gunas, Mala have been clarified. Acharya Sushruta says its extreme importance for the sustainability of life. Therefore, it is very important to do the protect the Raktadhatu. Acharya Sharangadhara states that Raktha dhatu is life of sharer. The shareerdoshasangraha, dehasambhavahetava, Trayodoshhasamasataha, that shows thatVata, Pitta and Kapha are 3 doshas and raktha cannot be called as Dosha. As we known, Rakthadhatu is different from the blood according to modern and carrier of Agni /pitta that invigorates the body and mind. All Dhatus get digested by the Tejas of Pitta dosha. As Yakrut is responsible for Raktha utpatti. The liver plays important role in metabolism. Acharyas have opined about the genesis of Yakrut (liver) from Rakta Dhatu (blood tissue). Parallel opinion in conventional anatomy states that abundant quantity of blood is responsible for the formation of sinusoids of liver. Ayurveda covers Rakthadhatu in much wider aspect. Ayurvedic texts reveal that Raktha dhatu has much broader concept than blood. Hence in this article concept of Raktha in Ayurveda are highlighted.

Keywords: Rakthadhatu, Blood, Raktha utpatti, Dhatu, Pitta
INTRODUCTION

Raktadhatu is an entity which is considered as one of the Saptadhatus, which is unanimously accepted by all Ayurveda Acharya’s. The word Rakta is derived from Sanskrit word RajaRanjane which indicates red colour. Synonyms of Raktadhatu are Rudhiram, Shonitam, Lohitam whereas rakthauotpattii is dealt as Aapya rasa (water like Rasa), the Aapya rasa (water like Rasa) after getting red colour by the Tejas (heat fire like agency) present in the body (in the liver and spleen) remaining unvitiated and clear comes to be called as Rakta. When the Aapya rasa passes through the Yakrut and Pleeha and by the action of the Ranjaka Pitta the Aapya gets converted into Raktadhatu. Essence of food known as Aahara rasa is formed by the action of Jatharagni (gastric juice-hydrochloric acid) in the Amasaya (stomach) and is partially digested product. It passes through the Grahani (duodenum) gets mixed with Acchapitta (bile and pancreatic juice) reaches the Pachyamanasaya (small intestine). There it undergoes further digestion by the action of Bhutagni (metabolic process). After these activities are completed the first tissue known as Rasa dhatu get formed. This is white thin liquid containing nutrient materials essential for the formation and growth of other Dhatus (tissues). This Rasadhatus travels all over the body constantly supplying nutritive materials (Dhatuposakamsa/Posakadhatu or Asthayidhatu) to other static tissue (Sthavy or Posyadhatus). The ancient view that Rasadhatus goes to the Yakrut and Pleeha obtains red colour there and become Raktadhatu can be explained to some extent. Some portion of chyme absorbed from the small intestine goes to liver and spleen and form there reaches the heart. A red pigment called haemoglobin is synthesized in these organs (especially the liver) and is instilled into each of the RBC(Red Blood Corpuscles) which are in great number and so make the entire fluid deep red in colour. In the living body Teja brings this red colour to Rasa dhatu and when produced in healthy manner and in physiological quantity; it is fresh and called Raktu. The Rasa dhatu though Aapya (liquid possessing and action of water) after reaching Yakrut and Pleeha attains red colour due to the action of Ranjaka pitta. Charaka said that when Teja portion of Aahararasa and Pitta (Ranjaka pitta) with Ushma acts upon Rasa it acquires redness. This is finally Rakta. As per modern science Blood is connective tissue in fluid form. It is considered as fluid of life because it carries oxygen from lungs to all parts of body and carbon dioxide from all parts of body to lungs. It is also called fluid of health because it protects body against diseases. According to Ram SundarRao, the essence of Aahararasa after being subjected to Paaka by Ranjaka Pitta attains red colour and become Raktadhatu. As per Sushruta vein providing Rakta to each smallest structure of the body is additionally a base of Raktavahasrotas. Yakrut and pleeha are locales of arrangements and vitiation of Raktadhatu.

Visratadravataraagahaspadnamalgutaatathaa|Bhoomyadeenamgunaayetedrushyantechaattrashonite || (Susruta) Panchabhoutikatva of rakhadhatu resembling blood, the following qualities of blood represents the presence of their respective Mahabhutas and thus establish the fact that blood is Panchabhoutika.


Properties of Rakta

Madhuramlavanamkinchitoshnamsamhatam|Padmendriyopahemaavishashaholitalohita|| (A.H.Su 27/1)7 Raktadhatu pure or whomslus state looks like heated gold which turns red after heating, like fire insect (Indragopa) red lotus or like Abrusprecatorius (gunja) these various shades depends upon individuals. Sushruta also described characteristics of pure Raktadhatu. Raktadhatu looks like insect (Indragopa) is of proper density and does not bear any other colour than meant of pure blood raktadhatu is neither very cool nor very warm. It is sweet, unctuous, and red in colour, heavy, smells typically. Reacts to items which affect the pitta. As per Bhanumati
commentary of Sushruta Rakta Dhatu is made up of Teja and Jalamahabhoott. In Hemadri, commentary on Astanga Hrudaya he described Aashryaashriyatva, in which he explained pitta has ashraya of Rakthadhatu. It means if Pitta dushti occurs, it affects the normal Rakthadhatu and vice versa. According to Ayurveda, the Rasa Dhatu, which comes to Yakrut and Pleeha, get colo red by Ranjakagni. But, this is too difficult to correlate with modern science. In the term of modern science, it can be matched with haematopoiesis. Haematopoiesis is carried out by Yakrut only in intrauterine life. However, after birth, this is carried out by red bone marrow. In some pathological conditions, the liver may help informing blood cells with red bone marrow. Actually, the function of Yakrut is metabolism of fats, proteins, etc., or storage of certain vitamins, nutrients or glycogen and not colouring the chyle. On the whole, the term of Ranjakagni related to the liver is too difficult to match with any of the components present in the liver.

**Rakta and Pitta correlation**

The Rakthadhatu being made up of primarily of Agni, has similar qualities. It is Ushna, Laghu, Rooksha, Khara, Asthayi. These qualities are very similar to Pitta dosha which is made up of Tejas and Apa. Sharangadhara(prathamkhandha)\(^9\) The status of Rakthadhatu plays an important role in determining the status of pitta dosha .In the formation of Dhatu, Pitta is the mala produced by the formation of Rakthadhatu. Raktha has special relation to the Yakrut. Yakrut is the site of region of Rakthahasrotas, which is the channel through which unstable form of poshya Rasa dhatu must pass prior to the formation of Raktha. When Rakthadhatu is overheated, so too is poshya Rasa dhatu. As a result the Yakrut and Pleeha become overheated and possibly gets enlarged. This is what occurs during Hepatitis. Some Acharyas have different opinion regarding upatti of Rasadidhatu. Some believe that in one day all the 7 dhatus are formed whereas some comment that they take 7 days and 8\(^{th}\) day Shukra is formed.

**Rakthahasrotomoolaa**

Elaborate description of Rakthahasrotas and Rakthapradosajavyadhis are found in both Laghutrayas and Brhatrayas.

**Brhatrayees**

Acharya Charaka describes Rakthahasrotas in Vimanasthana 5\(^{th}\) chapter and Shonitajaragras in Sutrasthana 24\(^{th}\) chpt and Rakthapradosajaanyavadyadhis in 28\(^{th}\) chapter\(^1\) Acharya Susruta describes Rakthahasrotas and its dusti in Shareersthana 9\(^{th}\) chapter.

Acharaya Vagbhata followed views of Charak, Susruta

Acharaya Sharangadhara was the first to mention Rakthajanamatamajavikaras. He has also mentioned kamala under Panduroganiidana chapter itself.

**Table 1: Aetiology of RakthahasSrotas**

<table>
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<tr>
<th>Sl No</th>
<th>Etiological Factors</th>
<th>References</th>
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<td></td>
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<tr>
<td>1.</td>
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<td>8.</td>
<td>Drava snigdhaguruni cha atyaadana</td>
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<td>12.</td>
<td>Atiamlasevana</td>
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Materials & Methods: All classics, articles, online materials are taken for the study.

DISCUSSION
Concept of Raktha Dhatu has got broad meaning compared to Blood in Modern. Raktha dhatu(blood) is an important entity in context to continue the Life. Because it performs important functions required for the body. As per Modern functions of Blood described as the Haemoglobin of RBC picks up oxygen in the Lungs and this Oxyhaemoglobin circulates & discharges oxygen into the Tissue, this is Respiratory Supply of Nutrients such as Glucose, Amino acids, & Fatty acids absorbed from the GIT tract & transported by the Blood to the liver, acts as Nutritive. Various waste products of the body are carried by the Blood & ultimately removed from the body via Kidney, this is excretory function. Blood also helps in transport of various drugs, hormones etc to various tissue. It also helps in maintaining the body temperature, in process of Coagulation and also in detecting the foreign material by Antibodies. In Ayurveda Raktha dhatu is extremely important for the sustenance of life. Therefore, it is needed to protect this Dhatu by every possible measure. Rakthadhatu is also responsible for Dehadharan. Susruta also mentioned that Raktha dhatu is responsible for the nourishment of all dhatus & plays vital role in the formation of organs. It considered as one of the Dashapranayatana, hence included in Dashapranayatana. In Susruta shareerasthan, it is explained that Raktha dhatu while circulating throughout the body gives Poshakansha to their respective dhatus &helps in maintaining of strength of respective dhatus (dhatuparinama). Raktha dhatu is also responsible for Varnaprasadana. It also performs the function of sensation. In embryonic life, Raktha dhatu plays an important role in formation of liver, spleen, lungs, colon, kidney & heart. A little wasting will not hamper function of Rakthadhatu immediately if Rakthadhatu is in excellence condition. Persons will have strength to fight the pathogenesis. Charak in Sutrasthan mentioned that Raktha is also responsible for formation of Oja & Ayurvruddhi. Kshaya and Vrudhi of dhatus are also dependent on Rakthadhatu. (Su.su14/21) (Shonitnimittaj). In Charak Sutrasthan
14th chapter it is explained that if there is loss of Rakthadhatu in turn leads to diminished strength of other Dhatus, Agni & Vatadosha gets aggravated. In Charak. Sutra 24th /11. It is explained, if diseases are not cured by Sheeta, Ushna, Snigdha, Raksha treatment then that diseases are called to be Raktaajyvadh. It indicates importance of Raktadhatu. Raktadhatu is one of seven Dushya in aetiology of Kustha and Visarpa. Charak Sutrasthana 24th /24 explained Vishudda Rakthapurusha Lakshanas as if persons organs are properly functioning, as such each of organs performing their respective functions as they mean. If digestion is proper and excretory functions are proper, it indicates proper functioning of Raktadhatu.

CONCLUSION

After viewing through the classics regarding Rakthadhatu, it maintains the life process. Modern sciences also described Blood as the fluid of life, as it carries Respiratory gases, nutrient materials required for the basic life process. Body cannot survive without Prana & Rakthadhathu. Rakthasthana means either the site where Raktha is formed or stored. & Pleeha have been recognised by Charak & Susruta as Rakthasthan & also moola of Rakthavahasrotas. Rakthadhatu circulates in the body & supply nutrients to all dhatus & responsible for existence, support & maintenance of the body. The functions described in Ayurvedic texts of Raktadhatu are much more than that described in modern science. Rakthadhatu gives us idea about vital fluid running through body, which connects Jatharagni to every other Dhatus of the body. These organs get nourishment through Rakthadhatu and are responsible for nourishment and maintenance of good health.

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