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Role Of *Rakta Dhatu* In Human Body

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ABSTRACT:

Rakta Dhatu is the second *dhatu* among the seven *dhatu*. Growth and nourishment of the body takes place by *dhatu*s. *Dhatu*s are functional apparatus of the *dosha*. *Dhatu* gives *ashraya*, which does *dharana* and *poshana*(support and nourishes the body). *Rakta dhatu* is produced from the *prasad bhaga* of *rasa dhatu* with the help of *Bhutagni and Rasa dhatwagni*. *Teja and jala mahabhuta* is predominant in *rakta dhatu*. *Sathans(seat) of rakta dhatu is raktavahasrotas*. *Sushruta* mentioned that *Rakta Dhatu* is base of living body; it maintains life, so one should take proper care of *Rakta Dhatu* by proper diet that gives nourishment to *Rakta*. *Acharya charak* has described 8 *anjali praman of rakta dhatu*. organ of this *srotas* are liver and spleen.

Key words: *Rakta dhatu ,raktavahasrotas, Rakta virdhilakshana*

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INTRODUCTION-

"*Sharir dushanad dosha dhatvo dehadharanat* " Vayu,pitta,kapha are considered as dosha, dhatu,and mala in different contexts. Because they vitiate the body, they supports the body and produce waste in the body respectively."*Raja¹ rajane ten ranjana ragvrnayukta ragkruta cha dhatu* "Root *Raja Rajene* means to stain since this dhatu is red colour. It is called as Rakta². *Raja Ranjene* Means to stain since this dhatu is red colored. It is called as "rakta" essence of *rakta dhatu is rakta. Rakta* dhatus are alternatives names such as *Rudhira,Asruk, Shonit, Kshataj, Lohit and asru³*. *Rakta* means the bright constituent of the body fluids. It is because action of *Ranjaka pitta on Rasa dhatu⁴*.

According to *sharanghara acharya* says that *Rasa dhatu* is transferred into heart with influence of *saman vayu* .Then is metabolized as *Ranjak pitta⁵*.

AIMS AND OBJECTIVES:

1. To study the mechanism of production of rakta dhatu.
2. To study the charecterstics and normal function of rakta dhatu in Ayurveda and modern aspects.

MATERIAL AND METHOD:

Literary review from all the science are taken.

RAKTA VAHA SROTAS -

The *moola sthanas of Rakta vaha srotas* are *yakrut (liver) and pleeha (spleen)* .The formation of *Rakta* in the body takes place

at bone marrow as per modern science but as per Ayurveda *rakta dhatu* is formed from *rasa dhatu* by *ranjaka pitta* in *yakruta*. The Function of these *moola sthana* have main role in maintain the quality of *rakta* rather than its quality. Spleen acts as graveyard of RBC i.e.it annihilates the fragile RBC which have crossed 120 days but this function will also carried out in other parts of the body like bone marrow etc., but it has one distinct function that it store the blood and drains it into systematic circulation in emergency conditions. The liver has multifarious functions which help in maintain the quality of the blood. liver produces the clotting factors, heparin, Vitamin-k etc. Which are essential in regulating the quality of blood⁶.

METABOLISM OF RAKTA DHATU

According to *acharya shushurta* says that *raktadhatu* is formed from the *ahara rasa*, which is colourless. When it reaches to *yakrit and pleeha* by the help of *ushna guna* converts this *rasa dhatu* into *rakta dhatu*. Normally Human body contains *vishuddha teja* and when this comes in contact with *rasa dhatu* it helps to transfer *rasadhatu* into *raktadhatu* in the body⁷. According to *acharya vagbhata* says that *ranjaka pitta* is situated in *amashaya*

While *sushurta* has mentioned the site of *ranjaka pitta* is *yakrit & pleeha*. Its main function is *rasa ranjana* i.e. giving coloration to the *rasadhatu*⁸.

RAKTA SWARUPA

According to *charak acharya* says that pure blood can be resembled with color of gold purified with fire, *indragopa*(firefly), *padma* (red lotus), *alaktaka*(lac), *gunja phala* (fruits of *gunja*), depending upon the individual constitution. A part from this its thickness is slightly more than that of liquid (*asamhata*), and single colored (*avivarnata*) are the characteristic feature of blood⁹.

According to *acharya vagbhata* pure *rakta dhatu* is slightly sweet and salty in taste. It is neither cold or warm, *asamhata* (not coagulated), little thicker than that of liquid. Its colour resembles with the colour of lotus, *indragopa* insects, gold, blood of sheep, and rabbit etc. are characteristic features of pure blood. It is the cause of origin of the body and by determining the condition (healthy or unhealthy) of the body¹⁰.

FUNCTIONS OF RAKTA DHATU BY AYURVEDA

The main function of rakta dhatu is described as "jivana" Which means the indication and sustenance of life force. The *prana vayu* which circulates along with blood inhabits life into all the living cells. The *prana vayu* from the external atmosphere is transformed into its bodily assumable form and then circulated with the blood in the entire body, and the *rakta dhatu* there by performs its function of jivana, It therefore occurs that, on stoppage of blood flow to any of the bodily organs or limbs, the particular parts dies and withers off. The health and care of complexion and pleasant expressions regards of physical health are also the function of the rakta dhatu¹¹. The *raktadhatu*, which is present all over the body and travels through their respective veins and arteries where it fills the dhatus, and gives nutrition to them. It also gives complexion, and helping for sensation of touch to the body¹².

According to sushruta and charaka have also mentioned that raktadhatu is the main for living body. It is responsible for giving support, for promotion of strength, complexion, and happiness, nutrition to the succeeding dhatu and long life to the

body. Apart from this it also plays a vital role in sustenance of lean vital. There are ten factors which help in sustaining the vital organs such as hearts, head, and bladder, throat, purified blood, semen, ojas, and rectum¹³.

FUNCTION OF THE BLOOD (MODERN POINT OF VIEW)

NUTRITIVE FUNCTION

Nutritive substances like glucose, amino acids, lipids and vitamins derived from digested food are absorbed from gastrointestinal tract and carried by blood to different parts of the body for growth and production of energy.

RESPIRATORY FUNCTION

Transport of respiratory gases is done by the blood. It carries oxygen from alveoli of lungs to different tissues and carbon dioxide from tissues to alveoli.

EXCRETORY FUNCTION

Waste products formed in the tissues during various metabolic activities are removed by blood and carried to the excretory organs like kidney, skin, liver, etc. for excretion.

TRANSPORT OF HORMONES AND ENZYMES

Hormones which are secreted by ductless (endocrine) glands are released directly

into the blood. The blood transports these hormones to their target organs/tissues.

Blood also transports enzymes.

REGULATION OF WATER BALANCE

Water content of the blood is freely interchangeable with interstitial . This helps in the regulation of water content of the body.

REGULATION OF ACID-BASE BALANCE

Plasma proteins and hemoglobin act as buffers and help in the regulation of acid-base balance.fluid.

REGULATION OF BODY TEMPERATURE

Because of the high specific heat of blood, it is responsible for maintaining the thermoregulatory mechanism in the body, i.e. the balance between heat loss and heat gain in the body¹⁴.

RAKTA KSHAYA & VRIDDHI LAKSHANA

INCREASED STATE OF RAKTADHATU (VRIDDHI LAKSHANA)

Excess intake of hot and pungent food, exposure to hot climate are the important. It is due to causes of rakta vriddhi.

According to *Sushrut Acharyas*

- Skin rashes
- Redness of eyes and engorged blood vessels¹⁵ .

According to *Vagbhata (Astang Hridaya)*

- *Visarpa* (erysipelas)
- *Pleeha vidradhi* (splenic abscess)¹⁶
- *Kushtha* (All types of skin diseases including leprosy)
- *Vataarsha* (*vatarakta* / gout)
- *Pittarsha* (Hemorrhagic disorders)
- *Gulma* (Abdominal tumor)
- *Upakusha*(gingivitis)
- *Kamala* (Jaundice)
- *Vyanga* (Hypopigmentation of skin)
- *Agninasha*
- *Sammoha*(Syncope)
- *Raktatwak-netra-mutrata* (Reddish Coloration of skin, Conjunctiva and urine) .

RAKTA KSHAYA LAKSHANA

According to *Acharyas Vagbhata*

- Likeness towards sour and cold
- loss of stiffness of blood vessels¹⁷
- Dryness.

According to *Acharyas Sushrut*

- Craving for sour and cold
- Looseness of blood vessels.

According to *Dalhana commentary's*

- Decreased state of rakta leads to vata vriddhi which results in craving for sour food.
- Decreased state of rakta also enhance heat production due to depletion of water of rakta dhatu. This condition results in craving for cold food so that heat can be reduced¹⁸.

VISHUDHA RAKTA SARA PURUSHA LAKSHANA

The signs and symptoms of person endowed/ having pure blood in their body are clarity in complexion, normal functioning of the sense organ, natural urge for the objects of sense organs, *avyahata, paktivegam, sukhanwita, pushti* and strength.

DISCUSSION

Rakta or the blood has been considered as an important dhatu after Rasa, Just like rasa dhatu is accepted as the root or the base of other dhatus(19). So the rakta dhatu is accepted as the basis of living beings. *Jeevanam & pranuvartana* are

two most important functions of rakta dhatu. *Jeevan* means life. Life of every human beings depend upon proper blood circulation. According to *Acharyas Dalhan* says that life of every person depends on *prana supplied by rakta dhatu*. *prana-dravya* is nothing but oxygen present in air.

CONCLUSION

Rakta dhatu is one of the pranayantan. Raktadhatu is having panchamahabuta composition due to this it has different quality. It is formed in Yakruta and Phleeha and circulated throughout the body with rasa dhatu.

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