



STUDY OF RAKTASARA PURUSH WITH SPECIAL REFERENCE TO LIVER FUNCTION TEST

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ABSTRACT

In Ayurvedic texts, the concept of *Dhatu Sara* is related to the qualitative state of *Dhatu* of an individual. *Sara*, under tenfold examination, is another very important tool for the assessment of the biological strength of the individual. *Sara* may be considered as an optimum degree of genetic code of an individual's D.N.A. with respect to particular *Dhatu*. In our body, every individual's D.N.A. has different genetic codes. So, it may be said that the quality of *Dhatu* an individual will depend upon a specific genetic code. If the genetic code of the individual's D.N.A. with respect to *Dhatu* is optimum, the formation of thare particular *Dhatu* in the body will be of very good quality. *Sarva Sara Purusa* has the optimum degree of the genetic code with respect to all *Dhatu*s. *Rakta Sara Purusha Lakshanas* indicates the sign of richness and the best essence of the blood tissue of a person. Acharya Charaka has advocated the examination of *Sara* in *Dashavidha Pariksha* to assess the bala (physical and psychological strength) of *Rogi* and to know the state of *Dhatu* and its functioning capacity. Sometimes in clinical practice, the physician may misinterpret the appearance of the body. The person with *Sthula Sharir* can be considered a strong person, and the person with *Krishha Sharir* can be considered a weak person. But factually, it is observed that some persons who possess *krisha sharir* are strong enough to resist the adverse situation and vice versa. Hence, *Sara*'s examination is very important prior to physical training, choice of job, intake of diet, and many more of the drugs in daily life to the individuals in clinical practice. Liver function tests, also known as liver chemistries, help to assess the liver's health by testing protein liver enzyme and bilirubin levels in the blood.

Tests that are widely used to test liver irregularities include A.L.T., A.S.T., A.L.P., Albumin, Bilirubin, etc. Sara's examination is very important prior to physical training, choice of job, intake of diet, and many more drugs in daily life to the individuals in clinical practice.

Keywords: *Raktasara, Dhātu, Sarata*, Liver Function Test, *Purush*

INTRODUCTION

Since antiquity, *Ayurveda* has been serving as a holistic medical science ever since in the world. *Ayurveda*, the traditional medicine of India, is one of the most comprehensive and longest-practiced natural health care systems; it may be translated into various ways. "Ayu" is the root that means "life" or anything that is related to life, and "Veda" means "knowledge" or wisdom. *Ayurveda* is usually translated as the science of life, but the most suitable translation would probably be something like knowing how to live well that is a long and healthy life. In *Ayurveda*, it is necessary to understand the basic concepts which are related to manifestation, diagnosis and prognosis of disease. *Acharyas* says that without the involvement of dosas diseases would not manifest in the body. That's why it is necessary to understand the normal (equilibrium state) and abnormal (disequilibrium state) of *Dosas* in detail to know about physiological and pathological state of *Dosas*. The equilibrium state of dosas is responsible for the maintenance of normal physiological functions. Seven types of *Dhātu's* are described in detail namely *Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra*. Seven types of *UpaDhatus* are produced by the *Dhātu's* during their metabolism are *Stanya, Rajas (Rasa Dhātu), Kandara and Siras (Rakta Dhātu), Vasa and Sattvaca (Mamsa Dhātu), Snayu, Sandhi and Sveda (Meda Dhātu), Danta (Asthi Dhātu), Kesa (Majja Dhātu) and Ojas (Shukra Dhātu)*. The Body Gets Nourished When the *Dhātu's* Are In Equilibrium State. *Dhātu's* May Undergo *Vridhhi* (Increase) Or *Kshaya* (Depletion) Depending On the Nature of causative factors and responsible various disorders. *Acharya Charak* in above verses describes that *Raktasar* body have unctuous, red, beautiful and dazzling like ear, eyes, face, tongue, nose, lips, and palms, sole of the foot, nails, forehead, and penis. The great *Shalyak Sushruta* shares similar

opinion that *Raktasar* peoples possess unctuous and coppery nails, eyes, palate, tongue, lips, palms, and soles.

The *Raktasar* person having endowed with some special mental characters as²:

Sukha - Comfort and happiness

Uddhatam – Arrogance / Pride / Violent/ Rude / Ill Behaved

Medha - Good grasping power

Manasvitam- Self Respect/ High Mindedness / Magnanimity / Wiser

Soukumaryam- Delicate nature

Anatibalam- Less strength and endurance

Aklesha sahisnutvam- Inability to face difficulties.

Ushna asahisnutvam- Intolerance to heat

MATERIAL AND METHOD:

The present study entitled "Study of *Rakta Sara Purush* with special reference to Liver Function Test" has been carried out in the Department of *Rog Nidan Evam Vikriti Vigyan*, Faculty of *Ayurveda*, and Government Ayurvedic College and Hospital Kadamkuan Patna Bihar. The study was conducted on 120 Students randomly selected from different semester of Bachelor of Ayurvedic Medicine and Surgery (BAMS) of different years of P.G. scholar including internees from Government Ayurvedic College and Hospital Kadamkuan, Patna and Students are living around the college. All *Raktasara* students were found fit for further detailed survey study. A proforma was designed incorporating the sign and symptoms of *Raktasara* person as described in *Samhitas* and the hematological and biochemical laboratory parameters. To co-relate *Raktasara Purush* with hematological and biochemical parameters (Liver Function test) apparently healthy individuals were taken in the study. For each characteristic, grading was done, and scores were allotted on the basis of total scores

obtained, the subjects were divided into three categories, *Pravara* (individual with excellent tissue quality), *Madhyam Sara* (Individual with Moderate tissue quality), and *Avar Sara* (individuals with poor tissue quality).

Survey proforma inducted:

- History taking
- Physical examination (by vision), psychological assessment
- Metabolic or functional assessment and
- Also, the laboratory assessment of the blood indices.

The parameters of the survey were based on *Sara Lakshanas* described in *Charak Samhita Viman Sthan*.

AIM AND OBJECTIVES:

The objectives of this study were -

1. To find out significant relationship between *Rakta Sarta* and LFT.
2. Implementation of these findings in early diagnosis and prevention of disease pertaining to *Rakta Dhatu* and Liver.
3. To understand the possible mechanism of manifestation of Liver disease with special reference to *Rakta Sarta*.

Concept of Dhatu -³

The process of digestion of food material is into macro level of *Ahararasa* and the formation of *Dosha Dhatu* and *Mala* from this *Ahararasa* at the micro level. The *Dhatu*s are defined as *Dharanata Dhatva*, the element that which sustains the body, maintains it and helping of grow. The nourishment elements that help sustain the body and maintain and help it to grow are known as *Dhatu*s. The nourishment of these elements helps in growth and healthy existence while the wasting of the *Dhatu*s causes ill health. *Rasa*, *Rakta*, *Mamsa*, *Meda*, *Asthi*, *Majja*, and *Shukra* are the seven bodily elements termed as *Dhatu*s. The seven *Dhatu*s of *Ayurveda* seems to be the elementary tissue, viz- *Rasa* - Plasma, Tissue fluid or lymph, the first product of ingested food after metabolism.

Rakta -The formed element *Sthayi Rakta Dhatu*, which coffer on blood,

Mamsa -Muscles tissue

Medas - Adipose tissue

Asthi - Bone and cartilage tissue

Majja - Marrow tissue including red bone marrow.

Shukra - Reproductive tissue

Production of *Rakta Dhatu*-⁴

All the *Dhatu*s are evolved in the foetal stages of development and nourished by the *Ahara Rasa* thereafter the verse "rasat raktam" implies that replenishment of the *Rakta Dhatu* by the *Rasa Dhatu*, the *Rasa Dhatu* nourishes the already existent *Rakta Dhatu* and replenishes it in quality and quantity. The *Poshaka Rakta Dhatu* formed during the formation of *Rasadhatu* enters the *Rakta Vaha Srotas* where it is acted upon by the *Rakta Dhatvagni* to produce stable nourished form of *Rakta Dhatu*s. *Acharya Sushruta* says that the fluid *Rasa Dhatu* is dyed into red colour in the organs of liver and spleen. The liver and spleen are the main destinations of *Raktavaha Srotas*, where the action of *Rakta Dhatvagni* takes place. *Acharya Sushruta* also uses the word *Ranjakagni* for *Rakta Dhatvagni*. This *Ranjakagni* is responsible for the transformation of *Rasa* into *Rakta* and importing colour to the *Rakta Dhatu*. The *Astanga Sangraha* states that the main location of *Ranjakagni* is the *Amashaya*, it is possible that the word *Amashaya* normally implies all the organs in the vicinity of *Amashaya* (*Amashaya Pradeshi*) which also includes the liver and spleen as evident from the study of anatomy of visceral organs. It is really a fact that Ayurvedic scholars have identified a hemopoietic factor to be present in stomach, liver and spleen long before 10th century B.C. castle in 1928 showed, the presence in the gastric tissue of the material necessary for the formation of anti-anemic factor. It being like liver itself is effective in the treatment of pernicious anemia. The hemopoietic principle stimulates the bone marrow to produce R.B.C.s. In case this factor becomes lacking the bone marrow produces premature R.B.C.s without proper hemoglobin content in them.

This factor is in 3 forms -

1. Extrinsic factor- In food in the form of B₁₂, Folic acid and Iron

2. Intrinsic factor- In the body i.e Brunner's glands of duodenum and is stored in liver and spleen.

3. Renal erythropoietic factor of kidney

The word 'Amashaya' in the view of Vagbhata in this context, is only liver, spleen and Amashaya cannot be taken here as stomach or intestine because the *Ranjaka* of *Rasa* is not possible in *Amashaya*, as there is no *Rasa Ranjaka* in *Amashaya*. Anyhow *Ya-krit* and *Pleeha* can also be considered as *Ranjaka Pitta Sthana*.

LIVER FUNCTION TEST:⁵

A group of tests are done which are useful in revealing or confirming liver disease, in indicating whether hepatic cells or biliary tree is primarily involved, in giving an indication of the extent of liver damage, and in assessment of progress of disease.

A. Hematological function:

Liver has varied hematological functions e.g.:

- It is the site of R.B.C. formation in fetal life. (b) It is the site of R.B.C. destruction in adult life.
- It serves as a store house of blood and also takes part in the regulation of blood volume.
- It is also responsible for blood cleansing action by Kupffer cells.

B. Synthetic function:

It is responsible for synthesis of different substances e.g.:

- Plasma proteins like albumin.
- Clotting factors like fibrinogen, prothrombin, factor V, VII, IX and X.
- Like SGOT and SGPT.
- Urea.
- Cholesterol.

C. Metabolic function:

- In carbohydrate metabolism: Liver helps in synthesis, storage and release of glucose by glycogenesis, glycogenolysis and gluconeogenesis.
- In protein metabolism: Liver helps in synthesizing plasma proteins, blood clotting factors, enzymes etc from amino acids.
- In fat metabolism:
 - It is a site β oxidation and thereby forms active acetate by oxidizing the fatty acids.

- It takes part in synthesis of cholesterol and saturated fatty acids from acetate. It also helps in synthesis of lipoproteins like, HDL, LDL, chylomicrons etc.

(d) In alcohol metabolism: Liver converts the alcohol into fatty acids.

(e) In hormone metabolism:

It decreases the circulatory adrenal cortical and sex steroids. It also helps in inactivation of insulin, glucagon, ADH and anterior pituitary hormones.

(f) In vitamin metabolism:

- It helps information of Vit -A.
- It is the storehouse of Vit A, B, and D.
- It converts folate to its active form i.e., tetrahydrofolate.

D. Excretory function:

Liver also excretes some toxic products like-heavy metals, bacterial toxins, drugs, and cholesterol and bile pigments.

E. Detoxifying or protective function:

By the process of oxidation, hydrolysis, reduction and conjugation it detoxifies different substances either produced in the body or taken along with the food.

F. Thermal function: It takes part in heat regulation by producing large amounts of heat.

DISCUSSION

It is already mentioned in *Charak Viman Sthan* 8th that before establishing any theory the findings should be subjected through some sequential steps to draw conclusion from findings and results of the research work discussion is needed. The present discussion is nothing but a logical explanation of observation. It is recognized in holistic life science it deals with the wisdom and knowledge of positive lifestyle, maintenance of health and cure of diseases. Nature is a great source of knowledge material. There are seven locations of *Rakta Dhatu* in the body like liver, spleen vessels, arteries and veins, *Raktavaha Srotas*, *Raktadhara Kala*, and *Raktashaya* and *Raktadhara*. The *Yakrita* and *pleeha* (liver and spleen) are the main location of *Raktavaha Srotas*. The heart which circulates *Rakta* along with *Rasa* and throughout the

body is also one of the main locations of *Rakta Dhatu* along with the vessels, which carry the *Rakta Dhatu*. The present study “study of *Raktasara Purush* with special reference to liver function test” has to discuss in the terms of subjective result and laboratory result finding.

1. Laboratory test, and
2. Observation and result

Chi-square test of association between textual symptoms score and SGPT was found to be not significant ($p= 0.217$) ($p> 0.05$). This indicates that statistically not significant hence *Raktasarta* is independent of SGPT. Chi-square test of association between textual symptoms score and SGOT was found to be not significant ($p=0.058$) ($p> 0.05$). This indicates that statistically not significant hence *Raktasarta* is independent of SGOT. Chi-square test of association between textual symptoms score and Alk. Phosphatase was found to be not significant ($p= 0.699$) ($p> 0.05$). This indicates that is statistically not significant and hence *Raktasarta* is independent of alkaline phosphatase.

Maximum 58.3% *Madhyam Sara* subject had normal bilirubin total followed by *Pravra* and *Avar* 39.2% and 2.5% respectively. This indicates that maximum subjects had normal range of laboratory value hence *Raktasarta* depends on total bilirubin. Maximum 58.3% *Madhyam Sara* subject had normal bilirubin direct followed by *Pravra* and *Avar* 39.2% and 2.5% respectively. This indicates that maximum subjects had normal range of laboratory value hence *Raktasarta* depends on direct bilirubin. Maximum 58.3% *Madhyam Sara* subject had normal bilirubin indirect followed by *Pravra* and *Avar* 39.2% and 2.5% respectively. This indicates that maximum subjects had normal range of laboratory value hence *Raktasarta* depends on indirect bilirubin. Chi-square test of association between textual symptoms score and Blood urea was found to be not significant ($p= 0.956$) ($p>$

0.05). This indicates that statistically not significant and hence *Raktasarta* is independent of blood urea.

CONCLUSION

Conclusion is the essence of all the efforts put together accomplish the proposed study, the conclusions drawn from the present survey study are as follows. *Raktasara* is independent of SGPT (Serum Glutamic Pyruvic Transaminase) or ALT (Alanine Transaminase). *Raktasara* is independent of SGOT (Serum Glutamic Oxaloacetic Transaminase) or AST (Aspartate transaminase). *Raktasarta* is independent of alkaline phosphatase (ALP). *Raktasarta* depends on total bilirubin. *Raktasarta* depends on direct bilirubin. *Raktasarta* depends on indirect bilirubin. *Raktasarta* is independent of blood urea. *Raktasara* subjects have very good quality of blood with normal LFT. *Raktasara* subjects have good immunity and disease-free status means *Sukhi* and *Arogya*. This study can be used as a model of standardization of other *Sara* and other area of field of Ayurveda where examination is based on subjective parameters.

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