EVALUATION OF THE RELATION BETWEEN RAKTASAAR PAREEKSHA AND COMPLETE BLOOD COUNT

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ABSTRACT

Saarapareeksha is a unique concept explained under the heading of *DashavidhaAturapareeksha*, by *Acharya Charaka*. Primarily *Saara* determines *Bala* or the strength of the person. It can be recognized that the person of particular *Sara* will have more resistance to the disease produced by the particular *Dhatu*. This view was supported by *Kashyapa Samhita,* i.e., *Twak Sara* children have disease-free *Twak* and their skin is capable of rapid healing of wounds tone, *Twaksaara* is considered as *Rasa saara*. In this present study, the questioner was framed to assess *RaktasaraPurushlakshana* after that the CBC of all 30 volunteers are investigated,30 individuals, 20 individuals have MCHC value more or equal to 34.6, As the Causes of high MCHC include: Autoimmune hemolyticanemia: This is a condition in which the body's immune system mistakenly attacks its own red blood cells. Sometimes, high MCHC develops on its own, but it can also occur alongside lupus or lymphoma. It can also happen as a result of taking certain medications. Symptoms - Weakness and fatigue may be symptoms of autoimmune hemolyticanemia. Among 30 individuals, 15 individuals have RDW more or equal to 14.0 and 15 individuals have RDW less than 14.0. A high RDW (over 14.5%) means that the red blood cells vary a lot in size. A normal RDW is 11.6 to 14.6%, but researchers from the Intermountain Medical Centre Heart Institute found that patients with an RDW level greater than or equal to 12.9% had an increased risk for depression. These two blood investigations as strong evidence in this research work, to correlate with the word told by *Acharya Charaka, Raktasara Purusha Sukumara* means they are very delicate this word can be correlated with Autoimmune hemolyticanemia. RDW level greater than or equal to 12.9% had an increased risk for depression this can be correlated

with *Awrasatwa. Awarasatwa* persons get affected by depression compared to *Prawar* and *MadyamaSatwa*. So, all together the word *Sukumara* (delicate) is very scientific. Evaluation of CBC in *Satvasarapurusha* will give more wattage to our Basic Principles,By this, a strong conclusion can be given that the Basic Principles of the Holistic Science *Ayurveda* are more scientific.

To evaluate the *RaktasaraPurushlakshana* with special reference to CBC this study has been undertaken.

Key words: *RaktasaraPurushlakshana, Sukumara,* CBC, MCHC, RDWAutoimmune hemolyticanemia

INTRODUCTION

Saarapareeksha is a unique concept explained under the heading of *Dashavidhaaturapareeksha,* by *Acharya Charaka.* Primarily *Saara* determines *Bala* or the strength of the person. *Acharya Chakrapani* exemplified Sara as *'Vishuddhataro Dhatu',* which means the essence of all *Dhatu*. Totally eight types of *Saara* are explained by *Acharya Charaka*, each one characterized by both physical as well as psychological parameters.[1] It can be recognized that the person of particular *Saara* will have more resistance against the disease produced by the particular *Dhatu.* This view was supported by *Kashyapasamhita,* i.e., *Twak Saara* children have disease-free *Twak* and their skin is capable of rapid healing of wounds tone, *Twaksaara* is considered as *Rasasaara*.[2]*Raktasarapurushlakshanas* are the ear, the eyes, the mouth, the tongue, the nose, the lips, hands, and soles of the feet, nails, forehead, and genitals are unctuous, reddish, shapely, and full of luster. The perfectness of tone indicates their happiness, delicacy, moderate strength, and incapacity to endure troubles and heat.[3] According to *Ayurveda Rasa* and *Rakta* are two different *Dhatus,* but even though *Rakta* and *Rasa Dhatus* together can be correlated with Blood cells including plasma. The blood that runs through the veins, arteries, and capillaries is known as whole blood, a mixture of about 55 percent plasma and 45 percent blood cells.[4] The normal quantity of *Rasa* is 9 *Anjali* and *Rakta* is 8 *Anjali*,[5]the percentage of *Rasa* is 53% and *Rakta* is 43%, which indicates that *Rasa Rakta* are quantitatively similar to blood and plasma. High hemoglobin rate = red to pinkish tones. Red blood cells play an important role in our health by carrying fresh oxygen throughout the body. The oxygen gives our blood its bright red color, because of the hemoglobin inside our red blood cells. Hemoglobin is a protein that forms a complex with iron molecules and together they transport oxygen molecules throughout the body. Iron has the property of reflecting red light and because there is so much iron in our blood, blood looks red. When hemoglobin is carrying a lot of oxygen (like when just leaving the lungs), blood is bright red. When most of the oxygen has been released to the body, blood is dark red[6]. These can be correlated with *ShudhaRakta.* The WBC differential part of the CBC breaks down the WBCs into five different types: neutrophils, lymphocytes, monocytes, eosinophils, and basophils. Which fight against infection involves in defense mechanism, which can be correlated with *Bala*. But as per *charaka satvasarapurusha* has *alpabala*. Some of the conditions can be correlated with the below-mentioned symptoms. Deviation in the normal differential count of WBC causes less immunity and leads to ill health. For instance, infection, Tuberculosis, typhoid, Allergic, Stress malnutrition Finding out the count of each type of WBC gives more information about the underlying problem. For example, in the early stages of an infection, most of the increase in WBCs is attributable to the increase in neutrophils. As the infection continues, lymphocytes increase. Worm infections can trigger an increase in eosinophils, whereas allergic conditions, such as hay fever, trigger an increase in basophils. Platelets, help with blood clotting.[7]Evaluation of CBC in *Satvasarapurusha* will give more wattage to our Basic principles,to evaluate the *RaktasaaraPurushlakshana* with special reference to CBC this study has been undertaken.

Objectives

1. To assess the *RaktasaraPurushlakshana* in Healthy individuals
2. To assess the CBC in healthy individuals.
3. To evaluate the relation between *RaktasaraPurushlakshana* and CBC count.

Methodology

• Randomly 30 healthy individuals of 18 to 30 years of age of either gender were selected from BLDEA's AVS Ayurveda Mahavidyalaya campus.

The Questioner proforma of *Raktasara purusha* was prepared according to that assessment of *Raktasara purusha* done then the Complete Blood Count of all diagnosed healthy individuals was done.

Objectives -

1) As the first objective is to assess the *RaktasaraPurushlakshana* in Healthy individuals, this objective is fulfilled by framing the Questioner of *Raktasarapurusha.*

2) Assessment of CBC is done in all healthy individuals.

Rakta Sara Purusha:

3) Evaluate the relation between *RaktasaraPurushlakshana* and CBC.

• **Inclusive criteria:**

Healthy individuals of either gender of age group 18 to 30 years.

• **Exclusive criteria:**

☐ Pregnancy and Menopause Women

☐ Individuals with any other systemic disorders

Assessment criteria for Healthy individuals-

☐ *Sama Dosh*

☐ *Sama Agni*

☐ *Sama Dhatu mala kriya,*

☐ *Prasanna, Atma, Indriya* and *Mana……*

Laboratory investigation:

Complete Blood Count

Questioner format -

Naama (Name of Volunteers); Date;

Vayataha (Age); *Linga* (Sex); Occupation;

Whether the ears unctuous, bright red color, and beautiful?	Whether the lips are red in color or coppery in color?
Whether the ears are soft to the touch?	Whether the appearance of the lips is beautiful or not?
Whether the ears are delicate to the touch?	Palm and sole are unctuous or not?
Whether the eyes look slimy or dry?	The appearance of the palm and sole is beautiful or not?
Whether the color of the eyes is bright red color or coppery red color	Palm and sole are bright red or coppery color?
Whether the appearance of the eye is beautiful or not?	Whether the nails unctuous or not?
Whether the appearance of the face is bright red Color or not?	Whether the color of the nail is red or coppery?
Whether the skin of the face is soft or rough to the touch?	Whether the appearance of the nail is attractive ornot?
Whether the facial appearance is beautiful or not?	Whether the forehead is unctuous or not?
Whether the tongue is unctuous or Rooksha?	Whether the color of the forehead is red or coppery?
Whether the color of the tongue is red or coppery?	Whether the appearance of the forehead is beautifulor not?
Whether the appearance of the tongue is attractive or not?	Whether the genital organs unctuous or not?
Whether the nose is slimy or Rooksha not?	Whether the color of genital organs is red orcoppery?
Whether the nose is unctuous or Rooksha?	Whether the appearance of the genital organs is beautiful or not?
Whether the color of the nose is red or coppery?	Whether the palate is unctuous or not?
Whether the appearance of the nose is attractive or not?	Whether the color of the palate is red or coppery redscolor?
Whether the lips are unctuous or not?	. Whether able to tolerate or face a difficult situation or not?
	Whether able to tolerate heat or not

Name & Sign of Principal Investigator - Name & Sign of Guide-

Observation and results-

Table: -No 1

Age(Years)	No. of subjects	Percentage
<= 20	14	46.7
21 - 25	14	46.7
26+	2	6.6
Total	30	100

Among 30 individuals 14 (46.7%) were aged more than 20, 14 (46.7%) were aged between 21 – 25, and 2(6.6%) were in the age group 26. All the randamly selected individuals were students.

Table: No-2.

Gender	No. of subjects	Percentage
Female	18	60.0
Male	12	40.0
Total	30	100

Among 30 individuals 18 (60%) were female and 12(40%) were male…

Table: No-3

WBC	No. of subjects	Percentage
4000-10000	18	60.0
>10000	12	40.0
Total	30	100

Among 30 individuals, 18(60%) of the individuals have a WBC count in between 4000-10000 and 12(40%) of the individuals have a WBC count is more than 10000 these individuals have less immunity power.

Table: No-4.

RBC	No. of subjects	Percentage
< 3.8	2	6.7
3.8 - 4.8	15	50.0
>4.8	13	43.3
Total	30	100.0

Among 30 individuals, in 15(50%) of the individuals the RBC count is between 3.8-4.8, in 13(43.3%) individuals, the RBC count is more than 4.8, and only in 2(6.7%) of the individuals the RBC count is less than 3.8.13individuals have some disorders.

Table: No-5.

HB	No. of subjects	Percentage
< 12.0	9	30.0
12.0 - 15.0	16	53.3
>15.1	5	16.7
Total	30	100.0

Among 30 individuals, 16(53.3%) of the individuals have HB% within the range12-15, in 9 individuals it is below 12 and in 5 (16.7%) it is more than 15.1. results show that 16 individuals are normal and 12 individuals have some disorder.

Table: No-6

PCV	No. of subjects	Percentage
< 40.0	19	63.3
40.0+	11	36.7
Total	30	100.0

Among 30 individuals, 19(63.3%) of the individuals have PCV more than 40, and 11(36.7%) individuals have 40. A borderline and low PCV implies that the patient has a low number of red blood cells and is suffering from anaemia.

Table: No-7.

MCV	No. of subjects	Percentage
< 80.0	13	43.3
≥80.0	17	56.7
Total	30	100.0

Among 30 individuals, 17(56.7%) individual MCV is more or equal to 80, and for 13(43.3%) individuals it is less than 80. less MCV less than 80 indicates Microcytic anemia.

Table: No-8.

MCH	No. of subjects	Percentage
< 27.0	10	33.3
27.0 - 32.0	14	46.7
>32.1	6	20.0
Total	30	100.0

Among 30 individuals, in 14(46.7%) individuals, the MCH is within the range of 27-32. In 10(33.3%) individuals it is less than 27, which indicates iron deficiency anaemia.

Table: No-9.

MCHC	No. of subjects	Percentage
< 31.5	2	6.7
31.5 - 34.5	8	26.7
≥34.6	20	66.7
Total	30	100.0

Among 30 individuals, 20(66.7%) individuals have an MCHC value more or equal to 34.6, and 8(26.7%) individuals have an MCHC value of 31.5 - 34.51.

Table: No-9

PLT	No. of subjects	Percentage
< 150000	1	3.3
150000 - 450000	28	93.3
≥450001	1	3.3
Total	30	100.0

Among 30 individuals,28(93.3%) of individuals have a platelet count of 15000-450000.

Table: No-10.

RDW	No. of subjects	Percentage
<= 14.0	15	50.0
>14.1	15	50.0
Total	30	100.0

Among 30 individuals, 15(50%) individuals have RDW more or equal 14.0and 15(50%) individuals have RDW less than 14.0. A high RDW (over 14.5%) means that the red blood cells vary a lot in size. A normal RDW is 11.6 to 14.6%, but researchers from the Intermountain Medical Centre Heart Institute found that patients with an RDW level greater than or equal to 12.9% had an increased risk for depression.

Table: No-11.

LYMPOCYTES	No. of subjects	Percentage
< 20.0	1	3.3
20.0 - 40.0	27	90.0
≥40.1	2	6.7
Total	30	100.0

Among 30 individuals,27(90%) has lymphocytes 20-40.2(6.7%) have lymphocytes more than and equal to 40.1 and 1(3.3%) have lymphocytes more than 20.

Descriptive

Parameters	Minimum	Maximum	Mean	Std. Deviation
AGE	19	28	20.81	1.902
WBC	4900	14400	9473.33	2407.880
RBC	3.6	6.0	4.737	.5341
HB	7.9	16.9	13.283	2.0103
PCV	27.6	45.0	37.887	4.1629
MCV	38.5	95.5	79.057	11.9506
MCH	15.4	35.6	28.277	4.5923
MCHC	28.6	37.6	34.920	2.1519
PLT	148000	451000	335300.00	65726.261
RDW	12.4	21.0	14.557	1.9013
NEUTROPHILS	52.8	77.9	64.830	6.2645
LYMPOCYTES	18.5	42.6	30.050	6.2668
MONOCYTES	.0	.0	.000	.0000
ESINOPHILS	3.4	5.9	4.957	.7166
BASOPHILS	.0	.0	.000	.0000

The contribution made towards increasing the state of knowledge in the subject-

As this study is observational, in this study it is observed that,

1) Among 30 individuals, 20(66.7%) individuals have **MCHC** value more or equal to 34.6, 8(26.7%) individuals have the MCHC value 31.5 - 34.51. MCHC is short for mean corpuscular haemoglobin concentration. Simply put, this is the average concentration of haemoglobin inside a group of red blood cells. MCHC values by themselves are not always a sign that a person has any underlying health problems. There are several potential causes of high MCHC. It often occurs in people with conditions that cause the red blood cells to be fragile or easily destroyed.

Causes of high MCHC include:

Autoimmune hemolyticanaemia: This is a condition in which the body's immune system mistakenly attacks its own red blood cells. Sometimes, high MCHC develops on its own, but it can also occur alongside lupus or lymphoma. It can also happen as a result of taking certain medications. Symptoms Weakness and fatigue may be symptoms of autoimmune hemolyticanaemia.

2) Among 30 individuals, 15(50%) individuals have **RDW** more or equal 14.0and 15(50%) individuals have RDW less than 14.0. A high RDW (over 14.5%) means that the red blood cells vary a lot in size. A normal RDW is 11.6 to 14.6%, but researchers from the Intermountain Medical Centre Heart Institute found that patients with an RDW level greater than or equal to 12.9% had an increased risk for depression.18-Nov-2013

These two blood investigations as a shred of strong evidence in this research work, to correlate with the word told by *Acharya charakaRaktasara purusha Sukumara* means they are very delicate.

3) Among 30 individuals, 18(60%) of the individuals have a **WBC** count in between 4000-10000 and 12(40%) of the individuals have a WBC count is more than 10000 these individuals have less immunity power, as the white blood corpuscles play an important role defence mechanism.

4) Among 30 individuals, in 15(50%) of the individuals the RBC count is within 3.8-4.8, in 13(43.3%) individuals the **RBC** count is more than 4.8, and only in 2(6.7%) of the individuals the RBC count is less than 3.8.13individuals have some disorders, as high red blood cell count can be a sign of Dehydration. Heart disease. Polycythemia vera is a bone marrow disease that causes too many red blood cells to be made. Scarring of the lungs, often due to cigarette smoking.

5)Among 30 individuals, 16(53.3%) of the individuals have **HB%** within the range12-15, in 9 individuals it is below 12 and in 5 (16.7%) it is more than 15.1. results show that 16 individuals are normal, and 9 individuals have some disorder, as a low level

of haemoglobin in the blood relates directly to a low level of oxygen. In the United States, anaemia is diagnosed if a blood test finds less than 13.5 g/dL in a man or less than 12 g/dL in a woman.

6) Among 30 individuals, 19(63.3%) of the individuals have PCV more than 40 and 11(36.7%) individuals have 40. A borderline and low **PCV** implies that the patient has a low number of red blood cells and is suffering from anaemia. A low PCV implies that the patient has a low number of red blood cells and is suffering from anaemia.

7)Among 30 individuals, 17(56.7%) individual **MCV** is more or equal than 80 and 13(43.3%) individuals it is less than 80. less MCV less than 80 indicates Microcytic anaemia.

CONCLUSION

In this observational study entitled "Evaluation of relation between *Raktasaarapareeksha* and Complete Blood count", after investigation of CBC of all the individuals, the conclusion can be given as follows - 30 individuals, 20(66.7%) individuals have MCHC value more or equal to 34.6, 8(26.7%). As the Causes of high MCHC include Autoimmune hemolyticanemia: Which is a condition in which the body's immune system mistakenly attacks its own red blood cells. Sometimes, high MCHC develops on its own, but it can also occur alongside lupus or lymphoma. It can also happen as a result of taking certain medications. **Symptoms** - Weakness and fatigue may be symptoms of autoimmune hemolyticanemia. Among 30 individuals, 15(50%) individuals have RDW more or equal 14.0and 15(50%) individuals have RDW less than 14.0. A high RDW (over 14.5%) means that the red blood cells vary a lot in size. A normal RDW is 11.6 to 14.6%, but researchers from the Intermountain Medical Centre Heart Institute found that patients with an RDW level greater than or equal to 12.9% had an increased risk for depression.

These two blood investigations as a shred of strong evidence in this research work, to correlate with the word told by ***Acharya charakaRaktasara Purusha Sukumara* means they are very delicate this word can be correlated with Autoimmune hemolyti-**

canaemia and RDW level greater than or equal to 12.9% had an increased risk for depression this can be correlated with *Awrasatwa. Awarasatwa* persons get affected by depression compared to *Prawar* and *MadyamaSatwa.*

The remaining investigations like WBC, RBC, HB%, PCV, AND MCV are within their normal limit. By this, a strong conclusion can be given that the basic Principles of the Holistic Science of *Ayurveda* are more scientific.

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