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Case Study

STUDY OF AN ASSOCIATION OF SERUM TOTAL PROTEIN LEVELS WITH *MAMSA SARATA*

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ABSTRACT

Ayurveda is new hope for the world. It is important to correlate modern science and Ayurveda. According to metabolism of Ayurveda *Mamsa dhatu* is nourished by the *Rakta Dhatu*. To decide any parameter of *Mamsa Sarata* of an individual we should focus on the *Rasa* and *Rakt Dhatu.* Through examination of blood or serum we can get any modern parameter to conclude *Sarata* of *Mamsa Dhatu*. *Sarata Parikshan* is the important physical and functional examination of the body. According to *Bruhtrayee Heen, Mdhyam* and *Uttama sarata* are seen. To calculate the *Mamsa Sarata* of person we can use serum protein levels in blood. So it may be useful to develop some parameter while assessing *Mamsa Sarata* of the individuals. This article is an effort to correlate the *Sarata Parikshan* with modern science.

INTRODUCTION

The new era of globalization and upgrading technology is continuously developing at a lightning speed. According to modern science multiple parameters of laboratory investigation concerned to assessment of *Dosha, Dhatu, Mala* etc are available and implemented with certain diseases and or disorders. According to modern science they have certain ratios of the said parameters with each and every human being vice-versa or vice in Ayurveda. The variation of assessment of normal values of various investigation concerns to *Dosha, Dhatu, Mala* etc., Ayurveda describes individuals according to their constitutional or body- mind types called *Dosha dhatu* and *Mala*.

Commentator Chakrapanidatta explain that *Rasa* is digested by *Swagni* and is bio converted into *Rakta. Rakta* is bio converted into *Mamsa*. In such a fashion previous *Dhatu* generates next *Dhatu*.

According to this *Mamsa dhatu* is nourished by the *Rakta dhatu*. To decide any parameter to decide *Mamsa Sarata* of an individual we should focus on the *Rasa* and *Rakt dhatu*.

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Through examination of blood or serum we can get any modern parameter to conclude *Sarata* of *Mamsa Dhatu*.

AIM

1. To study an association of serum total protein levels with *Mamsa Sarata.*
2. To study the difference of protein level between *Heen, Madhyam* and *Uttam Mamsa Sara* subjects.

OBJECTIVES

1. To review all the ancient literature available on *Dhatu Sarata* and *Mamsa Sarta* in classical Ayurveda texts.
2. To assess the correlation of serum total protein level with *Mamsa Sarata.*

MATERIAL AND METHODOLOGY

Method: The subject will examine in following manner

1. Randomly selection of 100 subjects (male and female).
2. Firstly written consent obtained from each volunteer.
3. The assessment of *Mamsa Sarata* was carried out by filling standard format. Percentage of *Sharirik Parikshya Bhava* and *Manasik Parikshya Bhava* of an individual have been calculated in *Mamsa sarata* chart and *Mansik Parikshya Bhava* of an individual have been calculated with the help of questionnaire.
4. Collected blood sample was assessed by BIURET method by ERBA kit.

5. These recordings was tabularized

Inclusion Criteria

1. Age group of 20 to 40 years
2. Male and female both sexes inclusive.
3. No past history of illness.
4. Not taking any medicines.

Exclusion Criteria

1. Below 20 and above 40 years of age.
2. Subject having any acute or chronic illness with in past one year.
3. Pregnant and lactating women.

Withdrawal Criteria

The researcher feels that the protocol had been violated or subject become non co-operative.

Plasma proteins

Plasma proteins are

a. Serum albumin
b. Serum globulin
c. Fibrinogen

Serum contains only albumin and globulin. Fibrinogen is absent in serum because, it is converted into fibrin during blood clotting. Because of this, the albumin and globulin are usually call serum albumin and serum globulin.

Normal values

Normal values of plasma proteins are

Serum protein- 6.0 – 8.3 g/dl

Albumin- 3.2 – 5.0 g/dl

Globulin – 2 – 3.5 g/dl

Fibrinogen: 0.3 g/dl

Albumin globulin ratio

Ratio between plasma level of albumin and globulin is called albumin/globulin (A/G) Ratio. It is an important indicator of some diseases involving liver or kidney. Normal A/G ratio is 2:1.

Functions of plasma proteins plasma proteins are very essential for the body. Following are the functions of plasma proteins.

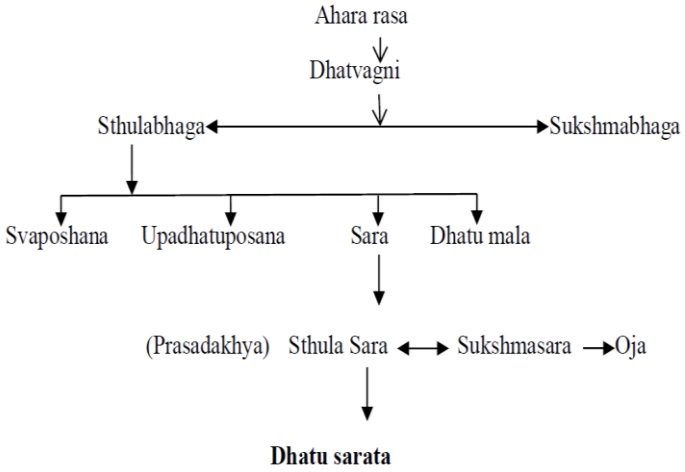
1. Role in coagulation of blood
2. Role in defense mechanism of body.
3. Role in transport mechanism
4. Role in maintenance of oncotic pressure in blood
5. Role in the regulation of acid –base balance
6. Role in viscosity of blood
7. Role in erythrocyte sedimentation rate
8. Role in suspension stability of red blood cells.
9. Role in production of trephine substance
10. Role as reserve proteins

Utility of *Sara Pariksha*: Acharyas Charaka has described *Pariksha* as

The word *Pratipatti* stands for these three meanings stated as below-

1. Real or true knowledge
2. Perfect judgment
3. Timely action.[11]

Sarata Pariksha is mainly described for *Bala Pariksha*. From the digested food, *Prasadbhaga (Ahara rasa)* and *Malakhyabhaga (Kitta)* are formed. Body channels constitute the means of passage for the essential and waste products. Acharya Charak has clearly describe the channels as *Strotas*. Through these *Strotas* the essential fluid *(Ahara rasa)* fed the *Rasa, Rakta, Mamsa*, *Med, Asthi, Majja* and *Shukra Dhatu*. The *Prasadabhaga Rasa* is going to manufacture all bodily elements.



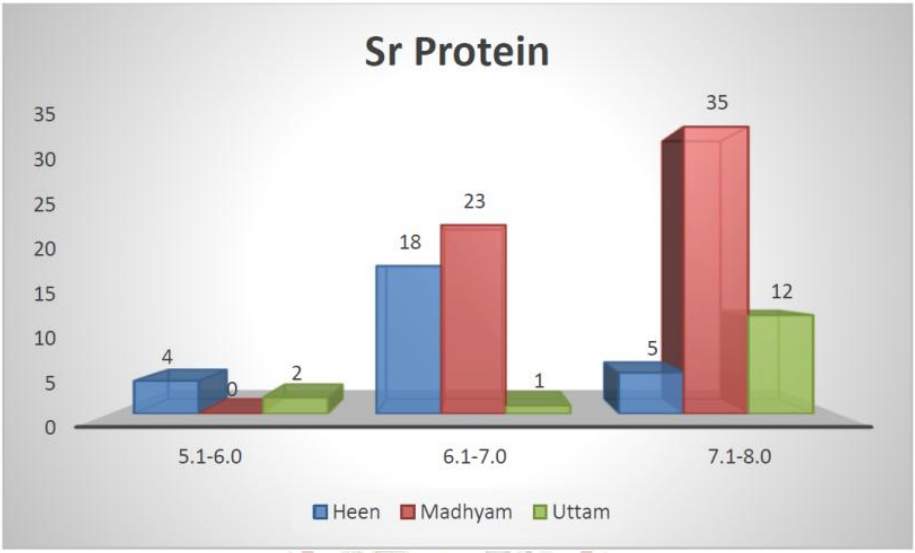
Dhatu sarata

Mamsasara

Physical characteristic: Individuals having the excellence of *Mamsa dhatu* are characterized by stability, heaviness, beautiful appearance and plumpness of temples, fore head, nape, eyes, cheeks, jaws, neck, shoulder, abdomen, axilla, chest and joints of upper and lower limbs are well covered with nourished and heavy, durable *Mamsa*. When *Raktadhatu* takes its origin in *Raktavahasrotas*, *Raktadhatwagni* acts on it. Nutriments coming from *Ahararasa* and from *Rasavahasrotas*. *Raktadhatu* is produced in *Raktavahasrotas*. Part of *Raktadhatu* reaches *Mamsavaha srotas*; it takes part in production of *Mamsadhatu*. Nutrients coming from *Ahararasa* and from *Raktavaha srotas* are acted by *Mamsadhatwagni* and give rise to *Mamsadhatu*. From this *Mamsadhatu* its *Upadhatu* and *Mamsa dhatu mala* is generated.

OBSERVATION

		Sr_Protein			Total
Mamsa Sarata		5.1-6.0	6.1-7.0	7.1-8.0	
Heen	Count	4	18	5	27
	%	14.8%	66.7%	18.5%	100%
Madhyam	Count	0	23	35	58
	%	0%	39.7%	60.3%	100%
Uttam	Count	2	1	12	15
	%	13.3%	6.7%	80%	100%
Total		6	42	52	100



	Value	df	P-Value
Pearson Chi-Square	28.400[a]	4	0.000
Likelihood Ratio	34.737	4	0.000
Linear-by-Linear Association	16.425	1	0.000
No. of Valid Cases	100		

To test the association between *Mamsa sarata* and serum protein we have used Chi-square test. From above table we can observe that P-Value is less than 0.05 hence we conclude that there is significant association between *Mamsa sarata* and serum protein.

DISCUSSION

On the basis of observation, collected data and statistical analysis, we can conclude that value of serum protein is directly proportion with the percentage of *Mamsa sara* present in an individual. So that *Uttam sarata* individuals has high serum protein value. As it can be seen that percentage of *Mamsa sarata* is directly proportional to the muscle mass. This can be concluded from *Gudh sandhyasthi mamsa* and as muscle have proteins as building blocks it can be concluded that more of the protein will be responsible for more of the muscle mass more is the percentage of *Sarata* in an individual. So it is possible to see that there is direct relation between protein and *Sarata*.

Increased value of serum protein is seen in *Uttam mamsa sara* subject. Middle range of globulin level is seen more in *Madhyam mamsa sara* subject.

CONCLUSION

The study entitled "Study of an Association of Serum Total Protein Levels with *Mamsa Sarata*" was undertaken. Based upon the results of the study highlighted in the form of tables and graphs and precisely discussed in the previous chapters, following conclusion are drawn.

There is an association between serum total protein in blood with *Mamsa Sarata.*

There is an association between globulin levels in blood with *Mamsa Sarata*.

Serum protein level is more significant in *Uttam mamsa sarata.*

Serum protein level increased in *Uttam mamsa sarata*.

This result has been calculated with the help of 100 individuals. More specific result will come out with large sample size.

SUMMARY

Mamsa sarata significance

We can observe that P-Value is greater than 0.05 in gender, age and albumin hence we conclude that there is no significant association between *Mamsa sarata* and gender, age and albumin level.

We can observe that P-Value is lesser than 0.05 in serum protein and globulin hence we conclude that there is significant association between *Mamsa sarata* and serum protein and globulin level.

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