



### “A comparison between Medosara and Medovriddhi w. s. r. to lipid profile: an observational study”

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#### ABSTRACT:

Dyslipidemia is burning issue in front of society. Due to change in dietary habits & unhealthy life study it is significantly observed across the globe. To keep in mind this study was designed. Aim of this study was to compare *Medosara* & *Medovriddhi* with special reference to lipid profile. For this study 30 *Medosara* presons were selected & 30 *Medovriddhi* patients were selected from OPD. In both cases lipid profile was carried. The comparison was done on the basis of lipid profile in both groups. The result was nonsignificant in triglycerides level but it was significant in serum cholesterol level & highly significant in HDL & LDL level. Conclusion of study is by evaluating lipid profile *Medovriddhi* and *Medosarata* can be identify to a significant extent.

**KEYWORD:** *Medosara*, *Medovriddhi*, Serum cholesterol.

#### INTRODUCTION:

Human body as well as the psyche both can get affected by various diseases. The homeostasis, which is termed as ‘*doshasamyam*’ in *Ayurveda*, stands for harmonious balance of dynamism and that of body humors- *vata*, *pitta* and *kapha*. These humors termed as *dosha* regulates every system even in a state of imbalance and attempts to restore the physiology. According *Sushruta Vata dosha* is considered as principal factor governing these activities.<sup>[1]</sup>

The *dhatu* are the substances which provide support to the body and helps to sustain the body, by providing strength and

making themselves available for the purpose of derivation of energy. These structural arrangements and their functional activities should be in a physiological limit. Anything, less or more and low or high, will lead to the state of pathology. The increase or decrease in bulk of any *dhatu* or in dynamic activity of any *dosha* governing and regulating its metabolism will invite illness. One more factor known as '*agni*' plays a pivotal role in this.

*Dhatus* have same set of functions in every individual but quality and 'richness' of this function may vary from person to person. This is decided by *prakriti* of a person and more by a '*sarata*' of that particular *dhatu*.

This *sarata* is beneficial in two ways. The person enjoys the functional benefits of activity of that particular *dhatu* and there are rare chances that he will suffer to derangement in its function. These must not at all be confused with the increase in its normal structure or functioning, either by *vriddhi* (increase in bulk and mass) or *prakop* (hyper dynamic state). *Vriddhi* and *kshaya* are considered abnormal conditions and differ from *sarata*. If *Medodhatu* in body becomes victim to this *vriddhi*, the resultant condition is called as *Medovriddhi*, which also contributes to the development of disease known as *sthaulya*. This *sthaulya*, described almost in all major texts of Ayurveda is similar to Obesity.

Almost everywhere in the world, last centuries developments have lead significant alterations in life style. On the top of these are increased caloric and fat intake and

reduction in physical activities. This leads to the *agnimandya* and results in reduced utilization of energy providing sources. The *meda* major source of energy, mostly in body in absence of other available source of energy. If it is underutilized, or is accumulated in excess, then it will start increasing and eventually will lead to *vriddhi*. This manifests into metabolic syndrome related diseases. The result can be explicitly seen in the form of diseases like diabetes, hyperlipidaemia, hypertension, obesity and many more. Hyperlipidaemia alone currently affects more than 10% of the global population and India is no exception to this. Obesity is said to lead to 30,000 premature deaths each year and it is shortening the lives of people by an average of nine years.

## AIM & OBJECTIVES

- To compare *Medosara* & *Medovriddhi* with special reference to lipid profile.

## METHOD & MATERIALS

### Methodology:

1. Design:  
This is observational study.
2. Study setting:  
Desired sample of patients of *Medovriddhi* was enrolled at my parent college which represent tertiary care or referral centres from different geographic administrative regions of Nagpur. *Medosara* person was registered through survey method.

### 3. Study Population:

An accessible population of diagnosed patients of *Medovriddhi* from parent college's hospital of Nagpur was study population for this project.

### 4. Study sample:

Diagnosed patients of *Medovriddhi* fulfilling inclusions and exclusion criteria who consented to participate in the study were enrolled.

### 5. Sample size:

Sample size for *Medovriddhi* & *Medosara* persons were taken 30 each.

### 6. Sampling Method:

Simple random sampling method was used selection of patients & survey method was used for *Medosara* person.

### 7. Diagnostic criteria:

A Special proforma was prepared including sign & symptoms of *Medovriddhi*. Every patient was subjected to physical examinations. Patients of *Medovriddhi* were only enrolled. As per characteristics features of *Medosaar* person described in Ayurvedic classics was collected & prepared proforma accordingly person was selected.

### 8. Inclusion criteria

- 1) 30 individuals each of *Medosara* & *Medovriddhi*.
- 2) Both male & female
- 3) Age between 20 & 30 years.

- 4) Only *uttam sarata* of *Medodhatu* individuals

### 9. Exclusion Criteria

#### 1) *Medosara*

*Hina* & *madhyam sarata* of *Medodhatu* person were excluded.

#### 2) *Medovriddhi*

- a) Patients of *medovriddhi* were excluded those having any endocrinal abnormality which is or appear to be causative factor for obesity
- b) Congestive Cardiac Failure.
- c) Nephrotic Syndrome
- d) Acute or Chronic Renal Failure
- e) Major Depression
- f) Diabetes Mellitus
- g) Familial or hereditary dyslipidemia and/or hypercholesteremia
- h) Those who were on steroid therapy for any reason.

### Methodology:

As per inclusion criteria, patients of *Medovriddhi* & *Medosara* persons were enrolled. Lipid profile was carried out of both subjects. Comparison was carried out on the basis of values of lipid profile.

### 10. Ethical consideration.

An ethical clearance was obtained from Institutional Ethical Committee (IEC) of admitted college. Written informed consent will also be sought from individual study participant explaining essential components of confidentiality, privacy, voluntary participation etc.

#### 11. Criteria of withdrawal:

Not willing to continue.

#### 12. Time and duration of study:

The total study period was from 2007 to 2009.

#### 13. Technique of data collection:

Data was collected as per pre-designed, pre-tested and structured questionnaire as per the study objectives.

#### 14. Data analysis:

Data was analysed by patients baseline characteristics (age, sex, socioeconomic status, marital status), For comparison unpaired “t” test was applied.

### OBSERVATION

#### 1) Comparison of Medosara and Medovriddhi group with respect to T.G.

T.G. (in mg/dl)	Medosara	Medovriddhi	Total
40 - 160	25 (83.33%)	29 (96.66%)	54
160 – 220	05 (16.67%)	00	05
220 – 280	00	01 (3.34%)	01
> 280	00	00	00
Total	30	30	60

The table above shows that high incidence of TG (40 – 160 mg/dl) in both condition i.e. (83.33%) in Medosara and 96.66% in Medovriddhi.)

Parameter	Medosara	Medovriddhi
—		
X	122.56	108.54
S.D.	36.87	35.53
S.E.	6.73	6.48

$$t = 1.4996 \quad P > 0.05$$

Table above shows that there is no difference between in the levels of T.G. in both study groups.

#### 2) Comparison between Medosara and Medovriddhi with respect to T.C.

T.C. (in mg/dl)	Medosara	Medovriddhi	Total
Upto 180	27 (90%)	20 (66.67%)	47
180 – 220	03 (10%)	09 (30.00%)	12
220 – 280	00	00	00
> 280	00	01 (03.34%)	01
Total	30	30	60

As far as, quantitative analysis is concerned, 90% Medosara subjects were having total cholesterol below 180 mg/dl. Very few of them were found to have total cholesterol more than 180 mg/dl. There was not a single subject who has total cholesterol above 220 mg/dl. In Medovriddhi group,

almost two third patients recorded this level upto 180 mg/dl. One third have gone over 180 mg/dl. One patient showed the level crossing 280 mg/dl.

Table above shows that high incidence of total cholesterol in (upto 180) level i.e. 90% in Medosara and 66.67% in Medovriddhi.

Parameter	Medosara	Medovriddhi
—		
X	150.11	171.65
S.D.	16.41	32.09
S.E.	2.99	5.85

$t = 3.2722$ ,  $P < 0.05$

As  $P$  is less than 0.05, it is significant. Therefore there is difference between Medosara and Medovriddhi with respect to total cholesterol.

### 3) Comparison between Medosara and Medovriddhi with respect to HDL.

HDL	Medosara	Medovriddhi	Total
> 60	22 (73.32%)	00	22
45 – 60	04 (13.34%)	09 (10%)	13
30 – 45	04 (13.34%)	21 (90%)	25
< 30	00	00	00
Total	30	30	60

Table above shows that, high incidence was found in Medosara in grade I ( $> 60$  mg/dl) i.e. 73.32% while in Medovriddhi it was found in grade III (30 – 45 mg/dl) i.e. 90%.

Parameter	Medosara	Medovriddhi
—		
X	63.43	41.04
S.D.	12.46	6.77
S.E.	1.23	6.77

$t = 8.6305$   $P < 0.001$

As  $P$  is  $< 0.001$ ; it is highly significant. This shows that there is difference between Medosara and Medovriddhi with respect to HDL.

### 4) Comparison between Medosara and Medovriddhi with respect to LDL.

LDL	Medosara	Medovriddhi	Total
Upto > 60	22 (73.34%)	01 (03.33%)	23
70 – 100	07 (23.33%)	01 (03.33%)	23
100 – 130	01 (03.33%)	16 (53.34%)	17
> 130	00	06 (20%)	06
Total	30	30	60

Table above shows that high incidence of LDL was found in Medosara in first grade i.e. upto 70 mg/dl (73.34%) and that in Medovriddhi it was found in 'III'; (i.e. in 100 – 130 mg/dl, i.e. 53.34%).

Parameter	Medosara	Medovriddhi
—		
X	62.07	109.12
S.D.	19.06	26.77
S.E.	3.48	4.88

t = 7.804; P < 0.001

As P value is less than 0.001. It is highly significant. So there is difference between Medosara and Medovriddhi with respect to LDL.

## DISCUSSION

*Sarata* and *vriddhi*, these two concepts are unique to *ayurveda*. Though the terms like 'increase and hypertrophy' can be used for *vriddhi* and 'excellency of the *dhatu*' can be used for the *sarata*. These terms hardly illuminate the true meanings of *sarata* and *vriddhi*. Only those who have studied *ayurveda* and have learnt its philosophy can understand this and at the same time they may not be able to express it and to make it simple for the person who has studied other streams of Medicine, especially modern Medicine.

In today's era of evidence based Medicine and growing popularity of *ayurveda* globally, the need is felt to provide modern parameters for everything we study.

*Dosha*, *dhatu* and *mala* are no exception to this. The sincere and honest efforts have been made in this present study to find one such parameter for differentiation of *medovriddhi* and *medosarata* and to guess whether it has some co-relation with the presence or absence of these two different conditions. The conditions which have 'one *dhatu* common as their root'.

The clinical scenario of *medovriddhi* and obesity in modern Medicine and *ayurvedic* text is almost same. However, the *medosarata* in *ayurveda* cannot be seen anywhere in modern Medicine. It was considered that some parameters may be found common to both for *medovriddhi* and obesity. The parameter representing *meda* in body can also be analyzed to see whether it has some relation with *medosarata* also; so that we can distinguish *medovriddhi* from *medosarata*, by using this parameter. For this purpose, total cholesterol was selected. This cholesterol is synthesized from multiple molecules of acetyl co-A. These molecules will keep on synthesizing cholesterol which will get accumulated in excess quantity in body. The same may cause problems to health. *Ayurveda* explains this is the same manner describing the under-utilization of energy leading to *medovriddhi*. Therefore there is scope to put these two things in the same compartment.

## CONCLUSION

### Conceptual Study:

- The concepts of *sarata* and *vriddhi* are well studied by *Acharyas* in detail. The features are categorically



explained; especially for *saratva*, which can be divided into physical, physiological and psycho-spiritual features.<sup>[2]</sup>

- *Dhatu Vriddhi* causes increase in the bulk of tissues and at the same time decreasing the functional capacity of that particular *dhatu*. At the same time, it may jeopardize the nourishment and growth of further *dhatu*.
- The *agni* plays pivotal role in metabolism of all *dhatu*s in body. This stimulates the metabolic machinery which consumes substrate. The majority of these are provided by *medodhatu* after *rasa dhatu*.
- *Meda* usually is in a relatively solid state in body but still keep circulating. This has *Parthivata* which can be turned into a *Jaliyatva* as and when required. The same is found when triglycerides stored in adipose tissue are split in fatty acids and glycerol.<sup>[3]</sup>

### Experimental Study:

- 30 subjects were selected for each group, i.e. *medovriddhi* and *medosarata*. The target age group was from 20 years to 30 years. While analyzing the symptoms in *medosara* group, it was observed that these people have almost all cardinal features of full grown and physiologically strong *medodhatu*. This is likely due to *Purnatva* of *dhatu-nirmiti*.

- *Medovriddhi* people showed more prominence in terms of structural variations and had shown fewer alterations in terms of functional impact. This is probably due to *tarunavashta*. The symptoms worsen with the advancing age.
- In my sample majority of *medovriddhi* subjects were from higher socio-economic classes. This suggests that there is strong link between the causative factors (over nutrition and sedentary life style) and *medovriddhi* (obesity).<sup>[4]</sup> There was no such link found between the *sarata* and socio-economic status in sample studied.
- HDL – High density lipoprotein is referred as the “Good Cholesterol” because it carries cholesterol and phospholipids from tissue and organs back to liver for degradation and elimination. It prevents the deposition of cholesterol on the walls of arteries by carrying cholesterol away from arteries to liver. High level of HDL is good indicator of healthy heart because it reduces the blood cholesterol level.<sup>[5]</sup> *Medosara* people have shown statistically rising HDL which is popularly known as good cholesterol.
- Low density lipoproteins: It is considered as “Bad cholesterol” because it carries cholesterol and phospholipids from liver to different areas of body viz. muscle, other tissue and organ such as heart. It is responsible for deposition of cholesterol on wall of arteries causing

atherosclerosis. High level of LDL increases the risk of heart disease. <sup>[6]</sup> *Medovriddhi* people have shown statistically significant rise in LDL, which is popularly known as “bad cholesterol”.

### Clinical Study:

- Abnormal accumulation of *meda dhatu* in body is known as *medodushti*. *Medovriddhi*, if not treated, advances to and invites the diseases by causing *strotorodha*. *Vyan Vayu* needs enough space for helping the substances reach to every cell and tissue of body. <sup>[7]</sup> The accumulation of *meda* in *strotas* hampers the nourishment of further *dhatu*s like *asthi*, *majja* and *shukra*. This is why these people are prone to develop coronary artery disease (because of atherosclerosis), hypertension (due to increased peripheral resistance), diabetes, neuropathy, osteoporosis and impotence. <sup>[8]</sup>

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