

**DESCRIPTIVE STUDY OF ASSOCIATION BETWEEN  
LAKSHANAS OF MEDASARATA WITH LDL, HDL LEVELS OF  
CHOLESTEROL**

**1. Dr.Pragati Vilasrao Patil,**

Reader, Rognidan Department, Sai Ayurved College and Research  
Centre, Sasure-Vairag, Tal.Barshi, Dist. Solapur.

**2. Dr.Raviteja Mane**

Assistant Professor, Dept. of Rognidan, Ayurved College,Mayani

**ABSTRACT:**

Pathological investigations supporting to the clinical diagnosis are of utmost importance in this modern era. These investigations not only support the clinical diagnosis but also useful to decide line of treatment and evaluate prognosis of the disease. Our acharyas have mentioned dhatusarata and its laxanas. In the view of pathophysiological aspect of medodhatu and its sara laxane effort have been made to find out the whether there is any relation between HDL LEVEL,LDL LEVEL and Medodhatu Sarata.

Key Words- HDL, LDL, Medodathu Sarata

## **INTRODUCTION:**

Health of an individual means having equilibrium of Dosha, Dhatu and Mala. Dhatu Sarata is one of the most important criteria to evaluate health of a person. Sara is vishudhatara avastha of Dhatus in the body, means that Dhatu is of excellent quality. [1, 9] .

There may be Sarata of one or many Dhatus. Dhatu Sarata can be changed throughout the life due to physiological changes or various diseases occur in their life. There are seven Dhatus described in Ayurveda. Each Dhatu have a Sarata i.e. Rasasara, Raktasara, Maumsasara, Medosara, Asthisara, Majjasara and Shukrasara. Ojasara is Sara of Saptadhatus. Charakacharya explained DhatuSarata in Dashavidhparikshana i.e. Prakriti (constitution), Vikriti (morbidity), Sara (excellence of dhatus), Samhanana (composition of body), Pramana (proportion of body), Satmya (suitability), Satva (psychic conditions), Ahara shakti (power of intake and digestion of food), Vyayama shakti (power of physical exertion or work) and Vaya (age) to ascertain his strength and the intensity of the morbidity.[1,14,15.]

A person having Sarata of any Dhatu has a strong ability to defense the disease occurred of that Dhatu i.e. Rasasara Purush has a strong defense against Rasaj Vyadhi, Raktasar Purush has a strong defense against Raktaj Vyadhi, and so on.similarly Medasara Purush has a strong defense against Medovyadhi. 4 Varna (Complexion), Swara (Voice), Netra (Eyes), Kesha (Scalphairs), Loma (Skinhairs), Nakha (Nails), Dant (Dentures), Aaushta (Lips), Mutra (Urine), Purish (Stool) of Medasara person are unctuous i.e. smooth or smug or Snigdha.

On account of this Sara, they enjoy wealth, luxury, happiness, pleasure, charity, simplicity and delicacy in action and treatment. Medasara Pariksha involves interrogation of above mental characteristics as well as inspection of body characters. [10,11,12,13]. Lipid Profile is a panel of blood test that serves as an initial broad medical screening tool for abnormalities in lipid such as, HDL cholesterol, LDL cholesterol etc. HDL makes reverse cholesterol transport that it promotes the uptake of cholesterol from tissue including the vascular wall and return the cholesterol to the liver where it is excreted. Hence HDL cholesterol called as good type of cholesterol.

The risk of coronary artery disease increases by decrease level of HDL. Whereas LDL cholesterol directly involved in atherosclerotic process. Increase level of LDL will increases the risk of coronary artery disease. Hence LDL cholesterol called as bad type of cholesterol. [23,24.] Medasara is a normal physic of a person. Medadhatu can be correlated with lipid of body. So here effort have been made to observe correlation between HDL CHOLESTEROL LEVEL ,LDL CHOLESTEROL LEVEL and Medodhatu sarata.

**AIM:**

To study the correlation between Lakshanas of Medasarata and HDL CHOLESTEROL LEVEL AND LDL CHOLESTEROL LEVEL.

**OBJECTIVES:**

1. To study the lakshanas of Medasarata in individuals.
2. To study the HDL and LDL cholesterol level in Medasara individuals.

**MATERIALS:**

1. A special case paper proforma, Questionnaire with written informed consent was taken.
2. HDL AND LDL TESTING KIT.
3. 30 individuals having the lakshanas of Medasrata irrespective of ages, religion, educational and socioeconomical status

**METHODOLOGY:**

By taking Written consent of all patient i ,Case Records and Questionare Record of all the patients were documented. Lakshanas of Medasara individuals mentioned in the classical text considered for the criteria for assessment. The laboratory investigation i.e. HDL AND LDL done as per given guidelines. The value of HDL, LDL, taken into consideration for observations and evaluation.

**Inclusion Criteria:**

1. Individuals in the age group of 25 to 45 yrs of age irrespective of sex, marital and socioeconomic status.
2. Individuals with Medasara lakshanas
3. Co-operative patient.

**Exclusion Criteria:**

1. Age below 25 and above 45 yrs of age.
2. Individuals with systemic disorders.
3. Non-co-operative patients.

**QUESTIONNAIRE OF PHYSIOLOGICAL AND PHYSIO-PSYCHOLOGICAL  
CHARACTERISTICS OF MEDA SARA PURUSHA:**

1. If the appearance of complexion is excessive sliminess or not?
2. If the voice is melodious or not?
3. If the appearance of eyes are pleasing or not?
4. If the hairs of the head is abundant and unctuous or not?
5. If the body hairs are slimy or not?
6. If the nails are slimy or not?
7. If the teeth are slimy or not?
8. If the lips are slimy or not?
9. If the appearance of urine is slimy or not?
10. If the appearance of stool is slimy or not?
11. If the appearance of sweat is slimy or not?
12. If the plumpness (Brihatsharira) of the body is observed or not?
13. If the person is able to tolerate exertion or not?
14. If the habits of the person are delicate or rough?

**CRITERIA FOR ASSESMENT:**

**MEDASARA PURUSH ASSESSMENT:**

Sr. No.	Lakshanas	Smooth (Snigdha)
1	Verna(Complexion )	Y/N
2	Swara(Voice)	Y/N
3	Netra(Eyes)	Y/N
4	Kesha(Hairs on scalp)	Y/N
5	Loma (Hairs on skin)	Y/N
6	Nakha( Nails)	Y/N
7	Dant(Teeth)	Y/N
8	Aushtha(Lips)	Y/N
9	Mutra(Urine)	Y/N
10	Purisha(Stool)	Y/N

**HDL LEVEL AND LDL LEVEL**

Sr No	TEST	NORMAL VALUES	OBSERVED VALUES
1	HDL CHOLESTEROL	30 -60 mg/dl	
2	LDL CHOLESTEROL	Upto 140 mg/dl	

## **REVIEW OF LITERATURE:**

Charaka described ten factors, namely Prakriti (constitution), Vikriti (morbidity), Sara (excellence of dhatus), Samhanana (composition), Pramana (proportion of body), Satmya (suitability), Satva (psychic conditions), Ahara shakti (power of intake and digestion of food), Vyayama shakti (power of physical exertion or work) and Vaya (age) to ascertain his strength and the intensity of the morbidity. [2]

Sushruta described twelve tools (Dwadashavidha Pariksha) namely Ayush (lifespan), Vyadhi (disease), Ritu (season), Agni (digestive power), Vaya (age), Deha (body build), Bala (strength), Satva (mind), Satmya (habituations/ accustoms), Prakriti (constitution), Bhesaja (drug) and Desha (habitat), which should be examined to ascertain the Rogibala (strength of the patient) and Rogabala (strength of the disease). [3] The main purpose of Sara assessment is to assess the strength of the individual and accordingly one should plan the line of treatment.

One should not prescribe stronger medicaments to women, children, geriatric group and patient having less strength i.e. if the Rogi Bala is good and if he is suffering from severe morbidity, then such patient should be treated with Samshodhana (purificatory procedures) followed by Samshamana therapy (palliative therapy). Considering the tools described by Charaka and Sushruta, one should advocate the medicine to get beneficial consequences. Both Acharyas gave emphasis to Sara Pariksha because external appearance of stoutness (fatty) and sturdiness (solid) may at times be deceptive.

Whereas some people appear to be lean and emaciated may actually be strong from within, those looking hale and vigorous may be disease prone due to inherent weakness in their Dhatu composition. Besides this, there is much more basis to classify the individuals, among them Sara is most important. In Ayurveda, the field of action in treatment is regarded the patient and a great stress has been laid on the proper and systemic examination of the person. Examination of a person is for the sake of knowledge of his lifespan or measure of his strength or the interesting of morbidity.

## **REVIEW OF SARA:**

### **Derivation**

The term “Sara” is derived from the root Sthire with Suffix Ghan meaning essential, most excellent, best, true, strong, genuine and vigorous. Etymology It can be defined as “Stiryate sthiribhavati yatra tatra Sarah,” i.e. the thing which becomes stable is called Sara. Amarakosha has put two meanings of term Sara namely Bala (strength or resistance to disease) and Sthiransha (part of stability). Chakrapani has mentioned Sara as the purest form of Dhatu. [4,5] Sir Monir Williams has also described the meaning of 10 Sara as the essence or excellent part of anything, best part and quintessence.

It is reasonably evident from the Chakrapani’s view that Sara concept is associated with the Dhatu concept. Each individual is composed of seven Dhatus (elementary tissue) in homeostasis state. However, it is established that the person differs very much from each other at the level of the purest form of Dhatus because it varies from individual to individual accordingly the person is prone to develop or prevent the capacity to develop certain diseases. Hence individuals on the basis of Sara have been classified into various categories depending on the predominance of particular Dhatu in the body in the form of their purest form and Satva. Sara indicates observation of the preponderance of Satvik quality characteristic properties in the body

Importance of Sara It is remarkable that Ayurvedic acharyas have demonstrated Sara for the assessment of Bala and Ayu of the patient. Bala means biological strength or power of resistance against the diseases; it can be linked with the immunity of the individual. As the predominance of particular Dhatu, the number of Dhatu Sara present in the body of an individual will be directly proportional to the power of resistance of an individual. That is why Sarva Sara individual has relatively higher resistance in comparison to Madhyama and Avara Sara individuals. The person possessing all the Sara, but predominating in one will possess more resistance against the diseases that may arise due to its absence. It can be recognized that the person of particular Sara will have

more resistance against 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

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rapid healing of wounds. Charaka has emphasized that, sometimes the physicians may take a wrong decision only by seeing the body of the patient such as strong because of being corpulent, weak because of leanness and very weak because of possessing small body. However rationally, it is observed that some persons possess small body and leanness, but they are strong. They are like ants, that have small body and look emaciated but can carry heavy load. Big and corpulent persons may have less strength than the lean and short body person's i.e. An elephant having big and corpulent body possessing less strength than the lean and short bodies lion. [7,8]

## **REVIEW OF MEDADHATU:**

### **Vivechana of Meda Dhatu:**

Meda is called as Snehatmak Dhatu.

### **Sthana:**

According to Sushruta, MulaSthana of Medovaha Strotas are Kati, Vrikka [16] and according to Charaka, MulaSthana of Medovahastrotas are Vrikka and Vapavahanam. [17]

**Meda Parimana:** As per Charaka it is two Anjali in Pramana. [18]

### **Meda Ashrayashrayeebhav:**

Ashrayashrayeebhava means Dhatu which is a shelter for any Dosha having similar nature. Meda Dhatu taken as a shelter of Kapha Dosha hence vitiation of KaphaDosha plays an important role in Kaphadushti.

### **Medovaha Strotas dusthi Lakshana :**

As per Charaka, Purvarupa of Prameha included under Medovaha Strotodusthi Lakshana.

As per Sushruta Sweda, SnigdhaAngata, TaluShosha, Pipasa, Shopha, Sthulata are Medovaha Strotadusthi Lakshana. [19]

### **Meda Dhatu Vridhhi Lakshana:**

As per Sushruta due to deposition of Meda Dhatu symptoms produced are Udara Vriddhi, Shwas, Kasa and Dourgandhya of body. [20] : As per Sushruta, due to decrease in Meda Dhatu symptoms produced are spleen enlargement and craving of fatty meat. [21]



### **REVIEW OF MEDASARA PURUSHA:**

Examination of Sara is done to determine the strength of a person.[6] The features of Medasara Purush, according to Acharya Charak as explained in Rogabhishagjitiya adhyaya, chapter 8 in vimanasthana, is that the person's Varna (Complexion), Swara (Voice), Netra (Eyes), Kesha ( hairs on scalp ), Loma ( hairs on body), Nakha (Nails), Dant (Teeth), Austha (Lips), Mutra (Urine) and Purisha (stool) are Snigdha. [9]

The person is hedonistic, generous, fragile and helpful and are endowed with wealth, power, happiness, cheerful desposition, clarity, simplicity and dedicated habbits. [7,10,11] Sushruta in Aaturopakramaniya adhyaya of Sutra Sthana says that the Medasara Purush has Snigdhata in urine, sweat and voice. He has a large body and unable to perform hard work. [22] Snigdhata is one such subjective parameter mentioned in Medasara lakshana which can be used to assess the same. Snigdhata refers to Sneha / Aruksha / Chikana / Masruna and oily and is the contribution of Jal Mhabhuta. It promotes luster to Varna, Swara, Netra, Kesha, Loma, Nakha, Danta, Austha, Mutra, Purisha and Sweda

Medasara Purush has melodious voice, so they can be singers, broadcasters. These people have unctuous voice and look, so they can work as anchor persons. These people love sedentary life style and like to enjoy life. They are unable to bear exertion; they love luxury so they can be good hoteliers, luxury store owners. They have a taste of what is best suited so they can be good fashion critics. [25]

### **REVIEW OF LIPID PROFILE:**

Lipids are organic compounds, soluble in organic solvent and poorly soluble in water. Lipids are insoluble in plasma and are therefore, transported in circulation in association with proteins. These complexes of lipids and proteins are known as lipoproteins. Lipids disorders are common in clinical practice and some of them are associated with a increased risk of atherosclerotic cardiovascular disease. Cardiovascular disease is a major cause of mortality in person under the age of 60 and proper management of lipid abnormalities significantly reduced this risk. Disorders

of lipoprotein metabolism are called dyslipidemias. [27] The two major lipids in blood are cholesterol and triglycerides. Since they are insoluble in water, they are carried by lipoproteins.

### **1. Serum Cholesterol :**

Cholesterol is an essential component of the cell membranes and is necessary for synthesis of steroid hormones and for the formation of bile acids. Cholesterol is synthesized by liver and many other organs and is also ingested in the diet. Total cholesterol represents the sum of various ways in which cholesterol is transported in plasma and includes HDL and LDL cholesterol. Thus raised LDL cholesterol is associated with increased risk of coronary artery disease, while raised HDL cholesterol is associated with reduced risk of coronary artery disease. Total cholesterol level is also affected by diet, exercise, age, sex and race. It has been demonstrated that the incidence of coronary artery disease directly correlates with the level of serum cholesterol, even in the reference range. Therefore normal level may not imply health without increased risk of disease. It is thus appropriate to use desirable concentration. [26,27]

### **2. Serum Triglyceride :**

Triglycerides are lipids in which three long chain fatty acids are attached to glycerol. Triglycerides serve as a source of energy that can be stored as fat in adipose tissue or used as fuel by muscle and other tissues. They are present in dietary fat and also synthesized by liver. Elevated level of triglycerides is a risk factor for coronary artery disease, but whether lowering of serum triglyceride level decreases risk of coronary artery disease is unclear. [26,27]

### **3. HDL Cholesterol :**

High density lipoprotein binds to peripheral tissue that has apolipoprotein A receptors and takes up cholesterol. HDL transport cholesterol is either taken up by the liver or is incorporated into IDL to form LDL. A low level of HDL is a major risk factor for coronary artery disease. HDL contains 20%-30% of total serum cholesterol. Low HDL cholesterol is a significant risk factor for coronary artery disease even if total cholesterol is normal. HDL is involved in reverse cholesterol transport of cholesterol i.e. from peripheral tissues to the liver where it is excreted in bile and thus increases cholesterol not accumulated in

blood vessel walls. Therefore it is called as cardioprotective cholesterol. Concentration of HDL cholesterol is inversely related with the risk of atherosclerotic coronary artery disease. HDL cholesterol 60 mg/dl is cardioprotective. [26,27]

#### 4. **LDL Cholesterol :**

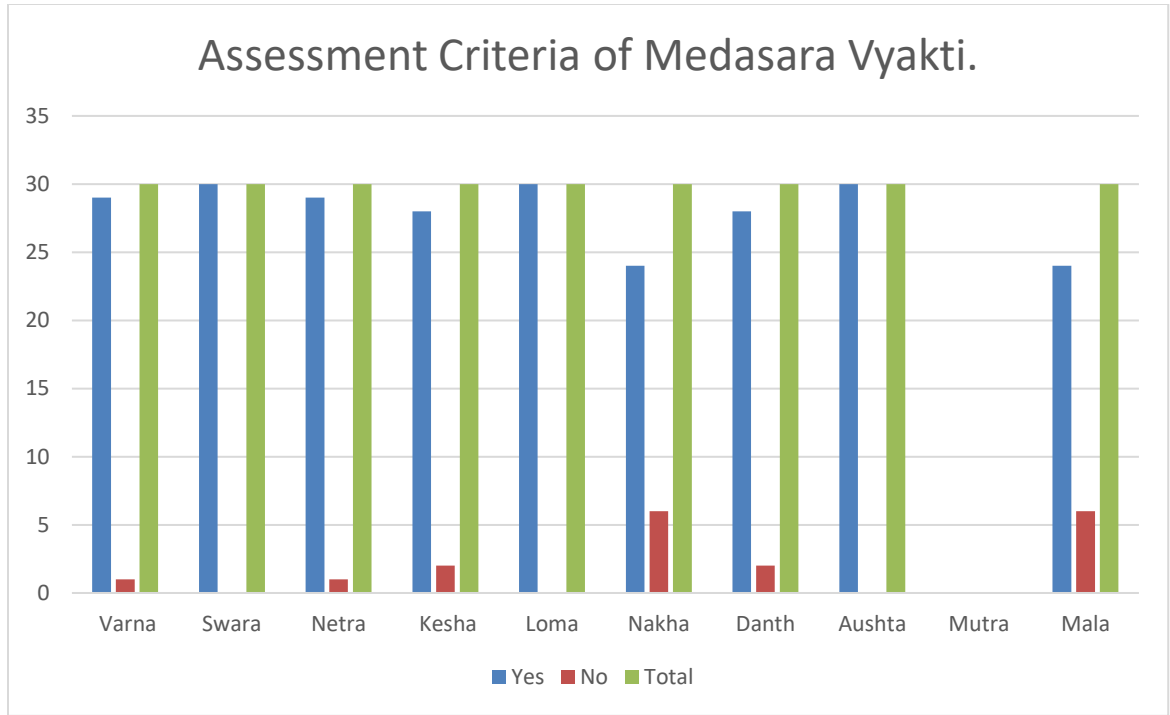
Low density lipoprotein (LDL) is the major carrier lipoprotein for cholesterol from liver to the peripheral tissues. It is formed from VLDL. LDL plays a major role in the genesis of atherosclerosis and elevation of LDL is a major risk factor for coronary artery disease. LDL is taken up by the cells through the LDL receptor, a glycoprotein. The LDL receptor is present on the surface of LDL particle. After internalization of LDL particle, the lipoprotein is catabolised and the receptor is recycled back to the cell surface. Intracellularly, LDL is degraded to free cholesterol that is needed for cellular needs. The level of LDL in circulation is determined by number and function of LDL receptors. LDL cholesterol contains about 60% of total serum cholesterol. High LDL cholesterol is a strong risk factor for atherosclerotic heart disease and is the major atherogenic lipoprotein. It is the primary lipoprotein that mediates atherosclerotic heart disease and is the primary target of lipid lowering therapy. High LDL levels are associated with obesity, high carbohydrate intake, diabetes mellitus, lack of exercise, smoking and some drugs. Intensive therapy to lower LDL cholesterol slows the progression of atherosclerosis, reduces coronary events and decreases mortality. [26,27] Lipid Profile is a panel of blood test that serves as an initial broad medical screening tool for abnormalities in lipid such as HDL cholesterol, LDL cholesterol, Total cholesterol and Triglycerides. HDL makes reverse cholesterol transport that it promotes the uptake of cholesterol from tissue including the vascular wall and return the cholesterol to the liver where it is excreted. Hence HDL cholesterol called as good type of cholesterol. The risk of coronary artery disease increases by decrease level of HDL. Whereas LDL cholesterol directly involved in atherosclerotic process. Increase level of LDL will increases the risk of coronary artery disease. Hence LDL cholesterol called as bad type of cholesterol.

**OBSERVATIONS:**

**Table No 1 :Assessment Criteria of Medasara Vyakti.**

Assessment Criteria	Yes	No	Total
Varna	29	1	30
Swara	30	0	30
Netra	29	1	30
Kesha	28	2	30
Loma	30	0	30
Nakha	24	6	30
Danth	28	2	30
Aushta	30	0	30
Mutra	0	0	0
Purisha	24	6	30

Here it was observed that all the laxanas of medasarata were seen in more than 24 individuals out of 30 but only mutra snigdhatata was not been identified in any individual.



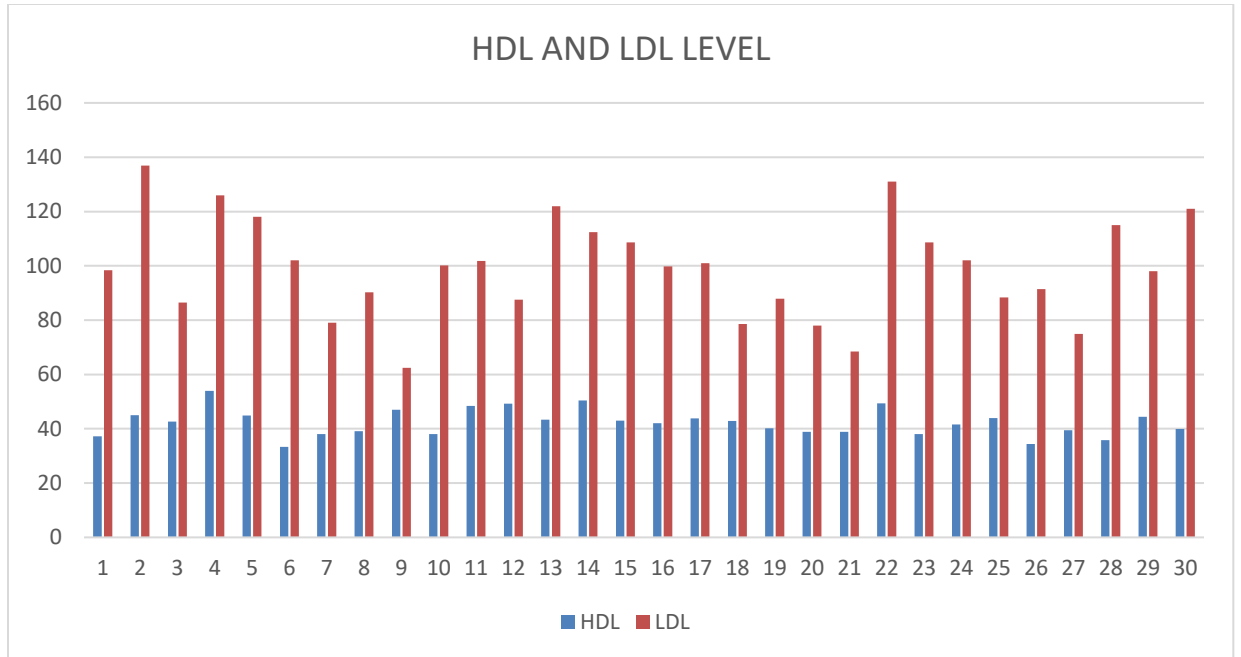
**Table 2 HDL CHOLESTEROL LEVEL AND LDL CHOLESTEROL LEVEL**

Individual Sr.No	HDL LEVEL	LDL LEVEL
1	37.2	98.4
2	45	136.9
3	42.6	86.5
4	54	126
5	44.9	118.1
6	33.3	102
7	38	79
8	39.1	90.2
9	47	62.4
10	38.1	100.2
11	48.4	101.8

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Of Medasarata With Ldl, Hdl Levels Of Cholesterol*

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12	49.2	87.5
13	43.3	122
14	50.4	112.4
15	43	108.6
16	42	99.8
17	43.8	101
18	42.9	78.6
19	40.2	87.9
20	38.9	78
21	38.9	68.4
22	49.4	131
23	38.1	108.6
24	41.6	102
25	43.9	88.4
26	34.4	91.4
27	39.5	74.9
28	35.8	115
29	44.4	98.0
30	39.9	121



Above data shows that HDL Cholesterol And LDL Cholesterol level of all the 30 individuals are seen in normal range.HDL range between 33.3mg/dl to 50.4mg/dl where as LDL range between 62.4mg/dl to 136.9mg/dl.

#### **CONCLUSION:**

1. All the laxanas except mutra snighata of medodhatu sarata are seen in the individuals.
2. Swara,Loma and Netra Snigdhata are seen in all the individuals.
3. Medodhatu sara individuals have HDL and LDL cholesterol levels in normal range.
4. Normal range of HDL and LDL level are supportive to evaluate medasarata.

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