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MEDOSARA IN CONTEXT TO THYROID DYSFUNCTION

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ABSTRACT

Introduction*Sara* is the essence of *Dhatus* hence called '*Vishuddhataro Dhatu*', which provides strength and stability to the body. *Sarata* delivers information about the condition of different *Dhatu*and also gives an idea of the status of *Satva* of an individual. It can be predicted that the person of particular *Sara* will have more resistance to the diseases produced by the particular *Dhatu*. *Medosara* is one among the *Ashtavidha Saras*. Individuals having *Medosarata* are characterized by an abundance of unctuousness in complexion, voice, eyes, hairs, and also other parts like nails, teeth, urine, stool, etc.Moreover, they also possess wealth, power, happiness, enjoyment, charity, simplicity, and delicate habits. The serum lipid profile is one of the best objective parameters for the assessment of *Medosarata*. People having *PravaraMedosarata* shows a high level of good cholesterol HDL and low level of LDL and VLDL which are considered as bad cholesterol. Today's hectic lifestyle pattern badly affects serum lipid profile with a decrease in HDL and an increase in LDL and VLDL. It is a risk factor for many lifestyle disorders like thyroid dysfunction. **Methodology –** The literature of *Ayurveda* and modern research evidence was reviewed with special reference to *Medosarata* and its practical relevance in thyroid dysfunction. **Result –** This article is an effort to establish an association between *Medosarata* and thyroid dysfunction. **Discussion** – An underactive thyroid means that the body removes less LDL cholesterol from the blood. That can lead to high levels of LDL and total cholesterol and thus can be correlated with *AvaraMedosarata* due to the presence of characteristic features like dry skin and hair, thin, brittle fingernails, constipation, fatigue, etc. An overactive thyroid can have the opposite effect and cause a low level of cholesterol in the blood. Low cholesterol may lead to adverse health condi-

tions. So,it can be said that thyroid dysfunction and *Medosarata* are closely associated. Individuals having *AvaraMedosarata* are advised to make dietary & lifestyle modifications to transverse *Avara*and *MadhyamMedosarata* into *PravaraMedosarata* and thus correct thyroid dysfunction.

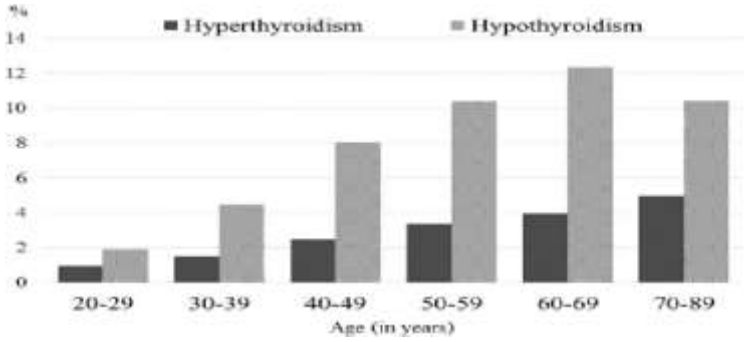
Keywords: Cholesterol, *Medosarata*, Thyroid dysfunction

INTRODUCTION

Ayurveda is one of the greatest gifts given by the sages of ancient India to mankind. It is the "Science of life and longevity" based on sound principles of diagnosis which requires no clinical or costly investigations which are beyond the reach of common people. *Sara* is one such unique concept illuminated in *Ayurveda* which provides an idea about the condition of different *Dhatu* in the body.*Sara* can be defined as the essence of *Dhatus* (Tissue) that provides strength and stability to the body. It can be predicted that the person of particular *Sara* will have more resistance to the diseases produced by the particular *Dhatu*. *Dhatu Sarata* is the reflection of *Dhatu Sara* in the form of structure and functions. From birth to death, the genetic design of *Tridosha*, i.e. *Prakriti* never changes, but opposite to *Prakriti*, *Sarata* of *Dhatu* can be changed every moment. Variations in food, habitat, season, and lifestyle can modify *the Sarata* of every *Dhatu*. If we are willing for good health, happiness, enjoyment, and longevity then everybody should pay attention to maintaining the equilibrium of root factors of the body (*Dosha, Dhatu*, and *Mala*) and there is the effect of *Sara-Asara* condition of *Dhatu* on physical and mental health [1].

In the *Dashvidhapariksha* of *Ayurveda*, it has been stated that *Sara Pariksha* is one of the important investigations i.e. investigations for strength. There are 8 types of *Sara* - 1. *Twaksara 2. Raktasara 3. Mamsasara 4. Medasara 5. Asthisara 6. Majjasara 7. Shukrasara 8. Sattvasara*. *Medosara* is one among the *Ashtavidha Saras*. Individuals having *Medosarata* are characterized by an abundance of unctuousness in complexion, voice, eyes, hairs, and also other parts like nails, teeth, urine, stool, etc.Moreover, they also possess wealth, power, happiness, enjoyment, charity, simplicity, and delicate habits. The serum lipid profile is one of the best objective parameters for the assessment of *Medosarata*. People having *PravaraMedosarata* shows a high level of good cholesterol HDL and low level of LDL and VLDL which are considered as bad cholesterol [2]. Today's hectic lifestyle pattern badly affects serum lipid profile with a decrease in HDL and an increase in LDL and VLDL. It is a risk factor for many lifestyle disorders like thyroid dysfunction.

Figure 1:Baseline prevalence of self-reported thyroid dysfunction by age group



Source: (Hyperthyroidism, Hypothyroidism and cause-specific mortality in a large cohort of women)

Diseasesof the thyroidglandareamongthemostabundantendocrinedisorders worldwide second to only diabetes & India is no exception. Recent reports show that 300 million people in the world are sufferingfrom thyroid disorders &among them, about 42 million people reside in India [3]. Thyroiddisorders are more common in women with onein every 8women during her lifetime having a risk for thyroid disorders. From the above data, we can conclude that there is an urgent needto prevent and manage thyroid dysfunction. However, the

exact cause is notknown but an unhealthy lifestyle is considered to be the mostsignificant one. *Ayurveda* through itsholisticapproachcanbehelpfulinthemanagementofthyroiddisorders. For this purpose, the tool of *Ayurveda* namely*Medosara-Parikshan*couldbeveryhelpful.

AIM - In the present study, an attempt is made to evaluate the correlation between *Medosarata* and thyroid dysfunction.

METHODOLOGY – The literature of *Ayurveda* and modern research evidence was reviewed with special reference to *Medosarata* and its practical relevance in thyroid dysfunction.

FEATURES OF MEDOSARA

Subjective Parameters

An individual having the excellence of the *Meda Dhatu* are characterized by the abundance of unctuousness in complexion, voice, eyes, hair of the head and other parts of the body, nail, teeth, lips, urine and faeces.

Such Individuals are endowed with wealth, power, happiness, enjoyment, charity, simplicity, and delicate habits. *Medasara* person is known to pass unctuous urine and sweat, has a mellow voice, inspite of a bulky body, they are unable to bear a physical strain [4].

Objective Parameters

To diagnose *Medosarata* serum lipid profile can be performed. Good cholesterol HDL tends to be higher and the bad ones LDL and VLDL tend to be lower. The LDL & HDL reminds the concept of *Abaddha* and *BaddhaMedas* depicted by Charaka in the chapter on Prameha[5].

***MEDASARATA* AND CHOLESTEROL**

Cholesterol is a fatty acid that is a part of circulating lipids in the body. The body needs cholesterol to build cell membranes, vitamin D, hormones, and bile acids and salts. It is obtained both from the diet and produced within the body, mainly in the liver. The body produces most cholesterol naturally, and it is found in some foods. Lipoproteins carry cholesterol in the blood. The two main types that carry cholesterol to and from cells are called low-density lipoproteins (LDL-C) and high-density lipoproteins (HDL-C).

The lower the density of the lipoproteins the more fats it contains. High-density lipoprotein (HDL cholesterol) is called the 'good cholesterol' because it helps to keep cholesterol from building up in the arteries. Low-density lipoprotein (LDL cholesterol) is called the 'bad cholesterol' because it is the main source of cholesterol build-up and blockage in the arteries.

Total cholesterol is a reading of good and bad cholesterol. Triglycerides are another form of fat in the blood that can also raise the risk of heart disease. High triglycerides are often associated with low HDL cholesterol increasing risk, even though total cholesterol levels in the blood appear normal. When there is too much LDL-cholesterol in the blood, it builds up in the walls of the arteries (plaque). Over time, this builds up and causes 'the hardening of the arteries.

Cholesterol is not mentioned as such in the *Ayurvedic* texts. Ancient *Acharyas* talk about ***Meda Dhatu*** (lipid tissue) and explain how to maintain a healthy quantity and quality of this fat or lipid tissue in the body. When *Meda Dhatu* is balanced and healthy, that subsequently helps to maintain balanced cholesterol. For the proper formation of *Medadhatu*, the strength of the digestive fire is needed. When the production of *Meda Dhatu* is disturbed, the quantity (amount and proportion) and quality (contents) of *Medadhatu* are also disturbed, leading to *MedaAsarata*. *PravaraMedosarata* is identified by a high level of good cholesterol HDL and a low level of LDL and VLDL which are considered as bad cholesterol. Changing lifestyle patterns badly affects the serum lipid profile with a decrease in HDL and an increase in LDL and VLDL. It is a risk factor for lifestyle disorders like thyroid dysfunction.

LINKAGE BETWEEN THYROID DYSFUNCTION AND MEDASARATA

Excellent *Medosarata* is characterized by the abundance of unctuousness in complexion, voice, eyes, hair of the head and other parts of the body, nails, teeth, lips, urine and faeces. While in both hypothyroidism and hyperthyroidism, all these features are disturbed.

Table 1: Table showing a comparison between characteristic features of *Medosarata*, Hypothyroidism, and Hyperthyroidism

MEDASARATA= Abundance of Unctuousness	HYPOTHYROIDISM	HYPERTHYROIDISM
Varna	Dry Skin	Warm and moist skin
Swara	Hoarseness	Tremulous skin
Netra	Dull eyes	Protruding eyes
Kesha	Dry hair, loss of a lateral third of eyebrows	Hair loss
Loma	Dry, brittle, coarse	Smooth, thin
Nakha	Brittle nails	Soft nails (Plummer's Nails)
Danta	Compromised periodontal health – delayed bone resorption. Delayed dental eruption	More susceptible to dental cavities, maxillary and mandibular osteoporosis Accelerated dental eruption
Oshtha	Chapped lips	Dry lips in some cases
Mutra	Urinary retention	Frequent urination
Purisha	Constipation	Diarrhoea

LIPID LEVELS IN THYROID DYSFUNCTION

Thyroid dysfunctions are primarily conditions that affect the number of thyroid hormones being produced. Thyroid hormones are involved in the regulation of lipid and lipoprotein metabolism; therefore, thyroid dysfunctions induce a significant change in lipid levels. Excess production leads to hyperthyroidism while diminished production leads to hypothyroidism. Hyperthyroidism is characterized by reduced serum TSH levels despite increased free thyroxine (fT4) and free triiodothyronine (fT3) levels.

Table 2: Table showing Thyroid function test interpretations.

Thyroid Function Test Interpretation			
TSH	Free T4	Free T3	Condition
Normal	Normal	Normal	• None
Low	High	High	• **Hyperthyroidism**
Low	Normal	Normal	• Subclinical hyperthyroidism
Low	Normal	High	• T3 toxicosis
Low	High	Normal	• Thyroiditis • T4 ingestion • Hyperthyroidism in the elderly or with comorbid illness
Low	Low	Low	• Euthyroid sick syndrome • Central hypothyroidism
High	Normal	Normal	• Subclinical hypothyroidism • Recovery from euthyroid sick syndrome
High	Low	Low	• **Primary hypothyroidism**
High	High	High	• TSH producing pituitary adenoma

Hypothyroidism is relatively common and is associated with an unfavorable effect on lipid metabolism. It is characterized by low serum thyroid hormone levels and is associated with reduced metabolism, reduced lipolysis, weight gain, reduced cholesterol clearance, and elevated serum cholesterol. Biochemically decrease in T4 and T3 concentrations lead to hypersecretion of pituitary TSH and an amplified increase in serum TSH levels. It is associated with hypercholesterolemia mainly due to the elevation of Low-Density Lipoprotein (LDL- c) levels, whereas High-Density Lipoprotein (HDL-c) can be normal or elevated. On the other hand, hyperthyroidism is accompanied by a decrease in serum levels of total LDL-c & HDL-c monitoring their elimination [6].

TSH levels	Cases of altered lipid parameters	% Prevalence in total study group(558)	% Prevalence in 68 patients
< 10 mIU/ml	27	4.83	39.7
> 10 mIU/ml	16	2.87	23.52

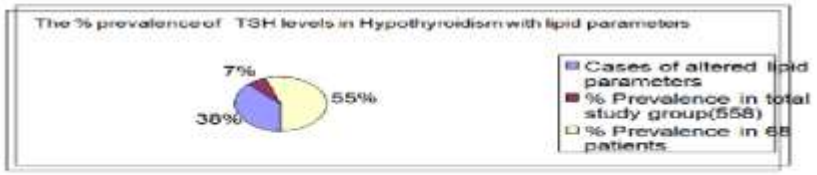


Figure 2. The pie diagram showing % prevalence of TSH levels in Hypothyroidism with lipid parameters

Source: Comparative Study of Hypothyroidism with Cardiometabolic Risk

RESULT

An underactive thyroid means that the body removes less LDL cholesterol from the blood. That can lead to high levels of LDL and total cholesterol and thus can be correlated with *AvaraMedosarata* due to the presence of characteristic features like dry skin and hair, thin, brittle fingernails, constipation, fatigue, etc. An overactive thyroid can have the opposite effect and cause a low level of cholesterol in the blood. Low cholesterol may lead to adverse health conditions. So, it can be said that thyroid dysfunction and *Medosarata* are closely associated. Individuals having *AvaraMedosarata* are advised to make dietary & lifestyle modifications to transverse *Avara*and *MadhyamMedosarata* into *PravaraMedosarata* and thus correct thyroid dysfunction.

DISCUSSION

MedadhatuSarata examination gives us an idea about the qualitative state of *Medadhatu* and *Satva* (mind), it is a subjective type of examination, for quantification of Bala (Strength).Due to improper lifestyle, there is vitiation of *Agni*, leading to *Ama* formation. When *Medadhatu* mixes with *Ama*, it changes the quality of fat tissue. This mix of *Ama* with *Medadhatu* or fat tissue is the main way how we create imbalanced cholesterol. And it is the liver that is responsible for qualitative digestion, i.e., the quality, or purity, of the fat tissue and also the quality of the cholesterol that is being produced[7]. These long-term sequelae result in improper production of enzymes and hormones in the body & ultimately give rise to thyroid dysfunction.Thus, an altered lipid profile is a well-known manifestation of thyroid dysfunction. Both plasma LDL-C and total cholesterol increase in hypothyroidism and decrease in hyperthyroidism. This altered lipid profile finally leads to dyslipidemia which is one of the major risk factors for atherosclerosis and coronary disease. Thus, there is an urgent need for early diagnosis of the quality of *Medadhatu* or cholesterol levels and *MedadhatuSarata* examination can be utilized as the best diagnostic tool.

For the reduction of LDL and increase in HDL or for PravarMedosarata we need strategies for-

- Reducing the contributing factors
- Increase digestive fire (Medoagni)
- Normalize assimilation and elimination aspects of the digestion process.

Some ayurvedic herbs used for managing cholesterol and to produce healthier fat tissue and balance cholesterol production are.

- *Guduchi*
- *Rasona*
- *Triphala*
- *Trikatu*
- *Guggulu*
- *turmeric and*
- *Shilajit.*

Each of these helps with bile secretion and also purifies blood and muscle tissue purifying the building blocks for healthy fat tissue[8].

DIETARY AND LIFESTYLE MODIFICATION FOR EXCELLENT MEDOSARATA

- Avoiding foods with high saturated fats. It will help in reducing the bad cholesterol levels in the blood.
- Restrict consumption of Omega-6 rich oils such as corn oil and safflower oil. Instead, use olive oil, sesame oil, and rapeseed oil that have 'good fat'.

- Yogasanas and Pranayama are recommended, as they help clean the Srotas or channels.
- Practice meditation. It reduces stress and improves mental clarity.
- Discourages sleeping during the day, as this causes the metabolism to slow down.
- Take food after complete digestion of previous food (JeerneBhojana).
- Avoid Adhyasana and Vishamasana.
- Avoid luxurious gadgets for daily work.
- Hot water or steam bath[9]

CONCLUSION

This study concluded that there is an altered lipid profile in thyroid dysfunction. Both plasma LDL-C, and total cholesterol increase in hypothyroidism and decrease in hyperthyroidism. Also, the subjective findings of both hypothyroidism and hyperthyroidism suggest *AvaraMedosarata*.Thus, a *MedadhatuSarata* examination must be done to assess the strength (immunity/fitness) of *Medadhatu*, early diagnosis of improper *Medadhatu* and to give proper treatment for *AsaraMedadhatu* and *Madhya Sara Medadhatu* with proper medications as well as dietary and lifestyle modifications.

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