

## A CLINICAL STUDY ON HYPERLIPIDEMIA WITH MEDOHAR GUGGULU AND LEKHANIYA MAHAKASHAYA

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### ABSTRACT

Hyperlipidemia means abnormally high levels of lipids in the blood. These lipids or fats include cholesterol and triglycerides. It results from abnormalities in lipid metabolism or plasma lipid transport or a disorder in the synthesis and degradation of plasma lipoproteins. Sedentary life style and increased popularity of fast foods are the most contributory factors. More than half of the Coronary Heart Diseases (CHD) are attributable to abnormalities in the levels and metabolism of plasma lipids and lipoproteins. . In India, persons suffering from CHD have increased in last 20 years. It is estimated that there are almost 224 million people with high cholesterol in India. According to WHO, raised serum cholesterol levels is one of the top ten causes of death throughout the world. There are many effective medicines and therapies described in different classics of Ayurveda for treating the hyperlipidemic activity. A clinical study comprising of 25 patients of either sex attending OPD clinic of AMVH Hubli presenting with Hyperlipidemia confirmed by Lipid Profile were treated with Medhohar Guggulu and Lekhaniya Mahakashaya. The results shown were highly significant.

**KEY WORDS:** Hyperlipidemia, MedhoharaGuggulu, LekhaniyaMahakashaya

### INTRODUCTION:

Ayurveda, the ancient science of life is being increasingly accepted by the world at large for its relevance and adoptability to the modern science. As we moved into rapid modernization, the lifestyle of an individual has become sedentary along with lack of exercise and there is increased popularity of fast foods leading to impairment of metabolism in an individual making him prone to series of disorders called as lifestyle disorders. Everybody constituents

have specific proportions and specific functions in the body. They will perform their functions only in their optimal levels. The normal level is maintained by controlling the metabolism. The metabolism is normally regulated by a well-developed controlling system functioning in the healthy body. Healthy state is maintained by keeping the equilibrium of various constituents of the body. Any abnormalities in the controlling system will lead to abnormalities in this equilibrium and thus leads to various diseases.

Hyperlipidemia is one such disorder where there is an abnormally elevated level of any one, or all lipids and lipoproteins in the blood. It is most common form of "dislipidemia". Lipids consist of fats, waxes, sterols, mono-glycerides, phospholipids, and fat-soluble vitamins and minerals. Since lipids are hydrophobic i.e. insoluble in water, these are (e.g. cholesterol) transported in the blood plasma within protein particles (lipoproteins). It is of utmost significance because it leads to atherosclerosis of vessels (arterial walls) leading to vascular accidents like Cerebro vascular or Coronary Artery Diseases. More than half of the Coronary Heart Diseases (CHD) are attributable to abnormalities in the levels and metabolism of plasma lipids and lipoproteins. However, elevated lipoprotein levels in most patients with CHD reflect the adverse impact of sedentary lifestyle, excess body weight, and diets high in total and saturated fat superimposed on a genetic background that confers susceptibility to increased circulating lipids. In India, persons suffering from CHD have increased in last 20 years. In South India CHD incidence is 7% in rural areas and 13% in urban areas. According to WHO, raised serum cholesterol levels is one of the top ten causes of death throughout the world. Several modern drugs are available for the management of Hyperlipidemia where most of them are potentially toxic, costly and are contraindicated in hepatic or renal impairment, gall bladder disease and pregnancy. Atorvastatin is one such a drug of choice which is highly used and recommended in hyperlipidemia. It has shown very good results but

also responsible for many side effects like myositis, joint pain, stomach upset, liver damage and many more. Here, Ayurveda can intervene by modifying the risk factors aiming at the prevention. It can be included under santarpanajanyavyadhi as "**Medoroga**". It is a condition caused by derangement of agni, leads to amara, there is medodhatvagnimandya leading to improper formation of medodhatu in excess and if not arrested further results in sthoulya and other santarpanjanya vyadhi's<sup>1</sup>. Lack of physical exercise and indulging in Kaphavardhaka ahara leads to Medovridhi and hence causes "Medo roga"<sup>2</sup>. The morbid accumulation of kapha and meda tends to get adhered to the vessel wall causing its thickening, tortuosity, stiffness as well as narrowing. This change in the vessel wall is referred as Dhamani pratichaya<sup>3</sup> (thrombosis/atherosclerosis). Thus considering above facts, this study is intended in treating the Hyperlipidemia with Medhohar Guggulu and Lekhaniya Mahakashaya.

#### AIMS AND OBJECTIVES:

1. To study Hyperlipidemia according to Ayurveda and Modern science.
2. To study efficacy of Medhohar Guggulu and Lekhaniya Mahakashaya in Hyperlipidemia

#### MATERIALS AND METHODS:

1. *Trikatu Churna*<sup>4</sup>
2. *Medhohar Guggulu*<sup>5</sup>
3. *Lekhania Mahakashaya*<sup>6</sup>

**STUDY DESIGN:** A minimum of 25 Subjects diagnosed as Hyperlipidemia were selected after fulfillment of inclusion criteria.

Procedure	Drug used	Matra	No. of Days
<i>Ama Pachana</i>	<i>Trikatu Choorna</i>	5 gms BD with warm water before food	3 days (or till niramalakshana seen)
	<i>Lekhania Mahakashaya</i>	30 ml before food	60 days

<i>Samanoushadhi</i>	<i>Medhohar Guggulu</i>	250 mg (2 BD) with lukewarm water after food	60 days
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**Duration-** 2 months - weekly visit

**Follow up-** 1 month - Fortnightly visit

**INCLUSION CRITERIA:**

- Aged between 20-60 yrs.
- Had clinical features of *Medoroga*.
- Both obese and non-obese patients were selected for the study.
- Both the sex (male and female) were selected for the study.
- Subjects having all or at least any one of the lipid profile above normal range were selected for the study.

**EXCLUSION CRITERIA:**

1. Subjects had history of serious cardiac disorders like Myocardial infarction, Cardiac failure, etc.
2. Subjects had any major illness, Hypertension or if the patient was already taking some therapy or recently adjusted therapy.
3. Subjects had history of Thyroid disorder, Renal disorder, Cholelithiasis and PCOS.
4. Subjects with systemic disorders which interfere with the course of treatment.
5. Hyperlipidemia due to Consumption of drugs such as glucocorticoids.
6. Pregnant women and lactating mothers.

**WITHDRAWAL CRITERIA:**

1. If the patients having clinical feature would aggravated into serious condition.
2. If the patient is irregular in the decided course of treatment.

**Intervention**

- *Amapachana with Trikatu Churna 5gm BID* 30 minutes before food with *Ushnodaka as Anupana* till *niramalakshana* seen.
- Subjects were subjected for *ShamanaChikitsa* with *Lekhaniya Mahakashaya* (30ml BID) with water before food for 60 days.
- *Medhohara Guggulu* (250 mg BID) with lukewarm water after food for 60 days.
- *Pathya Aahara and Pathya Vihara* was advised to all the Subjects.

**ASSESSMENT CRITERIA:**

**Subjective parameter**

- *Ashaktahsarvakarmasu* (Difficulty in routine activities)
- *Kshudrashwasa* (Dyspnoea)
- *Utsahahani* (Lethargic)
- *Angagaurava* (Heaviness in body parts)
- *Daurbalya* (Weakness/Decreased physical activity)
- *Swedhadikya* (Increased Perspiration)
- *Trishna* (Increased Thirst)
- *Nidradikya* (Increased Sleep)
- *AlpaMethunah* (Decreased sexual desire)

**Objective parameter**

- Lipid profile before and after treatment.

**Gradation of Clinical feature**

**1-ASHAKTAH SARVAKARMASU:** (Difficulty in routine activities)

Not seen	-	0
Lack of interest in doing activity with feeling of lethargic.	-	1
Lack of interest in doing activity with fatigability.	-	2
Absolutely no interest in doing activity and easy fatigability.	-	3

**2- KSHUDRA SHWASA:** (Dyspnoea)

Dyspnoea after heavy work (movement) but relieved soon and up to tolerance	-	0
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Dyspnoea after little work but relieved later and up to tolerance	-	1
Dyspnoea after little work but relieved later and beyond tolerance	-	2
Dyspnoea in resting condition	-	3

**3- UTSAHA HANI: (Lethargic)**

No lethargy (Doing work satisfactorily with proper vigor in time)	-	0
Doing work at his own with lethargy and late initiation	-	1
Not starting any work on his own responsibility and doing little work very slowly	-	2
Does not take any initiation and not want to work even after pressure	-	3

**4-ANGA GAURAVA: (Heaviness in body parts)**

Not felt	-	0
Feeling heaviness in the body	-	1
Heaviness not pertaining to do more work	-	2
Totally sedentary due to heaviness of body	-	3

**5- DAURBALYA: (Weakness/Decreased physical activity):**

Can do routine exercise	-	0
Can do moderate exercise without difficulty	-	1
Can do mild exercise with very difficulty	-	2
Can not do even mild exercise	-	3

**6- SWEDADIKYA: (Increased Perspiration)**

Sweating after heavy work and fast movement or in hot season	-	0
Profuse sweating after moderate work and movement	-	1
Profuse sweating after little work and movement	-	2
Sweating even at rest or in cold season	-	3

**7- TRISHANA: (Increased Thirst)**

Normal thirst	-	0
Thirsty but relieved after drinking 1-2 liter of water	-	1
Thirsty but not relieved after drinking 1-2 liter of water	-	2
Repeated thirst and not relieved at all	-	3

**8- NIDRADIKYA:( Increased Sleep)**

Normal sleep 6-7 hrs. per day	-	0
Sleeping of up to 8 hours/day with angagaurava	-	1
Sleepy and drowsy even after sleeping for 10 hours/day	-	2
Not satisfied even after sleeping for > 12 hours/day	-	3

**10-ALPA METHUNAH: (Decreased sexual desire)**

Not seen	-	0
Lack of interest but performing sexual activity once in a week	-	1
Lack of interest but performing sexual activity only once in a month	-	2
Totally loss of interest in sexual act.	-	3

**OBSERVATION AND RESULTS:**

PARAMETERS	BT	AT	X	%	SD	SE	t	P	RE-MARK
AshaktahSarvakar-masu	0.56	0.00	0.56	100%	0.71	0.14	3.934	<0.0006	HS

<i>Kshudraswasa</i>	0.48	0.00	0.48	100%	0.58	0.117	4.096	<0.0001	HS
<i>Utsahahani</i>	0.96	0.00	0.96	100%	0.35	0.07	13.66	<0.0001	HS
<i>Angagaurava</i>	1.08	0.00	1.08	100%	0.40	0.08	13.50	<0.0001	HS
<i>Daurbalya</i>	0.44	0.00	0.44	100%	0.58	0.116	3.772	<0.0009	HS
<i>Swedhadikya</i>	0.64	0.16	0.48	75%	0.65	0.130	3.674	<0.001	VS
<i>Trishna</i>	0.80	0.20	0.60	93%	0.57	0.115	5.196	<0.0001	HS
<i>Nidradikya</i>	0.32	0.00	0.32	100%	0.62	0.125	2.551	<0.0175	VS
<i>AlpaMethunah</i>	0.16	0.00	0.16	100%	0.37	0.074	2.138	<0.0429	S
<i>Total Cholesterol</i>	211.6	142.59	69.03	32.61%	48.80	9.761	7.073	<0.0001	HS
<i>Triglycerides</i>	174.6	111.71	62.86	36.00%	59.11	11.82	5.317	<0.0001	HS
<i>HDL</i>	37.17	40.97	-3.796	10.21%	1.67	0.334	11.35	<0.0001	HS
<i>LDL</i>	123.9	88.16	35.80	28.87%	29.02	5.805	6.169	<0.0001	HS

Of the 25 patients registered, All are completed the treatment schedule and all 25 patients are considered for statistical analysis. Patients who enrolled for the study were above 20 year of age.

**Ashktahasarvakarmashu :** The mean Ashktaha Sarvakarmashu before treatment was 0.56 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0006$ ) result with 't' value of 3.934.

**Kshudraswasa:** The mean Kshudra Swasa before treatment was 0.48 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 4.096.

**Utsahahani:** The mean Utsaha Hani before treatment was 0.96 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 13.66.

**Angagaurava:** The mean Anga Gaurava before treatment was 1.08 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 13.50.

**Daurbalya:** The mean Daurbalya before treatment was 0.44 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0009$ ) result with 't' value of 3.772.

**Swedhadikya:** The mean Swedadikya before treatment was 0.64 which was reduced to 0.16 after the treatment. The total effect of therapy provided statistically Very Significant ( $p < 0.001$ ) result with 't' value of 3.674.

**Trishna:** The mean Trishana before treatment was 0.80 which was reduced to 0.20 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 5.196.

**Nidradikya:** The mean Nidradikya before treatment was 0.32 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Significant ( $p < 0.01$ ) result with 't' value of 2.551.

**AlpaMaithunah:** The mean Alpa Maithunaha before treatment was 0.16 which was reduced to 0.00 after the treatment. The total effect of therapy provided statistically Significant ( $p < 0.04$ ) result with 't' value of 2.138.

**Total Cholesterol:** The mean Total Cholesterol before treatment was 211.62 which was reduced to 142.59 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 7.073.

**Triglycerides:** The mean Triglyceride before treatment was 174.57 which was reduced to 111.71 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 5.317.

**HDL:** The mean HDL before treatment was 37.17 which was increased to 40.97 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 11.35.

**LDL:** The mean LDL before treatment was 123.98 which was reduced to 88.16 after the treatment. The total effect of therapy provided statistically Highly Significant ( $p < 0.0001$ ) result with 't' value of 5.805.

### DISCUSSION:

In the present Study Medohara Guggulu is taken for Clinical trial. It mainly contains drugs like Sunthi, Pippali, Marich, Chitraka, Haritaki, Vibhitaki, Amalaki, Musta, Vaividanga and Shuddha Guggulu having highest concentration of Guggulu in the combination. Almost all the drugs are having Katu rasa, laghu ruksha guna, Ushnaveerya, Katuvipaka and KaphaVata Shamaka properties which may be helpful in disintegrating the Samprapati of Medoroga. It is also having properties of Deepana (enlighten the Agni), Paachana (enhances digestive power), Kleda-Meda Shoshaka (scrap out excessive Meda and Kapha), Srotovishodhaka (open the micro channels) and potent in Lekhana property. So, by all these properties it also helps in scrapping of excessive Meda and Kapha and helps in breakage of pathogenesis of Disease. *Guggulsterone*, the bioactive constituent of Guggulu, a key transcriptional regulator for the maintenance of cholesterol and bile acid homeostasis in body system. It removes excess cholesterol from body by converting in to bile acid through enterohepatic circulation and this is major pathway to remove excessive cholesterol from the body. On assessing the ingredients of Lekhaniya Mahakashaya (Musta, Kustha, Haridra, Daruharidra, Vaca, Ativisa, Katurohini, Chitraka, Chirbilva, Haimavati), it

is found that the drugs like Chitraka contains  $\beta$ -sitosterol which act as Hypolipidemic. Saponins are also found in drugs like Vacha, Haimvatietc which is well known for lowering lipids. The combination showed highly significant results on subjective parameters like Ashaktaha Sarvakarmashu, Kshudraswasa, Atinidra, Atisweda etc. which is due to excess of Meda and Kapha. The combination act by its properties like Lekhana, Karshana, usna, tikshana, Medohara Kaphahara etc. and gives relief in the symptoms. The result is highly significant on Objective parameters also. This is because of internationally accepted effect of Guggulipids,  $\beta$ -sitosterol and saponins on lipid levels.

### CONCLUSION

- Hyperlipidemia is a very prevalent disease in today's world which is causing physical, mental and social impact on the suffering individual.
- Hyperlipidemia is common in people leading sedentary and are used to Madhura and Snigdhaahara.
- All the subjects showed marked reduction in serum Total Cholesterol, Triglycerides, LDL and HDL ratio and also showed significant increase in HDL levels.
- Medohara Guggulu and Lekhaniya Mahakashaya plays good role in the management of Hyperlipidemia.
- No adverse effects were found during and after the study.
- It can be said with full confidence that the combination used can be safely administered in patients with Hyperlipidemia.

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*Source of support: Nil*  
*Conflict of interest: None Declared*