

A CLINICAL STUDY OF CAPSULE *ATSIARJUNKSHARGUGGLU* (HYPOTHETICAL YOG) IN THE MANAGEMENT OF HYPERLIPIDEMIA

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ABSTRACT

"A physician should not be embarrassed if he is unable to name a disease as each and every disease cannot be named". Acharya Charaka, this quotation is best fit for today's era where arrays of newer diseases have come into foreground. This is mainly due to the interplay of various lifestyles, genetic and environmental factors which have altered over the years due to modernization. One such disease is Hyperlipidemia. Thus, considering the lack of definite *Ayurveda* comprehension as well as the magnitude of Hyperlipidemia in causing life threatening diseases, the present study "*A Clinical Study of Cap. Atsiarjunkshargugglu (hypothetical yog) in the Management of Hyperlipidemia*" had been planned. For this goal 20 patients have been treated with a hypothetical yog cap. *Atsiarjunkshargugglu* (prepared in MMM Govt. Ayurved College pharmacy, Udaipur). Lipid profile was the main criteria for evaluation of the results besides that objective parameters like Weight, BMI and subjective criteria like *kshudraswasa*, *nindradhikya* etc. were taken into consideration. Parametric and non parametric tests were used to find the effect of therapy and ultimately it has been observed that it showed tremendous improvement in subjective criteria as well as objective criteria

Keywords: Hyperlipidemia, cholesterol, Capsule *Atsiarjunkshargugglu*

INTRODUCTION

Hyperlipidemia is the term used to denote raised serum levels of one or more of total cholesterol, low-density lipoprotein cholesterol, triglycerides, or both total cholesterol and triglyceride (combined hyperlipidemia). The abnormal levels of TG and/or cholesterol in plasma are consequent to excess of substrate leading to more production, defective transport, delayed peripheral clearance, reduced utilization of lipoproteins or their intermediaries, or combinations of these abnormalities. The clinical significance of cholesterol lies in the fact that recent studies have related increased levels of plasma cholesterol to the

development of atherosclerosis which may further lead to cerebrovascular accidents or coronary artery disease. *Though there is no precise terminology for hyperlipidemia in Ayurveda.* Various attempts have been made to use distinctive nomenclature to denote the word Hyperlipidemia which are as *Rasagata Sneha Vriddhi*, *Rasa Raktagata Sneha Vriddhi*, *Medovriddhi*, *Medoroga* or *Medodosha* and *Ama Medo Dhatu* etc

Thus the following study was carried out with the following aims and objectives:

- To study the ***etiopathogenesis of hyperlipidemia***: According to Ayurveda and Modern Science.

- To evaluate the efficacy of **Cap. Atsiarjunkshargugglu (hypothetical yoga)** in the management of hyperlipidemia.

The human body is generated from *Snehasara*. *Snehasara* here means the most *Vishuddhatara* form of *Sneha*.² The Prana or life of a human being also depends on *Sneha*. *Sneha* (oiliness or lubricity) is an attribute present in all the *Dhatus* of the body with the only exception being the *Asthi Dhatu*. It is a parameter for the *Dhatusaratva* or the optimum status of all the *Dhatus* (except *Asthi*). *Snehana* or lubrication is mainly the function of *Medo Dhatu* and the property can also be seen in *Vasa, Majja*. These three only differ in their site and function.

Thus *Medas, Majja* and *Vasa* are qualitatively similar being predominant in *Snigdha, Guru Guna*. Though the above three are major sites where the *Sneha* is apparent, the main focus is kept on *Medo Dhatu* owing to its significance in lipid metabolism and the resultant pathology.

Vapa and Vasa are term used synonymously with *Medo Dhatu*.

The total quantity of *Medo Dhatu* is 2 *Anjali* and that of *Vasa* is 3 *Anjali*

Karma of Medo Dhatu:

Snehana, Sweda, Asthi Pushti, Drudhatva

Moola of Medovaha Srotas:

Charaka – *Vrikka* and *Vapavahana*

Sushruta – *Vrikka* and *Kati*

Vagbhata – *Vrikka* and *Mamsa*

Agni vata and *srotas* play main role.

Lipids:

Lipids are non-polar hydrophobic molecules comprising the essential components of all living cells. In the human body they perform several important functions by playing an important role in the cellular structure, serving as concentrated storage forms of energy, metabolic regulators,

protecting internal organs by a cushioning effect etc. Some of these lipids, stored in the body areas are known as depot lipids whereas others circulate in the blood. These lipids present in the body can be further classified into two types

Element Constant:

It is present in body in fixed proportions and constitutes structural components of the body like phospholipids and is thus essential for life.

Element Variable:

It is present in variable amounts and serves to nourish other body structures like neutral fat (triglycerides) etc.

There are four main categories of lipids present in plasma in varying amount

1. Cholesterol and its esters
2. Phospholipids
3. Triglycerides
4. Non-esterified fatty acids (NEFA)

MATERIAL AND METHODS:

Patients fulfilling the criteria and attending the OPD and IPD of all Departments, irrespective of age, sex, religion etc., a detailed case taking Performa were specially designed according to the protocol of the study encompassing all the aspects of the disease in Ayurvedic and Modern parlance.

INCLUSION CRITERIA:

Patients fulfilling the following general and diagnostic criteria were selected for the present study.

1. Patients having age more than 20 years and below 60 years.
2. BMI < 40.

DIAGNOSTIC CRITERIA:

Patients were diagnosed on the basis of Lipid Profile. Any one or more of the following criteria were selected.

- S. cholesterol (201 mg/dl or more)
- S. Triglycerides (151 mg/dl or more)
- S. LDL (131 mg/dl or more)

S. VLDL (41 mg/dl or more)

EXCLUSION CRITERIA

1. Patients having serious cardiac disorders like MI, Cardiac Failure etc.
2. Patients having major illness, IDDM, DM which is poorly controlled or newly diagnosed or is taking new therapy or recently adjusted therapy.
3. Patients having a history of untreated thyroid disorders.
4. Hyperlipidemia due to drugs e.g. glucocorticoids.
5. Pregnant females and lactating mothers.

- **Drug:** “Capsule Atsiarjunkshargugglu”(Hypothetical yog)

Name	Abstract Part used	Rasa	Guna	Veerya	Vipaka	Effect on Tridos
Atsi	Beej	Madhura, Tikta	Guru, Sanigdha, Pichchila	Ushana	Katu	Vaatshamak & KaphaPitta vrdhaka
Arjun	Tawak	Kashasya.	laghu, ruksha	Sheeta	Katu	Kaphapittahara
Go mutra	Go mutra khara	katu, lavan, tikta, kashaya	Laghu, ruksha, tikshana, ushana, kshar	Ushana	Katu	Kaphavata nashak, Pittjanak
Gugglu	Niryasa	Tikta, katu	Laghu, Rukhsa, Tikshna, Sukshama, Sar, Sugandhi	(puranguggul) Snighdha-pichichil (naveen gugglu)	Ushana Katu	Tridoshar Vat-Kapha Shamaka

1. **ALSI** (Flaxseed)-

Linum usitatissimum contains chlorogenic acid and its isomer. Also present are palmitic, stearic, oleic, linoleic acids, along with amino acids and sugars. It's seeds also contains mucilage (3-10 %) in epidermis, fatty oil (30-40 %) cynogenic glycosides (0.05-0.01 %) mainly linustanin, neolinustatine and linamar in; lignans; phenylpropane derivatives

6. Renal insufficiency.

CONCOMITANT MEDICATION:

Known hypolipidemic drugs like statins, fibrates were stopped during therapy.

STUDY DESIGN:

Clinical study .Informed consent was taken from all the patients before including them in the trial. Patients according to the criteria will be selected and randomly distributed in the following two groups. Patients were given Cap. Atsiarjunkshargugglu for 90 days.

DRUGS:

including linusitamarin. The seeds are an excellent source of dietary alpha-linolenic acid for modifying plasma and tissue lipids. It is also a rich source of **OMEGA-3 FATTY ACIDS** which reduces the atherogenic risk in hyperlipidemic patients.⁴ Human studies have indicated that flax seed are very effective in atherosclerosis, hypercholesterolemia, lupus nephritis, chronic renal disease and in cancer

prevention (active principal: lignin precursor secoisolariciresinol diglycoside). It is a good nervine and cardio tonic.

2. **ARJUN** –

Terminalia arjuna is a very good cardiogenic and cardio protective plant as mentioned in Ayurveda text. A study on rats showed that oral administration of bark powder (400 mg/kg body weight) for 10 days produced significant increase in circulating histamine, a little increase in 5-HT, catecholamine's and HDL cholesterol and decrease in total lipid, triglycerides and total cholesterol level.⁵

3. **GO-MURTA**-

Cow's urine helps to lower cholesterol levels and reduce body fat. A gift of cow urine is its ability to balance the three *doshas* (mucous, bile, and air). It boosts the immune system, serves as a complete detoxifier, and as a health promoting anti-oxidant. It also enhances brain power and strengthens the heart. Generally, it repairs and regenerates damaged tissues and cells. Very effective in obesity and controlling cholesterol levels.⁶

4. **GUGGLU**-

Commiphora mukul have stero isomers E&Z which are antagonist legends for bile acid receptor FXR which is an important regulator of cholesterol haemostasis. It is likely that this effect accounts for the hypolipidemic activity of gugglu.⁷

POSOLOGY

- **Dose:** 500 mg 2 b.d
- **Duration:** 90 days, follow up every month.
- **Anupana:** Luke warm water
- **Kala:** Before meals

Criteria for assessment:

The patients were examined monthly and suitable scoring pattern and objective signs were recorded to assess any changes

present in the patients. After completion of three months of treatment, the efficacy of the therapy was assessed on the basis of the following subjective as well as objective criteria.

Subjective criteria:

There are no available signs and symptoms of Hyperlipidemia mentioned directly in any of the ancient or modern texts whereas the majority of the patients presented with complaints associated with *Medoroga* i.e.; *Alasya/Utsahahani, Kshudra*

Swasa/Ayasena Swasa, Daurbalya (Alpa Vyayama

, Nidraadhikya, Swedadhikya, Daurgandhya, Sni gdhangata, Ati Pipasa, Ati Kshudha, Anga Gaurava (Heaviness of body), Anga chalatva, Gatra Sada.

• **Grading pattern:**

1. Absence of symptoms - 0
2. Mild degree of symptoms - 1
3. Moderated degree of symptoms - 2
4. Severe degree of symptoms – 3

Objective criteria:

Criteria were mainly assessed on the basis of Biochemical investigations like Lipid Profile. Also Body weight, BMI before starting the treatment and after completion of treatment was assessed in terms of percentage relief and statistical evaluations.

Presentation of Data:

The data collected and compiled from the multi dimensional clinical work was sorted out and processed further by subjective criteria to varied statistical methods. .

1. The first component incorporated the general observations as age, sex, and religion etc.
2. The second part deals with the results of the therapy evaluated on the basis of improvement in following parameters:
 1. (a) Subjective Criteria.
 2. (b) Bio-Chemical Parameters.

3. (c) Objective Criteria.
4. (d) Total effect of therapy.

The information gathered on the basis of above observations was subjected to statistical analysis. Wilcoxon matched pair signed ranks test was carried out for all non-parametric tests. Students paired ‘t’ test was applied for the objective parameters like lipid profile, biochemical investigations, body

weight etc. The results were interpreted at $p < 0.05$, $p < 0.01$ and $p < 0.001$ significance levels. The obtained results were interpreted as:

Insignificant $P > 0.05$

Significant $P < 0.01$

Highly Significant $P < 0.001$

OBSERVATION AND RESULTS:

TABLE NO.1 SHOWING EFFECT OF TREATMENT (CAPSULE ATSIARJUNKSHARGUGGUL) ON SYMPTOMS

SYMPTOMS	MEAN SCORE		MEAN DIFFERENCE	PERCENTAGE RELIEF %	SD	SE	P VALUE
	BT	AT					
<i>Alasya</i>	1.35	1.00	0.350	25.9	0.5871	0.1313	0.0313
<i>Kshudra swasa</i>	1.100	0.700	0.400	36.3	0.5026	0.1124	0.0078
<i>Daurbalya</i>	1.400	0.6500	0.7500	53.5	0.4443	0.09934	<0.0001
<i>Nidraadhikya</i>	1.350	0.800	0.550	40.7	0.5104	0.1141	0.0010
<i>Swedaadhikya</i>	0.900	0.7500	0.7500	83.3	0.4894	0.1094	0.3125
<i>Daurgandhya</i>	1.050	0.7500	0.300	28.5	0.4702	0.1051	0.0313
<i>Snighdhangata</i>	1.050	0.550	0.500	47.6	0.5130	0.1147	0.0020
<i>Atipipasa</i>	0.8500	0.5500	0.3000	35.2	0.4702	0.1051	0.0313
<i>Atisudha</i>	0.950	0.6500	0.3000	31.5	0.4202	0.1051	0.0313
<i>Angagaurav</i>	0.950	0.700	0.2500	26.3	0.4443	0.09934	0.0625
<i>Angachalatava</i>	0.5500	0.1500	0.4000	72.7	0.5026	0.1124	0.0078
<i>Gatrasada</i>	0.4000	0.2500	0.1500	37.5	0.3663	0.08192	0.2500

TABLE NO.2 SHOWING EFFECT OF TREATMENT (CAPSULE ASTIARJUNKSHARGUGGUL) ON OBJECTIVES / BIOCHEMICAL VALUES

OBJECTIVES	MEAN SCORE		MEAN DIFFERENCE	% RELIEF	SD	SE	T VALUE	P VALUE
	BT	AT						
WEIGHT(kg)	71.65	69.55	2.100	2.93	1.021	0.2283	9.200	0.0001
BMI(kg/m ²)	27.635	26.835	0.800	2.89	0.4867	0.1088	7.351	0.0001
S.CHOLESTEROL	224.40	194.60	29.795	13.25	25.835	5.777	5.158	0.0001
S.TRIGLYCERIDE	181.41	161.80	19.605	10.80	34.034	7.613	2.575	0.0185
HDL	44.155	44.600	-0.4450	No .rel.	4.230	0.9458	0.4705	0.6434
LDL	138.49	130.65	7.840	5.66	11.501	2.572	3.048	0.0066
VLDL	41.895	39.800	2.095	5.00	4.157	0.9295	2.254	0.362
CHOLE:HDL	5.186	4.540	0.6455	12.4	0.8752	0.1957	3.299	0.0038

As shown above in tabular form the result of treatment individually and comparatively is as follows:

The patients treated with Cap. *Atsiarjunkshargugglu* for three months showed 25.9% relief in symptom of *alasya* like wise 36.3% relief in Kshudra swasa, 53.5% relief in Daurbalya, 40.7% relief in Nidraadhikya, 83.3% relief in Swedaadhikya, 28.5% relief in Daurgandhya, 47.6% relief in Snighdhangata, 35.2% relief in Atipipasa, 31.5% relief in Atisudha, 26.3% relief in Angagaurav, 72.70% relief in Angachalatava, 37.5% relief in Gatrasada.

Patients treated with Cap. *Atsiarjunkshargugglu* for three months showed objective and biochemical relief as 2.93% reduction in weight, 2.89% reduction in BMI, 13.25% reduction in T. Cholesterol, 10.80% reduction in S. Triglyceride, No relief in S.H.D.L level, 5.66% reduction in S.L.D.L, 5.00% reduction in S.V.L.D.L, 12.4% improvement in T.Chole : HDL.

CONCLUSION

The concept of Hyperlipidemia can be elaborated according to Ayurvedic classics through indirect relevant references. It can be inferred as Vriddha Asthayi Medo Dhatu which is Ama in nature. It can be treated on the principles of *Apatarpana* and by following the line of treatment of Sthaulya or Prameha since all the three arise due to Medo Dushti Cap. *Atsiarjunkshargugglu* was proved effective on all the subjective and objective parameters. It also has been noted that the capsule has antihypertensive and anti diabetic effect on many patients. Dietary and lifestyle changes are supportive to therapy in

hyperlipidemia and Obesity. With the help of all statistical analysis we reached on a conclusion that *Cap. Atsiarjunkshargugglu* showed improvement on subjective as well as objective parameters but therapy in Group B proved more effective in all aspects.

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