

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF DASANGA GUGGULU AND VIDANGADI YOGA ON ELEVATED LIPID PROFILE

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ABSTRACT

Hyperlipidemia is the term used to denote the raised serum levels of cholesterol or triglycerides or both and is characterized by abnormally high concentration of lipids in blood caused by abnormal lipid and lipoprotein metabolism. It has the risk of producing complications like cardiovascular diseases, obesity, and atherosclerosis. In ayurveda this may be interpreted as *medoroga*. Hence the drugs selected for the study should possess *lekhana* and *medohara* property. A single blind randomized comparative clinical study was adopted, where 44 patients fulfilling the diagnostic and inclusion criteria were selected and randomly assigned into 2 groups a and b. The patients in group a were treated with *dasanga guggulu* 1 tab thrice daily after food and the patients in group b were treated with *vidangadi yoga* 1 tab thrice daily after food for 30 days. Results obtained after the clinical trial was analyzed statistically. Both the groups have showed good results in elevated lipid profile. Group a has given highly significant result on elevated lipid profile whereas, group b shows highly significant result in s.chol and ldl and significant result in tgl, vldl and hdl. Both groups showed significant result; but better results were found in group a than group b.

Keywords: *Dasanga guggulu*, Elevated lipid profile, *Medoroga*, *Vidangadi yoga*

INTRODUCTION

As rightly quoted by *Acharya Charaka*, “A physician should not be embarrassed if he is unable to name a disease as each and every disease cannot be named⁰¹”, this quotation is a best fit for today’s era where an array 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 modernization⁰². Some of the factors like fast foods, lack of exercise, stress, various addictions etc

contributed greatly to such diseases which generally act by impairing the metabolism of an individual making him prone to series of disorders.

Hyperlipidemia is one such disorder which is identified as a potential risk factor for multitudes of diseases like cardiovascular diseases, metabolic syndrome and even hypertension and this disorder has gained worldwide interest in its ability to participate in the pathology of atherosclerotic diseases like CHD which dominates the scenario of diseases causing

morbidity and mortality in the world. WHO in its report states that high cholesterol has contributed to 56% of cases of CAD and causes about 4.4 million deaths every year⁰³ and in Indians, Angina occurs at a relatively young age and is more severe and extensive⁰⁴.

The raised levels of cholesterol and triglycerides have adjudicated as the prime modifiable risk factors in atherosclerotic diseases and also raised total cholesterol is a major cause of disease burden in both the developed and developing world as a risk factor for ischemic heart disease and Stroke. According to *Ayurvedic* perspective, it is clear that *Kapha (Kledaka)*, *Vata (Samana & Vyana)*, Meda (fat/lipids) & *Medodhatvagni* were involved in the pathogenesis of *Sthoulya*⁰⁵. Hence the drug has to be such that it shows significant action on these factors. *Dasanga Guggulu*⁰⁶ and *Vidangadi yoga*⁰⁷ are mentioned under the context of *Sthoulyadhikara in Bhavaprakasha*. Thus considering the lack of definite *Ayurveda* comprehension as well as the magnitude of Hyperlipidemia in causing life threatening diseases, the present study has been planned and carried out.

AIM & OBJECTIVES

To evaluate the individual effect and to compare the effect of *Dasanga Guggulu* and *Vidangadi Yoga* in the management of Elevated Lipid Profile.

HYPOTHESIS

H₀: There is no significant difference in the effect of *Dasanga guggulu* and *Vidangadi Yoga* on Elevated Lipid Profile.

H₁: There is significant difference in the effect of *Dasanga Guggulu* and *Vidangadi Yoga* on Elevated Lipid Profile.

METHODOLOGY

Study design

Patients were selected randomly from OPD and IPD of PG studies of Kayachikitsa, Alva's Ayurveda Medical college and Hospital Vidyagiri, Moodbidri, Camps and other referrals. Comparative clinical study of minimum, 40 subjects of Hyperlipidemia were selected randomly irrespective of sex, religion, occupation, socioeconomic status and assigned into two equal groups, Group A and Group B for the study and the Method of sampling is Lottery Method.

Group - A was treated with *Dasanga Guggulu* 500mg thrice a day with *Ushnajala* after food for 1 month and **Group – B** was treated with *Vidangadi Yoga* 500mg thrice a day with *Ushnajala* after food for 1 month. The patients were assessed clinically and biochemically, before the treatment 1st day and after the treatment on 31st day.

Table 1: *Dasanga guggulu*

Sl.No	Ingredient	Quantity
1.	<i>Shunthi</i>	100g
2.	<i>Maricha</i>	100g
3.	<i>Pippali</i>	100g
4.	<i>Chitraka</i>	100g
5.	<i>Musta</i>	100g
6.	<i>Vidanga</i>	100g
7.	<i>Harithaki</i>	100g
8.	<i>Vibhitaki</i>	100g
9.	<i>Amalaki</i>	100g
10.	<i>Guggulu</i>	100g

Method of Preparation:

The trial drug taken for the clinical study in Group A was *Dasanga Guggulu*. The preparation consists of the above 10 drugs. All the ingredients except Guggulu were powdered finely and mixed well. Guggulu was added in water and heated till it becomes into a paste. The above powdered drugs and

Guggulu along with a mixture of DCP (di-calcium phosphate) were taken and grinded well for two hours to get a fine paste. This paste was later placed in a tray for drying. This dried paste was made into a fine powder and was put into the tablet making machine to get tablets of 500 mg each.

Table: Vidangadi yoga

Sl.No	Ingredient	Quantity
1.	<i>Vidanga</i>	200g
2.	<i>Nagara</i>	200g
3.	<i>Yavakshara</i>	200g
4.	<i>Amalaki</i>	200g
5.	<i>Yava</i>	200g
6.	<i>Lohabhasma</i>	200g

Method of Preparation:

The trial drug taken for the clinical study in Group B was *Vidangadi yoga*. The preparation consists of the above 10 drugs. All the ingredients were powdered finely and mixed well. The above powdered drugs along with a mixture of DCP (di-calcium phosphate) were taken and grinded well for two hours to get a fine paste. This paste was later placed in a tray for drying. This dried paste was made into a fine powder

and was put into the tablet making machine to get tablets of 500 mg each.

Diagnostic Criteria: Elevated Lipid Profile

Inclusion Criteria

1. Age 16-60 years.
2. Patient with elevated lipid profile.

Exclusion Criteria

1. Pregnant and lactating women.
2. Patients who had other systemic disorders which interfered with the study.

OBSERVATION & RESULT

Table 3: Demographic Data

Demographic Data		Group - A	Group - B	%
Age	31-45 years	12	14	59.09
Religion	Hindu	13	16	65.9
Nature Of Work	Sedentary	14	12	59.09
Diet	Mixed	19	20	88.63
Occupation	Bussiness	9	8	38.63
Sex	Male	14	11	56.81

Table 4: Effect of Therapy on Group -A

Lipid value	Mean score		Difference in mean	%	SD	SE	t- value	p value	Remark
	BT	AT							
S.Chol	246.1	234.7	11.4	4.63	10.2	2.28	4.99	<0.001	H.S
TGL	157.45	152.95	4.5	2.85	3.05	0.68	6.5	<0.001	H.S
LDL	149.4	145	4.4	2.94	2.98	0.66	6.6	<0.001	H.S
VLDL	34.45	32.3	2.15	6.24	1.72	0.38	5.57	<0.001	H.S
HDL	42.1	43.4	1.3	3.08	1.17	0.26	4.95	<0.001	H.S

Table 5: Effect of Therapy on Group -B

	Mean score		Difference in mean	%	SD	SE	t- value	P value	Remarks
	BT	AT							
S.Chol	250.35	249.55	0.8	0.31	0.76	0.17	4.66	<0.001	H.S
TGL	156.9	156.6	0.3	0.19	0.47	0.1	2.85	<0.05	S
LDL	147.5	146.9	0.65	0.44	0.67	0.15	4.3	<0.001	H.S
VLDL	36.7	36.45	0.25	0.68	0.44	0.09	2.51	<0.05	S
HDL	41.3	41.5	0.25	0.6	0.44	0.09	2.51	<0.05	S

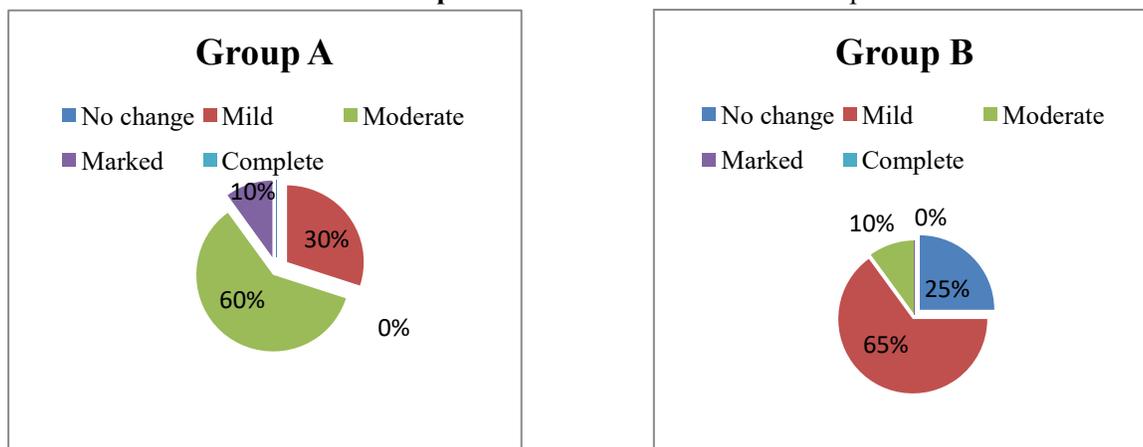
Table 6: Comparative Effect of Treatment Between Group A & B

Assessment criteria	Mean		Mean Difference	S.D		t-value	p-value
	Grp A	Grp B		Grp A	Grp B		
S.Chol	11.4	1.7	9.7	10.2	1.21	4.22	<0.001
TGL	4.5	0.7	3.8	3.05	0.65	5.44	<0.001
LDL	4.4	0.65	3.75	2.98	0.67	5.48	<0.001
VLDL	2.15	0.7	1.45	1.72	0.65	3.51	<0.001
HDL	1.3	0.65	0.65	1.17	0.67	2.15	<0.05

Table 7: Overall Effects of Therapy

Improvement	No: of patients		%	No: of patients		%
	GROUP -A			GROUP- B		
No Change (0%)	0	0	0	5	25	
Mild (<25%)	6	30	30	13	65	
Moderate (>25%)	12	60	60	2	10	
Marked (>50%)	02	10	10	0	0	
Complete (<96%)	0	0	0	0	0	

Graph 1: Effect of Treatment in Group- A & B



RESULT

The result of this clinical trial suggests that Group A had highly significant change than Group B in improving lipid values, Weight and BMI which was also proved statistically.

Overall effect of therapy

The impact of the treatment in every trial patient was analyzed carefully and the overall result obtained is presented in terms of the degree of relief of the condition. After the therapy, in Group A, 6 patients had Mild improvement (<25%) while 12 patients had Moderate improvement (>25% - <50%) and 2 patients had marked improvement (>50%).

In Group B, 5 patients has no change (0%) and 13 patients had Mild improvement (<25%) while 2 patients had Moderate improvement (>25% - <50%) and no one has marked improvement.

DISCUSSION

Dasanga Guggulu encounters *Vata* and *Kapha* *Doshas* by virtue of its *Katu-Rasa* dominance & *Ushna-Virya*⁸. *Vatahara* action was also achieved by *Laghu* and *Snigdha* property. *Katu-Rasa* performs *medo-kledaka Shoshana* action. *Ushna Virya* also helps in *Kleda* and *medo kshaya* action. *Katu-Rasa*, *Ushna-Virya* encounters *Dhatvagni mandya* & potentiates the weakened *Dhatvagni* and help in *AmaPachana* thereby alleviates *Aparipakwa* and

Ama dhatu. Due to *Katu-Rasa*, all the involved channels were dilated i.e. “*Srotamsi Vivrunoti*” action. *Katu-Rasa* and *Ushna-Virya* will check over *Medovaha* and *Mamsavaha Srotodushti*.

Hyperlipidemia if seen through the lens of Ayurveda, may be taken as *medo dosha* as *bahu Abaddha medas* which circulates all over the body. *Tikta katu kashaya rasas* causes *medo kshaya*. The drugs such as *guggulu*, *vidanga*, *Agni*, *Musta*, *Haritaki* and *Vibhitaki* are *rooksha*, *sukshma* and *ushna* in nature hence *rooksha guna* causes *medo kshaya*, *sukshma guna* penetrates into the deeper channels and *ushna guna* causes *medo vilayana*. In case of Hyperlipidemia, obstruction may be seen as atherosclerosis due to deposition of fat in arteries which is liquefied by the virtue of above properties. *Guggulu* is also a drug of *lekhana rasayana*. Hence by virtue of above properties, the *samprapti vighatana* is expected.

In *Vidangadi Yoga* maximum ingredients has *katu*, *kashaya* and *tikta rasa*¹⁰. These *tikta rasa* drugs possess the *lekhana*, *karshana* and *rasa, meda, kleda upashoshana* properties. *Yava* have *rooksha guna* and *lohabhasma* is *lekhana rasayana*, by the virtue of its property helps to maintain the body strength. The ingredients of *vidangadi yoga* possess *laghu rooksha* and *tikshna guna* which helps to alleviate *kapha* and *meda* all over the body and it possesses *sara guna* by which the effect of drug all over the body very quickly. The ingredients of *vidangadi yoga*

having *ushna veerya* and *katu vipaka* which act as *vata kapha shamaka*, *karshana*, *lepana*, *ama pachana*, *dhatu samshoshana* properties. Thus doing the function *sroto-vibhandha nashana* and act against *kapha* and *meda*. *Vidangadi yoga* stabilizes *agni* in its normal level. When *pachaka agni* becomes stabilized the *medodhatvagni* progressively comes to a state of equilibrium and its functional aspect become normal. It results in *medodhtvagni* and *srotovishodhana*. Consequently when the obstruction in the *srotas* gets removed, *vatanulomana* occurs followed by *medovilayana*.

CONCLUSION

Hyperlipidemia was the root cause for majority of lifestyle disorders. Hyperlipidemia in Ayurvedic literatures was explained under the vast umbrella of *sthoulya-medoroga-prameha*. As it was a *santarpanotha vikara*, the ideal management protocol is *Rookshana*. The formulations *Dasanga guggulu* and *Vidangadi yoga* is proved to be used as a safe drug in practice without any adverse reactions. Group A has given highly significant result on elevated lipid profile. Whereas Group B shows highly significant result only in S.chol and LDL and moderate significant result in TGL, VLDL and HDL. Evaluating all the results of the study it can be concluded as acceptance of Hypothesis H1 – There is significant difference in the effect of *Dasanga Guggulu* and *Vidangadi Yoga* on Elevated Lipid Profile.

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