



CLINICAL EVALUATION OF AMRUTADHYA GUGGULU IN THE MANAGEMENT OF DYSLIPIDEMIA (MEDODUSHTI)

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ABSTRACT

Hyperlipidemia is one of the major risk factor for cardiovascular disease like hypertension, fatty liver, obesity and others. Life style alternations leading to increased calories intake and reduction in physical activities leads to higher incidence in medovaha strotodushti, (micro channel disturbances). Signs and symptoms of medodushti explained in ayurvedic texts shows striking resemblance with dislipidemia to access the efficacy of Amrutadhya Guggulu, present study was carried out on 30 clinically diagnosed and investigated individuals of dislipidemia. Patients were administered Amrutadhya Guggulu in dose of 3gm/day with luke warm water in three divided doses. In this context ayurveda provides cost effective therapy for dislipidemia without any side effects. The study have shown significant results in important objective as well as subjective parameters.

KEYWORDS: Dislipidemia, Medodushti, Amrutadhya Guggulu.

INTRODUCTION

Dislipidemia is a disorder of disturbed lipid metabolism. Dislipidemia is an important major risk factor for coronary artery disease, which is the leading cause of death world wide. Changes in diet and life style are responsible for increased number of hyperlipidemic individuals. Coronary artery disease is due to atherosclerosis of large and medium sized arteries and dislipidemia has been found to be one of the most important contributing factor.

According to Ayurveda, excessive intake of shleshma-wardhaka ahara-vihara and reduced exercise causes agnidushti resulting in excessive formation of sama meda. Thus it presents as medodushti or dyslipidemia.

For the treatment of medodushti, such drugs should be selected that help in lekhana of excessive meda-kapha without vayu-prakopak and normalise agni both at the level of jatharagni dhatwagni. In present study anrutadhya guggulu mentioned by acharya chakradutta in sthoulya chikitsa has been selected to prove its hypolipidaemic effect.

Although so many drugs are mentioned in ayurvedic classics for medodushti but there is need of their evaluation clinically on various scientific parameters to find out safe, effective, cheap and readily available

treatment of dislipidemia (Medodushti). So this clinical trial was undertaken.

AIMS AND OBJECTIVES

Present research work was undertaken to evaluate clinically efficacy of Amrutadhya Guggulu in the management of dyslipidemia made by using various scientific parameters.

MATERIALS AND METHODS

Following materials and methods were adopted for conducting the present clinical trial.

A) Selection of cases: The study was conducted on 30 clinically diagnosed and confirmed patients of dyslipidemia made on the basis of subjective and objective parameters. Patients were randomly selected from OPD and IPD of Department of Kayachikitsa of Jammu Institute of Ayurveda and Research, Jammu. A regular record of assessment of all patients was maintained in proforma prepared for the study.

B) Inclusion Criteria

- Diagnosed and confirmed cases of dyslipidemia (Medodushti) on the basis of Investigation.
- Patients between the age group of 20 to 60 years in either sex.

Patients willing to sign the consent form

C) Diagnostic criteria: Patient having alterations in any one or more component of the lipid profile as follows were included in present study-

- Serum cholesterol (200 mg /dl or more)
- Serum Triglycerides (150mg/dl or more)
- Serum LDL (130mg/dl or more)
- Serum VLDL (40mg/dl or more)
- Serum HDL (40 mg/dl or less)

D) Exclusion Criteria

- Patients with age below 20 years and above 60 years.
- Patient suffering from diseases like nephritic syndrome, hypothyroidism, insulin dependent diabetes mellitus, Jaundice, hepatitis chronic infections and other serious disease.

c) Patients not willing for consent.

E) Grouping and Administration of Drugs: Thirty diagnosed patients were administered amrutadhya Guggulu in dose of two tablets (500 mg each) thrice a day (3 gm per day) with lukewarm water for 30 days.

Pathya Puthya: Patients were advised to take normal fat free diet and do light exercise like walking etc.

Study Design: Randomised, control, Interventional, open clinical study.

Trial Drug: Amrutadya Guggulu described by chakradatta was taken as trial drug. It contains following drugs.

Table No. I: Showing the contents of Amrutadya Guggulu.

Name of Drug	Latin Name	Proportion	Part Used
Guduchi	Tinospora cordifolia	1 part	Stem
Ela	Elettaria cardamomum	2 part	Fruit
Vella	Embelica ribes	3 part	Fruit
Vatsaka	Halorrhena antidysentrica	4 part	Stem bark
Vibhitaka	Terminalia belerica	5 part	Fruit
Haritaki	Terminalia chebula	6 part	Fruit
Amlaki	Embelica officinalis	7 part	Fruit
Guggulu	Commiphora mukul	8 part	Resins

Methods of Preparation: All the above contents Guduchi, Ela, Vidanga, Vatsaka, Vibhitaki, Haritiki, Amlaka and Guggulu were taken in the ratio of 1: 2: 3: 4: 5: 6: 7: 8 respectively. First of all powder of initial 7 drugs was made and mixed properly then *Shuddha Guggulu* was added to it after melting by heat separately. At last formulation was mixed thoroughly again and 500 mg tablets were prepared and packed well in the air tight container. This formulation was prepared by pharmacy of Jammu Institute of Ayurveda and Research, Jammu.

Criteria for Assessment

a) Subjective Criteria:

Following symptoms of *Medodushti* were used as subjective parameters-

- Kshudhadhikya (Excessive hunger)
- Pipasadhikya (Excessive thirst)
- Kshudraswasa (Breathlessness on exertion)
- Swedadhikya (Excessive sweating)
- Atinidra (Excessive sleep)
- Dourbalya (Weakness)
- Gaurava (Heaviness of body)
- Kricchavyavayata (Difficulty in intercourse)
- Daurgandhya (Excessive body odour)

For the convenience of statistical analysis these symptoms were assessed with following symptom rating scale-

Absence of symptoms	0
Mild degree of symptoms	1
Moderate degree of symptoms	2
Severe degree of symptoms	3
Very Severe degree of symptoms	4

b) Objective Criteria

Following examinations and laboratory investigations were adopted as objective parameters-

1) Anthropometric Parameter

- weight of the patient (in kg)
- Body Mass Index (BMI)
 $BMI = \frac{\text{Weight of the patient (in kg)}}{\{\text{Height of the patient (in metre)}\}^2}$
- Chest Circumference-** Chest Circumference was measured at the level of nipples in normal expansion of chest in centimeters with patients in standing position, using standard measuring tape.
- Hip Circumference-** Hip Circumference was measured to the nearest centimeters at the point of maximum protrusion of hips with patients in standing position, using a standard measuring tape.
- Waist Circumference-** Waist Circumference was measured to the nearest centimeters at the midpoint between the coastal margins and at the iliac crest, with the patients in standing position, using a standard measuring tape.

- **Waist-Hip Ratio:** Ratio between the Waist and Hip circumference of the patient was calculated.

2) Biochemical Parameter

- Routine Blood investigation
- Hemoglobin (Hb gram %)
- Total Leucocytes Count (TLC)
- Differential Leukocyte Count (DLC)
- Erythrocyte Sedimentation Rate (ESR in mm /hr)

- Serum Very Low Density Lipoprotein (Sr.VLDL)
- Serum High Density Lipoprotein (Sr.HDL)

- Fasting Blood Sugar

Follow Up Study- Follow up of the patient was done fortnightly to note any change in the symptoms and other effects. If produced any investigations were repeated after completion of the treatment that is after 30 days.

- Lipid Profile

- Serum Total Cholesterol (Sr.TC)
- Serum Triglycerides (Sr.TG)
- Serum Low Density Lipoprotein (Sr.LDL)

Table no. 2: Showing effect of Therapy on Subjective Parameters.

Parameter (n=30)	Mean		Dif.	% of Relief	SD (+-)	SE (+-)	'P' Value	Result
	BT	AT						
Kshudhadhikya	0.56	0.46	0.10	17.64	0.30	0.05	>0.05	NS
Pipasadhikya	0.4	0.26	0.13	33.33	0.34	0.06	>0.05	NS
Daurbalya	1.83	1.63	0.20	10.90	0.40	0.07	<0.05	S
Swedadhikya	0.46	0.40	0.06	14.28	0.25	0.04	>0.05	NS
Atinidra	0.76	0.60	0.16	21.73	0.37	0.06	>0.05	NS
Kshudrashwasa	1.46	1.26	0.20	13.63	0.40	0.07	<0.05	S
Gaurava	1.86	1.63	0.23	12.50	0.43	0.07	<0.05	S
Kricchvyavayata	0.13	0.1	0.03	25.00	0.18	0.03	>0.05	NS
Daurgandhya	2.66	1.66	0.1	37.50	0.30	0.05	>0.05	NS

Table No. 3: Showing effect of Therapy in Anthropometric Parameters.

Parameter (n=30)	Mean		Dif.	% of Relief	SD (+-)	SE (+-)	't'	'P' Value	Result
	BT	AT							
Body weight (Kg)	74.08	73.88	0.20	0.26	0.38	0.07	2.84	<0.05	S
B.M.I(Kg/m ²)	31.91	31.34	0.56	1.77	1.29	0.23	2.39	<0.05	S
Chest Circumference(cm)	101.6	101.4	0.23	0.22	0.63	0.11	1.99	>0.05	NS
Waist Circumference(cm)	111.2	110.9	0.26	0.23	0.63	0.11	2.28	<0.05	S
Hip Circumference(cm)	116.5	116.3	0.2	0.17	0.61	0.11	1.79	>0.05	NS
Waist:Hip Ratio	0.91	0.90	0.01	0.72	0.01	0.03	1.88	>0.05	NS

Table No. 4: Showing effect of Therapy On Lipid Profile.

Parameter (n=30)	Mean		Dif.	% of Relief	SD (+-)	SE (+-)	't'	'P' Value	Result
	BT	AT							
Sr.TC(mg/dl)	224.10	219.70	4.40	1.90	9.56	1.74	2.51	<0.05	S
Sr.TG(mg/dl)	195.30	190.90	4.40	2.25	8.89	1.63	2.69	<0.05	S
Sr. LDL(mg/dl)	115.20	114.50	0.70	0.66	5.82	1.06	0.72	>0.05	NS
Sr.VLDL(cm)	45.98	45.68	0.29	0.64	3.27	0.59	0.49	>0.05	NS
Sr.HDL(mg/dl)	65.13	65.40	0.26	0.40	0.98	0.17	1.49	>0.05	NS
FBS (mg%)	95.86	93.06	2.80	2.92	8.09	1.47	1.89	>0.05	NS

(Serum Total Cholesterol (Sr.TC), Serum Triglycerides (Sr.TG), Serum Low Density Lipoprotein (Sr.LDL), Serum Very Low Density Lipoprotein (Sr.VLDL), Serum High Density Lipoprotein (Sr.HDL) FBS-Fasting Blood Sugar).

DISCUSSION

Medoroga is a Kaphapradhana-Medopradoshaja Vikara with Medavrutta-Vatta as a causative factor. The trial drug Amrutadhya Guggulu contains Guduchi, Ela, Vidanga, Vatsaka, Vibhitaki, Haritiki, Amlaka and Guggulu in the proportion of 1: 2: 3: 4: 5: 6: 7: 8

respectively. Dominant properties of this formulation are Kashaya, Katu, Tikta Rasa, Laghu, Ruksha, Tikshna Guna and Ushna Virya. Katu Tikta and Kashaya Rasa pacify Kapha DOsha. Among these three, Katu Rasa has potential of Agnisandhipana, which helps to normalise the Jatharagni to form nutritional Anna Rasaas substrate which further gives qualitative nutrition to next Dhatu

and help in modification or normalisation of Dhatwagni. It also helps to scrap out the Abaddha Mamsa-Medo Dhatu from the body. Tikta Rasa also has properties of Deepana, Pachana, Kleda-Meda Shoshaka, & potent in lekha property. Kashaya Rasa also has property of Sharira-Kleda Shoshana. Ushna Virya also helps to pacify the Vata Dosha. Along with all these properties, Sukshma Guna of Guggulu helps in Bhedana of Avarana of Samana Vayu. Vatanulomana-Vataharanam property of some drugs help to normalise the Apana Vayu, thus by controlling the Apana Vayu, other Vata Dosha can also be brought to their normal status. Guggulu, highest in the concentration and main content of this formulation, possesses direct Lekhana Karma and Medo-Vatahara Prabhava. Although except Guggulu other contents are not directly linked with Vyadhi-Pratyanika-Chikitsa of Medoroga, but they have potential to break the basic pathogenesis taking place in Medoroga.

In recent researches, Guggulu has been proved to be hypolipidemic and antioxidant, potent anti-hypercholesteraemic, and anti-Atherosclerotic agent. Amlaki possesses hypoglycaemic, anti-atherosclerotic, hypolipidemic activity. Haritaki has been proved as anti oxidant with markedly inhibiting lipid per oxidation, effective in reducing the level of total lipids, serum cholesterol, LDL and VLDL significantly, also increases the HDL levels significantly. Vibhitaki has hypoglycemic property with lipid lowering activity. Vidanga significantly decreases Blood Glucose, Serum Total Cholesterol and Triglycerides and increase HDL cholesterol levels when compared to controls.

Ela is proved for blood pressure lowering, Fibrinolysis enhancing and antioxidant activities. Guduchi has potent hypolipidemic effect, its aqueous extract of roots significantly reduced the serum and tissue cholesterol, Phospholipids and free fatty acids, and showed significant improvement in the glucose tolerance. All these researches again help to prove the hypolipidemic effect of contents of Amrutadhya Guggulu.

CONCLUSION

In present study, Amrutadhya Guggulu has produced mild to moderate improvement in all subjective parameters, although it was statistically significant ($p < 0.05$) only in three out of nine symptoms. Trial drug has also shown statically significant ($p < 0.05$) results and reducing serum cholesterol, serum triglycerides, body weight, BMI and waist circumference. Thus, it can be concluded that Ayurvedic formulation Amrutadhya Guggulu is quite effective in management of the dyslipidemia (Medodushti).

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