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CLINICAL STUDY IN THE MANAGEMENT OF *MEDOROGA* W.S.R. TO DYSLIPIDEMIA WITH *ARTHARAKSHA GHANAVATI*

Janhavi Patharkar*[1], Haresh Soni[2], N. J. Trivedi[3] and Niranjan Y.[4]

[1]PG Scholar, Kayachikitsa Department, Parul Institute of Ayurveda, Vadodara, Gujarat.
[2,3]Professor of Kayachikitsa Department, Parul Institute of Ayurveda, Vadodara, Gujarat.
[4]Reader of Kayachikitsa Department, Parul Institute of Ayurveda, Vadodara, Gujarat.

***Corresponding Author: Janhavi Patharkar**
PG Scholar, Kayachikitsa Department, Parul Institute of Ayurveda, Vadodara, Gujarat.

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ABSTRACT
Dyslipidemia is one of the major risk factor for cardio vascular disease, stroke and peripheral vascular disease, early detection and treatment of dyslipidemia can prevent risk for atherogenic cardiovascular disorder. In general Dyslipidemia is not showing any symptoms and can be diagnosed during routine examination. The high costs and side effects of dyslipidemia medications have led many people to search for alternate treatments. Therefore there is need to evaluate herbal formulations for the treatment of dyslipidemia, in Ayurveda it may be interpreted as *Medoroga*. Ayurveda offers natural and effective remedies which are cost effective and helpful in prevention of the disease. It is a clinical study with pre-test and post-test design conducted in a single group. *Artharaksha Ghanavati* is given in a dose of 500mg 3 tablets twice daily for a period of 8 weeks. All the patients were followed up for a period of 4 weeks and the assessment was done based on improvement in *Medoroga* grading scale and Lipid profile and BMI parameters. The change in the values before and after treatment were assessed by the paired‘t’ test. Showed significant improvement in the Subjective and objective parameter, *Medovriddhi* reduced by (41.66%), weight which were reduced to 3.24% BMI was reduced to 3.29% Total Cholesterol were reduced to 6.56% LDL was reduced to 14.69%, HDL was increased to 1.55%. *Medoroga* is a *Santarpanotha Vyadhi* whose main line of treatment has to be *Apatarpana*, which can be achieved by *Deepana, Pachana, and Lekhana* property and hypololipidemic action of *Artharaksha Ghanavati*. The *Medoroga* Score and lipid profile is assessed which are markedly reduced. The trial drug *Artharaksha Ghanavati* has beneficial effects on *Medoroga* w.s.r. to Dyslipidemia are accepted and the null hypothesis is rejected.

KEYWORDS: Dyslipidemia, *Medoroga, Artharaksha Ghanavati.*

INTRODUCTION
The important concept of Ayurveda is keeping of good health, WHO defines as good health as not merely disease Free State, but as a state of complete physical, mental, and social wellbeing. *Medoroga* is explained in *Santarpanjanya Vyadhi* in Ayurveda and *Atistoola Purusha* has been considered as one of the *Asthanindita Purusha*.

Excess weight is definitely unattractive, but more importantly, it is a serious health hazard. Obesity affects every aspect of a people’s lives, from health to relationships. Obesity & Dyslipidemia occurs due to today life style and food habit. Fat is the main source of stored energy and it also secretes number of hormones, but excessive accumulation of fat is called obesity that present a risk to health, and it may shorten the span of life as well as create diminished efficiency and happiness, Obesity is a growing health issue around the world and it has become epidemic in some nations.

Ideal body weight of an individual is that maximizes life expectancy. Obesity may be defined as an illness where the health (and hence life expectancy) is adversely affected by excess body fat. Obesity is simply the result of bad diet or willful overeating, it is not just cosmetic concern it increase rick of diseases. It is potent co morbid risk factor for mortality & morbidity, if it remains untreated.

Dyslipidemia can be defined as abnormal amount of lipid and lipoprotein in the blood, and it is one of the major risk factor for cardio vascular disease, stroke and peripheral vascular disease. Total cholesterol increases on an average rate of more than 2mg/dl per year during early adulthood. Men aged 45 years or older and women aged 55 years or older are considered to have age as a risk factor. According to WHO over all raised cholesterol is estimated to cause 2.6million death of 4.5% total population and 29.7 million disabilities.

WHO in its report reveals that high cholesterol contributes 56% of cases of CAD and causes about 4.4 million death every year. In India Angina occur at younger age and severe, WHO (2002) Reported that high cholesterol level is one of the main non communicable disease related risk factor in India. Recent surveys show that there are more than 1 billion obese adults worldwide. India ranks among the top 10 obese nations of the world and about one million urban Indians are overweight or obese. No wonder that the World Health Organization has concluded that obesity is the major unmet public health problem worldwide.

Now a day everybody is conscious about weight and health and trying to identify risk factors and health promotion activities and primary prevention is increases of chronic diseases.

According to National commission on macroeconomics and Health (NCMH) there would be around 62 million patients with coronary artery disease by 2015 and out of these 23 million would be patients younger than 40 year of age.

In general studies show that for each 1mg/dl decrease in LDL cholesterol in the plasma, there is about 2 percent decrease in mortality from atherosclerotic cardiovascular diseases. Therefore, appropriate preventive measures are valuable. In modern medicine innumerable drugs are used for the treatment of Dyslipidemia but success rates are not appreciable due to wide side effects. Hence an attempt will be made to pursue the topic dyslipidemia with *Ayurvedic* way of management.

In *Ayurvedic Samhitas Bahuabadhit Medas,* and *Aparipakwa Medas,* words are explained which gives the clue regarding Dyslipidemia. *Shonit Abhishyanada Dhamanipratichayat*- it means that hyperlipidemia leads to Atherosclerosis.

In this study *Artharaksha Ghanavati* was tried for the effective management of this dreadful disease. Ingredients of this formulation are mentioned in *Bhavprakash.* Meaning of *Arthis* heart and *Raksha* means protection, this formulation will help like cardio protector due its antihyperlipidemic activity. Ingredients are *Haritaki, Vacha, Rasna, Pippali, Shunti, Shati* and *Pushkarmool*. These drugs have mainly *Katu, Tikta, Kashaya Rasa and Ushna, Ruksha, Tikshna* guna, *Kaphahara, Medohara and Raktashodhak* in action, which may help to reduce elevated lipids and to prevent complications due to this. Dyslipidemia is hidden or silent risk factor. Because it has no symptoms. It is one of the biggest burdens on our society today. Finding the problem early allows one to take action before it is too late.

Aims and Objectives

- To study *Medoroga* w.s.r to Dyslipidemia in *Ayurvedic* and modern way.
- To evaluate the efficacy of *Artharaksha Ghanavati* in management of Dyslipidemia.

MATERIALS AND METHODS

Total 30 patients of Medoroga (Dyslipidemia) were registered from O.P.D. and I.P.D. department of Kayachikitsa, Parul Ayurved Hospital, and Parul University and referred cases from other departments/ physicians of the city.

Criteria for diagnosis

Medoroga grading scale was used for the assessment. Objective criteria -Lipid profile values (pre and post treatment), Body Mass Index. Detailed clinical history was taken and complete physical examination was done on the basis of a special proforma of Medoroga w.s.r. Dyslipidemia.

Exclusion Criteria

- **Patients** who had underwent anti-cholesterol medication within last 8 weeks.
- Uncontrolled and metabolic disorder other than Dyslipidemia

Plan for study

Total 30 patient of Medoroga (Dyslipidemia) were studied, the dose of Artharaksha Ghanavati was 3tab (500mg each) before food two times a day, with Ushanajala.for 8 weeks. Follow up after 4 weeks. Approval for the study was taken from institution ethics committee and informed, written consent from all the participants.

OBSERVATION

76.67% patients were taking *Guru Ahara,*63.33%were taking *Mamsa Rasa,*60.00%were drinking cold water,53.33% were taking *Singdh Ahara,* and 46.67%patients were having *Madura Rasa* predominant *Ahara.*70% patients were having cholesterol level in between 200-239 mg/dl followed by 23.33% patients having cholesterol level >240mg/dl whereas remaining 6.66% patients were having total cholesterol value below 200mg/dl.40% patients had LDL level 130-159 mg/dl followed by 36.66% patients who had LDL level 100-129 mg/dl whereas 23.33% patients were reported with LDL level more than 160 mg/dl.(70%) patients reported the range of 40-60 mg/dl for HDL followed by 20% patients who had LDL more than 60 mg/dl and remaining 10% patients had LDL level less than 40 mg/dl.43.33% patients were reported with Triglycerides below 150 mg/dl followed by 36.66% patients having Triglycerides between 159-199 mg/dl and 20% patients had Triglyceride above200 mg /dl(53.33%) patients were having VLDL level more than 30mg/dl followed by 46.66% patients who had VLDL level less than 30 mg/dl. (43.33%) had BMI 25-29.9 kg/m^2followed by 40% patients who had BMI 30-34.5 kg/m^2whereas remaining 16.66% patients had BMI more than 35 kg/m^2.

Medovruddhi was seen in all 100%, *Anutsah*ain 80%, *Krichra Vyavaya*in 66.66%, *Dourbalya*in 100%, *Dourgandhya*in 60%, *Sweda Adhikya*in 93.33%, *Kshudha Adhikya*in 93.33%, *Pipasa Adhikya*in 100%, *Nidra Adhikya*in 86.66% *Kshudra Shwasa*in 93.33%and *Angagauravata*in 93.33% patients.

Statistical Design

The data generated in the clinical study was analyzed by applying student't' test using Statistical software-Sigmastat 3.5.

RESULT

Effect of treatment on Lipid Profile

Parameter	BT	AT	%	SD	SE	t	P	Result
Total Cholesterol	225.47	210.67	6.56%	31.32	4.50	3.29	0.003	S
LDL	142.46	121.52	14.69	9.4	1.71	12.21	0.001	HS
HDL	52.06	55.38	6.3%	4.52%	4.52	0.82	4.022	HS
Triglycerides	165.87	168.45	1.55%	30.41	5.55	0.46	0.6450	IS
VLDL	32.34	34.72	7.35%	6.44	1.17	2.030	0.0520	IS
Weight	74.90	72.47	3.24%	0.78	0.14	16.98	0.001	HS
BMI	30.99	29.97	3.29%	0.38	0.07	14.56	0.001	HS

Effect of therapy on *Lakshanas*

Parameter	BT	AT	%	SD	SE	t	P	Result
*Medovruddh*i	2.16	1.26	41.66	0.30	0.055	16.15	0.001	HS
Anuutsaha	1.433	0.733	48.95	0.466	0.0851	8.226	0.001	HS
KrichchhraVyavaaya	0.800	0.267	67.5	0.507	0.0926	5.757	0.001	HS
Dourbalya	1.367	0.833	38.75	0.571	0.104	5.113	0.001	HS
Doargandhya	0.900	0.300	66.66	0.563	0.103	5.835	0.001	HS
SwedaAdhikya	2.133	1.13	46.94	0.695	0.127	7.883	0.001	HS
PipasaAdhikya	1.867	1.200	35.48	0.80	0.146	4.551	0.001	HS
Kshudha Adhikya	1.700	1.067	37.64	0.615	0.112	5.641	0.001	HS
PipasaAdhikya	1.867	1.200	35.48	0.80	0.146	4.551	0.001	HS
NidraAdhikya	1.500	0.767	49.3%	0.640	0.117	6.279	0.001	HS
KshudraShvasa	1.069	0.400	62.26%	0.528	0.0980	7.392	0.001	HS

RESULT

The result of the study was that *Artharaksha Ghanavati* had highly significant effects in the management of elevated lipid profile and there is no statistically significant difference. However no significant changes were observed in the subjective data. The total effect of therapy is significant statistically ($p<0.003$). The LDL was reduced to 14.69% after the treatment, The HDL was increased to 1.55%, after the treatment. The weight was reduced to 3.24% after the treatment. The total effect of therapy provided statistically highly significant.

DISCUSSION

- *Kashaya* form of this drug is having good result in hyperlipidemic patient, but it is not possible to everyone to do it regularly; Ghanavati is easy to take daily.
- *Katu, Tikta Rasa, Ushana Veerya, Katu Vipaka, Rookshna, Tikshna, Laghu, Guna, Deepana, Pachana, Kapha Medohara, Hrdya, Lekhana Drvyas* can be used to control and regulate the lipid level in circulation which will help for management of dyslipidemia.
- *Artharaksha Ghanavati* encounters *Vata* & *Kapha Dosha* by virtue of its *Katu-Rasa* dominance &*Ushna-Virya. Vatahara* action is also achieved by *Laghu* and *Snigdha* property.

Total Effect

Total Cholesterol was reduced to 6.56% after the treatment. HDL was increased to 1.55% after the treatment, Weight which was reduced to 3.24% after the treatment. BMI was reduced to 3.29% after the treatment. *Medovrudh*i which was reduced to 41.66% after the treatment.

Mode of Action

Katu, Tikta Rasa, Ushana Veerya, Katu Vipaka, Rookshna, Tikshna, Laghu, Guna, Deepana, Pachana, Kapha Medohara, Hrdya, Lekhana Drvyas can be used to control and regulate the lipid level in circulation which will help for management of dyslipidemia The probable mode of action of *Artharaksha Ghanavati* is like as bile acid sequestrates, of its contents *Haritaki, Shunti & Rasna* which is having resins.

CONCLUSION

Dyslipidemia is one of the major modifiable risk factor for atherosclerotic diseases like CAD, stroke etc. Atherosclerosis can be understood by *Dhamani Pratichaya* stated in the Ayurvedic classics. It is mentioned as one amongst the *Kaphaja Nanatmaja Vikara* The ingredients of trial drug are *Haritaki, Vacha, Rasna, Pippali, Shunti, Shati* and *Pushkarmool* and these drugs are mainly *Katu, Tikta, and Kshaya Rasatmaka* in

nature and *Ushna, Ruksha, Tikshna* in *Guna*, which are *Kaphahara, Medohara and Raktshodhaka* in action. The combination used in the group can be safely administered in patients with Dyslipidemia. All the subjects showed marked reduction in low density lipoprotein and some reduction of weight.