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Research Article

EFFECT OF *LEKHANA BASTI* IN THE MANAGEMENT OF DYSLIPIDEMIA: A CLINICAL STUDY

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ABSTRACT

Dyslipidemia one of the life style disorder due to the today's faulty life style. It may be manifested by elevation of the total cholesterol the bad low density lipoprotein (LDL) cholesterol and the triglyceride concentrations and a decrease in the good high density lipoprotein (HDL) cholesterol concentration in the blood. Dyslipidemia is widely regarded as a major risk factor for coronary heart disease (CHD) and atherosclerotic cardiovascular disease (ASCVD). Every 1% increase in cholesterol level there is 1-2% increase in the incidence of Coronary Heart Disease.

Lipids can be correlated to that of *Medo Dhatu*. According to the scattered references Dyslipidemia can be correlated to *Medo Dosha* and subsequently as *Medoroga*. The treatment principles mainly includes *Samshodhana Chikitsa* (Bio cleansing), where as in modern statins are first choice of drug.

Looking into the adverse reactions and the limitations in the modern medication clinical trial was carried out in 30 patients having Dyslipidaemia. *Lekhana Basti* was administered and the effect of treatment on the complete lipid profile i.e., Serum cholesterol, Triglycerides, HDL, S.LDL, VLDL was assessed after the treatment and follow up. As *Basti Karma* is best treatment for correction of *Vata Dosha*, which are the basic factors involved in the pathogenesis of *Medoroga*. Statistical analysis using ANOVA and paired t test showed highly significant result in the lipid profile after the treatment and follow up.

Keywords: Dyslipidemia, Lipid profile, *Lekhana Basti*.

INTRODUCTION

The 21st century is an era of tremendous development and innovation in all aspects of life in general and in the field of technology in particular which has made living much more comfortable on one side but on the other side gifted many life style related diseases. Today's life style mainly includes faulty food habits, minimum physical exercise, maximum mental and intellectual exercise with stress, anxiety and depression resulting into various abnormalities in body composition, one of such gift is Dyslipidemia. Particularly the unhealthy food habits like intake of fast food, convenience food, processed food, high calorie food and irregular timings of meals with sedentary life style is the foremost cause for Dyslipidemia. Its prevalence is increasing, more over is a potential signal for unrecognized comorbidities like Obesity,

Metabolic syndrome, Diabetes mellitus, Hypertension, Cardio vascular disease etc.,^[1]

Among the lifestyle disorders Dyslipidemia is the disorder of lipoprotein metabolism manifested by elevation of the total cholesterol the bad low density lipoprotein (LDL) cholesterol and the triglyceride concentrations and a decrease in the good high density lipoprotein (HDL) cholesterol concentration in the blood.

Dyslipidemia is widely regarded as a major risk factor for coronary heart disease (CHD) and atherosclerotic cardiovascular disease (ASCVD); for every 1% increase in cholesterol level there is 1-2% increase in the incidence of CHD. Death in female due to CHD is more than all cancer combined. The global

burden of disease study has estimated that cardiovascular disorders are currently the second leading worldwide cause of disability adjusted life years (the sum of lost life due to mortality and years of life adjusted for the severity of disability) in industrialized countries (Murray, 1997). Based on the above statistics there is little doubt that Dyslipidemia is a major risk factor for morbidity and mortality. It is thus a serious public health problem.

There are scattered references available in Ayurveda correlating Dyslipidemia. Lipids can be easily correlated to that of *Medo Dhatu*. Abnormal composition of *Medo Dhatu* is considered as *Medo Dosha* and subsequently as *Medoroga*. It is a condition caused by derangement of *Agni* in general and *Medodhatvagni* in particular leading to improper formation of *Medo Dhatu* in excess, which subsequently starts accumulating in the *Srotas* resulting into obstruction to the flow of *Vata*, in turn aggravating the *Vata Dosha* which moves back into the *Pakvashaya* causing further excitation of *Agni* requiring frequent meals thus the vicious cycle continue resulting into *Medoroga*.^[2]

Statins are the first choice in the treatment of Dyslipidemia, however the need for long term, lifelong therapy is associated with several adverse effects like myopathy, increased risk in ARF/CRF, hypothyroidism and memory loss.

In Ayurveda basically treatment is based on severity of the disease and virulence of the *Dosha*. *Samshodhana* (bio cleansing) *Chikitsa* for *Bahu Dosha* (excessively vitiated *Dosha*) and *Samshamana* (palliative) *Chikitsa* for *Alpa* and *Madhyama Bala Dosha* (mild to moderately vitiated *Dosha* and diseases). *Medo roga* being *Bahu Dosha* dominant condition *Samshodhana Chikitsa* is preferred treatment modality.

Among these treatments *Basti Karma* is best treatment for correction of *Vata Dosha*, which is the basic factor involved in the pathogenesis of *Medoroga*. According to Acharya Sushruta by using various combinations of ingredients it is considered good even in other *Dosha* and *Dooshya* involvement and beneficial in diseases of all the three paths where most of them are due to involvement of *Vata* thus said to be *Ardha Chikitsa*.

Thus with this thought, A randomised clinical study was done to evaluate the efficacy of *Lekhana Basti* in Dyslipidemia.

AIMS AND OBJECTIVES

To evaluate the effect of *Lekhana Basti* in the management of Dyslipidemia (*Medoroga*)

MATERIALS AND METHODOLOGY

Patients indicated and fit for trial were selected from outpatient and inpatient department of Panchakarma, National Institute of Ayurveda Hospital, Jaipur, Rajasthan.

Diagnostic criteria

1. Abnormal levels of serum lipid profile.
2. Clinical features of Dyslipidemia and *Medoroga* like *Ashaktaha Sarva Karmasu*, *Kshudra Shvasa*, *Svedadhikya*, *Utsahahani*, *Angagaurava*

Inclusion criteria

1. Serum lipid levels ranging

Serum Cholesterol (201mg/dl or more), Serum Triglycerides (161mg/dl or more), Serum HDL (below 40mg/dl), Serum LDL (131mg/dl or more). Serum VLDL (41mg/dl or more). All or any of these.

2. Having clinical features of Dyslipidemia and *Medoroga*

Exclusion criteria

Patients below 20 years & above 60 years, with other systemic diseases like cardiovascular diseases, associated with any rectal pathology like Haemorrhoids, Fissure etc., not fit for *Lekhana Basti* were excluded from the study.

Laboratory investigation

Routine hematological and urine investigations, lipid profile, liver function test were carried out before and after the treatment.

Assessment criteria

Complete Lipid profile including serum cholesterol, serum triglycerides, serum HDL, serum LDL, serum VLDL were assessed before starting the treatment, after completion of treatment and after follow up (As the parameters are in the measurements no scoring pattern was adopted).

Lekhana Basti procedure

In this group *Lekhana Basti* was administered as *Kala Basti* in modified schedule.

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Basti	A	N	N	N	A	N	N	N	A	N	N	N	A	N	N	A

The *Basti* was administered in the following steps.

The patient was subjected to *Sarvanga Abhyanga* with *Dashamoola Taila* followed by *Bashpa Svedana*. Then the patient was asked to have rice with green gram dal in lesser quantity than regular consumption, attend natural urges and walk a few steps before reaching the *Basti* room. On the day of *Niruha Basti* patient was asked to come in empty stomach.

After recording the vitals patient was advised to lie comfortably in left lateral position on *Basti* table with left leg straight and the right leg flexed at knee and hip joints, head resting on left hand with the right hand resting on the right leg.

Preparation of *Basti Dravya*

Anuvasana Basti

60 ml of *Triphala Taila*[3] was made lukewarm by keeping it in a hot water bath. Then *Shatapushpa Choorna* and *Saindhava Lavana* (each 1 gram) added and mixed till a homogenous mixture was obtained, again *Basti Dravya* was luke

warmed, administered with enema syringe fitted with rubber catheter (no.08).

Niruha Basti^[4]

Makshika (Honey) 60ml, *Saindhava Lavana* 5grams, *Triphala Taila* 90 ml, *Yastimadhu Kalka* 20grams, *Triphala Kvatha* 240ml, were added accordingly and stirred well to get homogenous mixture. Lastly *Gomutra* 50ml, *Yavakshara* and *Ooshakadi Gana Dravya* (*Hingu, Tutta, Kaseesa, Shilajatu*) 2 gram each added administered through *Basti Putaka*.

Follow up: Follow up of the patients was done once in fortnight up to 2 months.

OBSERVATIONS AND RESULT

Out of 30 patients maximum 63.33% patients were male, 83.33% patients in between the age group 25-50 yrs.53.33% patients were Hindu, 76.66% patients were married, 80% patients were having the history of strainous work, 53.33%were *VataKapha Prakriti*, 53% were *Kroora kosta*, 78% patients were non vegetarians.

Table 1: Showing the effect of treatment on complete lipid profile

Lipid Profile	BT	AT	%	AF	Pair wise significance		
					BT-AT	BT-AF	AT-AF
Serum Cholesterol	267.57± 21.15	167.17± 22.10	37.53%	172.33± 21.83	<0.001**	<0.001**	<0.001**
Serum Triglycerides	218.83± 34.25	166.77± 22.00	23.79%	172.23± 21.30	<0.001**	<0.001**	<0.001**
Serum HDL	56.43± 8.26	56.50± 5.06	0.12%	58.80± 5.87	0.943	0.020*	<0.001**
Serum LDL	167.70± 14.65	77.27± 19.24	54%	78.62± 20.36	<0.001**	<0.001**	0.347
Serum VLDL	43.79± 6.87	33.35± 4.40	23.85%	34.42± 4.27	<0.001**	<0.001**	<0.001**

DISCUSSION

Dyslipidemia can be studied under the broad umbrella of *Sthaulya* in *Brihatrayi*. *Atisthaulya* is at first mentioned by Acharya Charaka as one of the *Kaphaja Nanatmaja Vikara* in *Maharoga Adhyaya* and is later on elaborated upon in the subsequent *Ashtau Ninditiya Adhyaya*. On further contemplation it is evident that *Atisthaulya* is physiology predominant disorder which eventually gets converted into a pathological state. The progression from a physiology to pathology is so prompt that it cannot be pointed out distinctly.

A review of the *Laghutrayi* bears certain references to Dyslipidemia. *Adhamalla* while commenting on *Sharangdhara Samhita* has tried to differentiate between the two types *Medo Roga* viz;

Sthaulya and *Medo Dosha*. According to the distinction made by him, the former is characterized by *Udaravridhi* where as the later is characterized by morbid changes occurring due to obstruction of the channels.

In the present study a modified *Kala Basti* schedule was adopted, in order to have maximum *Lekhana* effect, more number of *Niruha Basti* and less number of *Anuvasana Basti* were administered as *Kala Basti* Schedule. The effect of *Lekhana Basti* in Serum Cholesterol can be studied under two headings.

1. Action at the level of Liver

This could be because of the chief drugs of *Lekhana Basti* like Honey, *Triphala*, *Gomutra*, *Yavakshara*, *Ooshakadi Gana Dravya* are having

Kaphahara, Medohara activity which might have been absorbed by the superior haemorrhoidal veins reach directly to the liver there by correcting liver metabolism which might have reduced the synthesis of cholesterol and increasing its excretion, and 2/3rd directly enters systemic circulation through inferior and middle haemorrhoidal veins resulting into significant availability of drugs bypassing first pass metabolism which may be the cause in reduction in serum level.

2. Correcting Vata Dosha

The corner stone in the treatment of reducing cholesterol is inhibiting the action of Acetyl Co-A reductase which may be considered as part of *Vata Dosha*. *Basti Karma* regulates the production and function of *Vata Dosha*.

The effect obtained by *Lekhana Basti* in Serum Triglycerides may be due to the following reasons.

The drugs used in *Basti Karma* are mainly *Medohara* (hypolipidaemic) and *Lekhana* in nature hence they might have reduced the level of TGL. Apart from this the basic causative factor for Dyslipidemia (*Medoroga*) is the abnormal movement of *Vata Dosha* which in turn increases the appetite there by in turn result in increased calorie intake. Hence to reduce the calorie intake the corner stone of the treatment could be regulating the movement of *Vata Dosha* which was achieved by successful administration of *Basti*.

The improvement in the Serum HDL level after the *Basti* was observed. As *Basti Karma* corrects the *Vata Dosha* which is responsible for the proper transportation of *Poshaka Rasa* and formation of good quality *Dhatu*.

Lekhana Basti drugs are having *Medohara* action, it cleanses the channels of transportation their by eliminates the accumulated *Dosha* and *Malarupi Medo Dhatu* which may be the reason for the better reduction of Serum LDL and VLDL level.

CONCLUSION

Dyslipidemia is an abnormal amount of lipids in the blood due to impaired lipid metabolism, can be correlated with abnormal *Medo Dhatu (Medo Dosha)*. In *Medoroga* primarily there is *Agni Vaishamy* and *Vata Dushti*, among *Samshodhana Basti Karma* is best to correct *Vata Dosha* and further corrects the *Agni*.

Lekhana Basti effect showed mean decrease of 37.53% in cholesterol, 23.79% in triglycerides, 54% in LDL, 23.85% in VLDL and increase of 0.12% in HDL levels after the treatment. Further after the follow up period showed mean reduction of 33.46% in cholesterol, 20.52% in triglycerides, 52.26% in LDL, 20.65% in VLDL and 4.07% of increase in the HDL levels. *Lekhana Basti* was highly effective in reducing of cholesterol level which was statistically highly significant even after the follow up.

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