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EFFICIENCY OF *TRIPHALADI KWATHA LEKHANA VASTI* IN *MEDOROGA* (HYPERLIPIDEMIA)

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ABSTRACT

Hyperlipidemia is a disease of modern era in which the levels of lipoprotein i.e. cholesterol, triglycerides or both are increased in plasma. It is a potent risk factor for atherosclerotic diseases. Hyperlipidemia is contributed by high fat diet, sedentary lifestyle etc. which leads to *Medo Dhatu dushti*. Hyperlipidemia can be studied under the heading of *'Medoroga'* which is a well described disease of *'Medo Dhatu dushti'* in *Ayurvedic* classics. In present clinical trial 30 patients of *Medoroga* (Hyperlipidemia) of either sex up to an age of 60 years were selected for the study from O.P/I.P unit of PG Dept. of Panchakarma, Dr. BRKR Govt. Ayurvedic Medical College & Hospital Hyderabad. Each selected patient was administered two cycles of *'Triphaladi Kwatha Lekhana Vasti'* in form of *Yoga Vasti* with a gap of one week. After completion of course of therapy i.e. after 23days, overall assessment of effect of therapy was done based on change in subjective and objective parameter. The result was found statistically highly significant.

Keywords: Hyperlipidemia, *Medodhatu, Medoroga, LekhanaVasti*

INTRODUCTION

Today is the era of modernization and fast life. Everybody is busy and living stressful life. Man has adapted himself to the fast paced life by modifying his dietary and lifestyle preferences to suit the modern era. This has resulted in a state of discrepancy between the external environment and his internal mechanism causing multitudes of diseases which are popularly referred as 'lifestyle diseases' and Hyperlipidemia is one among them in which the levels of lipoproteins (cholesterol, triglycerides or both) are raised in the plasma.

Fast foods, lack of exercise, stress, various addictions etc. are some of the factors which contribute greatly to such diseases. These factors generally act by impairing the metabolism of an individual making them prone to series of disorders. Hyperlipidemia is one such disorder which is identified as a potential risk factor for multitudes of diseases. Raised cholesterol levels in patients of Hyperlipidemia gets deposited in the arteries including the coronary arteries where it contributes to the narrowing and blockage of the arteries that leads to coronary artery disease, myocardial infarction and Cerebrovascular accidents.

Reducing the burden of disability and death from coronary heart disease (CHD) is one of the greatest challenges facing health professionals in the developed world.

CHD is the number one killer among the diseases and it accounts for 37% of adult deaths in the US every year[1].NikolaiAnichkov in 1912 discovered the role of cholesterol in CHD, currently the world's most deadly disease. In India; persons suffering from the CHD are dou-

bled in the last 20 years[2]. Raised Cholesterol (>220 mg/dl) is prevalent in 60% population of 50-59 years age group and 55% population in 60-100 years age group in females in India, whereas in males it is prevalent in 45% individuals of 40-49 years age group[2]. From point of view of HDL, 28.2% males and 12.9% females have HDL below 1mmol/L.[2]

Though, there is no precise terminology for Hyperlipidemia mentioned in the *Ayurvedic* classics, *Acharya Charaka* has thrown light on the eight varieties of impediments which are designated as *Ashta Nindita Purusha*; *Ati Sthaulya (Medoroga)* comprises one of them.[3] *Medoroga* is a disease of *Medo Dhatu dushti* which is well described in *Ayurvedic* texts.

Hyperlipidemia is contributed by high fat diet, sedentary lifestyle etc. which leads to *Medo Dhatu dushti*. *Nidanas* (Causative factors) of *Medoroga* and Hyperlipidemia are having direct relation with *Medo Dhatu*, hence being close resemblance of these two diseases in terms of *Nidanas* and *Medo Dhatu dushti* the disease Hyperlipidemia can be studied under the heading of *Medoroga*.

As Hyperlipidemia is a metabolic disorder, it requires long term treatment and drugs used in modern science to treat Hyperlipidemia has several adverse effects. Hence, it's necessary to have some definite & harmless solution to this problem. *Panchakarma* therapies are popular in the field of *Ayurvedic* disease management, as it gives radical cure to diseases with holistic approach. So *Vasti* and more specifically "*Triphaladi kwatha Lekhana vasti*" which can remove abnormally increased '*Meda*' described by *Acharya Sushruta* was undertaken for the present research.

AIMS & OBJECTIVES

- To study the aetiopathogenesis of *Medoroga* (Hyperlipidemia) according to both *Ayurveda* and modern science.
- To evaluate the role of *Triphaladi Kwatha Lekhana Vasti* in *Medoroga* (Hyperlipidemia).

MATERIALS AND METHODS

Source of Data: In the present study patients attending the OPD & IPD of PG Dept. of Panchakarma & cases referred by other departments of Dr. BRKR Govt. Ayu. Hospital were selected randomly irrespective of race, cast, sex, religion etc.

Criteria for selection of the patients: The patients were randomly selected and only the patients who were diagnosed as *Medoroga* (Hyperlipidemia) on the basis of the subjective and objective parameter were taken for the study.

Inclusion Criteria

- serum cholesterol: 201 mg/dl or more
- serum triglycerides: 151 mg/dl or more
- serum LDL: 101 mg/dl or more
- serum VLDL: 41 mg/dl or more
- Patients between age group of 20 years to 60 years

Exclusion Criteria

- Patients having age less than 20 years & above 60 years
- Patients having serious cardiac problems like MI, cardiac failure etc
- Patients having major illness like IDDM, DM which is poorly controlled
- Patients having history of untreated thyroid disorders
- Hyperlipidemia due to drugs e.g. Glucocorticoids
- Pregnant females & lactating females
- BMI>40
- Renal insufficiency or any other serious systemic illness

Investigations: Routine haematological examination and other investigations if

required before treatment to rule out any other pathological conditions were done along with total lipid profile before and after treatment.

Study design: The present study was open clinical trial. Informed consent was taken from all the patients before including them in the trial.

Sample size: In this trial total 30 patients were taken for the study.

Study plan: A detailed case taking proforma was specially designed according to the protocol of the study encompassing all the aspects of the disease in *Ayurvedic* and Modern parlance.

Materials for Lekhana Vasti:

Trial Drug: Drug selected for the present study was *Triphaladi kwatha Lekhana Vasti*[4].

Vasti prayoga: 2 spell of *Yoga Vasti* with an interval of 7 days in between two spells.

1. *Triphaladi Kwatha Lekhana vasti* (730ml) as *Niruha Vasti* in *Yoga Vasti*.

2. Before and after *Niruha Vasti Moorchita Til tail* was given as *Anuvasana Vasti* (90ml).

3. Total 16 *Vasti* were administered out of which 6 were *Triphaladi Kwatha Lekhana Vasti* and 10 *Anuvasana Vasti*.

Table1: Showing content and quantities of the *Triphaladi Kwatha Lekhana Vasti*[4]

Content name	Latin name	English / Chemical name	Quantity(in gm or ml) used in present clinical trial
Makshika		Honey	100ml
Saindhava	Sodium chloride	Rock salt	10 g
Katu Tail		Mustard oil	130 ml
Triphala Kalka			40 g
Triphala Kwatha			320 ml
Gomutra		Cow urine	120 ml
Ushakadi Prativapa			10 g
Yava kshara		Potassium carbonate	
Kashisha		Ferrous sulphate	
Hingu	*Ferula alliacia*	Asafoetida	All in equal quantity
Tuttha		Copper sulphate	
Shuddha Shilajit	*Asphaltum punjabinum*	Black bitumen	

*Anuvasana Vasti***:** *Moorchita Til Tail* (90ml)

Administration of Triphaladi Kwatha Lekhana Vasti:

Lekhana Vasti was given in morning hours, in *Nirahara* condition. Total procedure can be divided into 3parts:

1) Purvakarma: As a preoperative procedure, patients were subjected to local *Abhyanga* and *Swedana* therapy then followed by administration of the *Vasti*.

2) Pradhana karma: The patient instructed to lie down in left lateral position on the table, after wearing the hand gloves the tip of the *Netra* and anal orifice of the patient were smeared with oil then *Vasti*

netra was introduced into the anal canal in alignment to vertebral column for about 4 to 6 inches, then *Vasti putaka* was pressed uniformly and *Vasti dravya* was pushed into the rectum, after that *Vasti netra* was removed slowly. Just after *Vasti* patient allowed to lie down in supine position without much movement for some time, and advised to empty bowel immediately when he/she feels, defecation urge.

3) Paschat karma: Patients were asked to take rest, avoid day sleep and take light food in evening.

Duration of the study: Total duration of study was 23 days.

Pathya-Apathya:

Patients were advised to take food according to *Aharvidhi Visheshayatanas*[5]. For dietary changes the patients were made to limit the use of oil and ghee. They were also made to curtail the use of energy rich foods like rice, potatoes, fried foods and bakery products. All the patients were advised to avoid overeating and leave 1/3rd stomach capacity empty. They were also advised to drink lukewarm water and avoid refrigerated water.

Criteria for assessment: The patients were examined weekly and suitable scoring pattern and objective signs were recorded to assess any changes present in the patients. After completion of 23 days 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 *Ayurvedic* texts whereas the majority of the patients presented with complaints associated with *Medoroga*. Hence the signs and symptoms of *Medoroga* which are subjective in nature were used for symptomatic evaluation, for which a multidimensional scoring pattern was adopted.

Table 2: Showing Assessment Scale of Subjective Symptoms

1-*Angachalatva*	6-*Daurgandhya*
-absence of flabbiness-0	-absence of body odour-0
-little visible area after fast movement-1	-occasional body odour, removed after bath-1
-little visible area after moderate movement-2	-persistent, limited to closed area-2
-visible area after mild movement-3	- persistent, limited felt from long distance-3
-visible area even after changing posture-4	- persistent, not tolerated even by patient -4
2-*Alasya*	**7-*Snigdhangata***
-No laziness-0	-normal body lusture-0
-doing satisfactorily work with late initiation-1	-oily,in summer season-1
- doing unsatisfactorily and takes time-2	-oily,in dry season-2
-doing little work very slowly-3	-excessive oily even in dry season-3
-doesn't take any initiation even after pressure-4	-persistent & profuse stickness-4
3-*Kshudra Shwasa*	**8-*Atipipasa***
-after heavy work but tolerable-0	-normal thirst-0
-after moderate work but tolerable-1	-excess up to 1 Litre-1
-after little work but tolerable-2	-excess up to 1-2 Litre-2
- after little work but beyond tolerance-3	-excess up to 2-3 Litre-3
-in resting condition also-4	-excess >3 Litre-4
4-*Nidradhikya*	**9-*Atikshudha***
-Normal sleep 7 hrs/night-0	-light breakfast with normal lunch&dinner-0
-sleep upto 8-10 hrs/day with angagaurava-1	-light breakfast with heavy lunch&dinner-1
-sleep upto 8-10 hrs/day with angagaurava and jrimbha-2	-heavy breakfast with heavy lunch&dinner-2
-sleep upto 8-10 hrs/day with tandra-3	-do- with supplementary food-3
- >10 hrs/day with tandra & klama-4	-feeling hungry even after heavy feed throughout day-4
5-*Swedadhikya*	**10-*Angagaurava***
-after heavy work in hot season-0	-no heaviness in body-0
-profuse sweating after moderate movement-1	-heaviness in body but not hampering routine work-1
-after little work & movement-2	-heaviness, hampering routine work-2
-profuse sweating after little work & movement-3	-heaviness which hampers body movement-3
-sweating even at rest-4	-heaviness with flabbiness-4

Objective criteria: Objective criteria like Lipid Profile, Body weight, BMI, and body circumferences (Chest, abdomen, hip, mid-thigh and mid-arm), were recorded before starting the treatment and after completion of treatment and assessed in terms of statistical evaluations.

Statistical assessment: All the values of the subjective and objective parameters before and after treatment were recorded. Mean difference, standard deviation and standard error of these values were calculated. Then these values were subjected to calculate t-value and p-value. In this statistical assessment paired t-test was used.

Assessment of results:

The total effect of therapy was assessed on subjective and objective parameters as follows:

1. Marked Relief - More than 75% relief in the complaints.

2. Moderate Relief - 50% to 75% relief in the complaints.

3. Mild Relief - 25% to 50% relief in the complaints.

4. Poor Relief - less than 25% relief in the complaints.

OBSERVATIONS AND RESULTS

Out of 30 patients maximum 30% patients were observed in age group of 41-50 years, 70% were male, 43.33% patients have sedentary work, 53.33% patients have dominance of *Madhura rasa* and 46.66% patients have dominance of *Snigdha guna* in their diet, 33.33% patients found have addiction of both smoking & alcohol, 46.67% patients were of *VK Prakriti*, 53.33% patients have sleeping habit of >8hours and 73.33% patients have sleeping habit in day time, 100% patients came with over wt. & obesity as a chief complaints and *Anagachalatva & Alasya* as associated complaints. In present study 100% patients were observed with *Kapha* as main *dosha dushti*.

Table 3: Showing effect of Therapy on Subjective Parameter

Subjective Parameters	MEAN		% Relief	S.D.		S.E.M.		T	P	Significance
	BT	AT		BT	AT	BT	AT			
Anga Chalatva	2.23	1.23	44.77	0.90	0.82	0.16	0.15	6.28	<0.001	H.S.
Alasya	2.50	1.17	53.33	0.73	0.70	0.13	0.13	10.26	<0.001	H.S
Kshudra Shwasa	1.50	0.83	45.45	0.94	0.71	0.17	0.13	6.15	<0.001	H.S.
Nidra Adhikya	2.07	0.83	59.67	0.78	0.70	0.14	0.13	8.72	<0.001	H.S.
Sweda Adhikya	2.33	0.97	60.56	0.92	0.78	0.17	0.14	9.05	<0.001	H.S.
Dourgandhya	2.27	1.00	55.88	1.01	0.79	0.19	0.14	8.83	<0.001	H.S.
Angagaurava	2.33	0.80	64.17	0.97	0.96	0.18	0.18	9.14	<0.001	H.S.
Atikshuda	2.13	0.77	64.02	1.01	0.77	0.18	0.14	8.41	<0.001	H.S.
Atipipasa	1.87	0.73	60.71	1.22	0.74	0.22	0.14	7.57	<0.001	H.S.
Snigdhangata	1.93	0.67	65.51	1.01	0.66	0.19	0.12	7.98	<0.001	H.S.

Abbreviations: S.D= standard deviation, SEM= standard error of mean, t value= student test, p value= probability value, H.S= highly significant, B.T= before treatment, A.T= after treatment.]

Effect of Therapy on objective parameters

Table 4: Showing effect of therapy on Body circumferences

Body circumference (cm)	MEAN SCORE		% Relief	S.D.		S.E.M.		T	P	Significance
	BT	AT		BT	AT	BT	AT			
Chest	100.37	99.03	1.33	5.12	5.35	094	0.99	8.78	<0.001	H.S.
Abdomen	102.63	99.38	3.16	9.29	9.19	1.70	1.71	15.99	<0.001	H.S
Hip	105.60	103.52	1.96	7.71	7.36	1.41	1.37	11.05	<0.001	H.S.
Mid arm	31.23	29.97	4.03	3.10	3.19	0.57	0.58	7.64	<0.001	H.S.
Mid thigh	57.77	56.20	2.71	6.54	6.68	1.19	1.22	8.52%	<0.001	H.S.

Table 5: Showing effect of therapy on Weight & BMI

Parameter	MEAN SCORE		% Relief	S.D.		S.E.M.		T	P	Significance
	BT	AT		BT	AT	BT	BT			
Weight (kg)	85.33	82.93	2.81	12.23	11.92	2.23	2.18	7.49	<0.001	H.S.
BMI (kg/m²)	32.11	31.35	2.36	2.84	2.59	0.51	0.47	6.31	<0.001	H.S

Table 6: Showing effect: of therapy on Lipid Profile

Lipid Profile (mg/dl)	MEAN SCORE		% Relief	S.D.		S.E.M.		T	P	Significance
	BT	AT		BT	AT	BT	BT			
S. Cholesterol	234	227	2.9	35.98	43.29	6.57	7.90	1.03	0.30	N.S.
LDL	140.33	139.73	0.42	21.49	22.35	3.92	4.08	1.94	0.06	N.S.
HDL	58.03	57.80	0.39	13.46	12.95	2.46	2.36	1.85	0.5	N.S.
VLDL	68.30	68.07	0.33	22.44	22.57	4.10	4.12	0.73	0.46	N.S.
Triglycerides	231.90	231.4	0.21	54.53	54.47	9.96	9.94	1.85	0.07	N.S.

DISCUSSION

Medoroga is a well described disease in *Ayurvedic* classics. On the basis of *Nidanas* there lies a great similarity in *Medoroga* & Hyperlipidemia. *Both Medoroga* & Hyperlipidemia are disorder of *Medodhatu dushti*, *Kapha & Medo dhatu* are main *Dosha* and *Dushya* involved in pathogenesis of this disease. *Samprapti* also goes same for both the conditions up to some extent. It differs in the last part where due to *Medo Dhatvagnimandya*, *Asthayi Medo Dhatu* increases, as a result of lack of conversion to *Sthayi Meda* leading to rise in circulating lipids, whereas in *Medoroga* there occurs increase in *Sama Sthayi Medo Dhatu*. However both can be present in a patient as it is a result of *Medo Dhatvagni Mandya*. *Medoroga* being a physical entity can be differentiated from Hyperlipidemia, as lipid disturbance can never be apparent clinically till it becomes chronic or leads to some physiological defects which include *Medoroga* also.

From Table 3, 4, 5 and 6 it is clear that, *Lekhana Vasti* found statistically effective on all parameters except Lipid profile. Lipid profile is associated with *Asthayi Meda* & other objective parameters are associated with *Sthayi Meda*. Significant effect on Body weight, BMI & circumference measurement was seen which proves that *Lekhana Vasti* have affected

Sthayi Meda more effectively. As mentioned earlier that symptoms of *Medoroga* are mainly due to vitiation of *Kapha, Medodushti, Medodhatvagnimandhya, Amarasa, Avarana of Vata* and subsequent *Dhatu Kshaya*. Lekhana Vasti is having *Sneha, Meda, Kleda Upashoshana, Deepana, Pachana, Tikshna, Lekhana, Ruksha & Kapha-Vatahara* properties on virtue of its *Rasapanchaka* dominance, which results in the relief of *Angachalatva*, *Alasya*, *Nidradhikya*, *Swedadhikya*, *Daurgandhya*, *Snigdhangata* and *Angagaurava*. *Kshudrashwasa* can also be attributed to the *Srotoshodhana* caused by *Vasti* thus removing *Avaranajanya Vata Prakopa*.

Vasti being best *Vatahara* treatments the reduction in *Atipipasa*, *Atikshudha* may be attributed to vitiated *Vayu* correction which is known to cause *Jatharagni Sandhukshana*[6] & *Trisha*[6].

Probable mode of action:

Vasti Chikitsa has been referred as *Ardhachikitsa* as it influences the whole body and removes the vitiated *Vata dosha* along with *Pitta* and *Kapha. Lekhana Vasti* possess *Deepana, Pachana, Kapha Vatahara,* and *Lekhana* property, basically it is a *Tikshna Shodhana* and is indicated in *Medovriddhi*.[7] It removes vitiated *Dosha*s from whole body[8] thus causes *Srotoshodhana*[9] and hence breaks the *Samprapti* of *Medoroga*.

CONCLUSION

On the basis of this clinical trial, it can be concluded that Hyperlipidemia is a disorder of *Medo Dhatu dushti*, which can be studied under the broad umbrella of *Medoroga*. Disease found more prevalent in persons of *Vata Kapha prakriti*. Sedentary lifestyle & occupation has much more importance in incidence of the disease. In present study *Triphaladi Kwatha Lekhana Vasti* found statistically effective on all parameters except Lipid profile, therapy showed significant effect on Body weight, BMI & circumference measurement which proves that *Lekhana Vasti* have affected *Sthayi Meda* more effectively. In this clinical trial *Lekhana Vasti* was found statistically insignificant on lipid profile parameter which might be due to short duration of therapy, as *Hyperlipidemia* is a metabolic disorder with multi system involvement to cause raised lipids, it involves long chain of defect right from *Jatharagni* to *Dhatvagni* level. To break this long chain of defects *(i.e. Samprapti)* long duration of treatment is needed.

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