AYU

Clinical Research

Clinical evaluation of *Lekhaniya Kashaya Vasti* in the management of *Sthaulya* (obesity)

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Abstract

Background: Obesity is considered the world's oldest metabolic disorder. It is not a single disease entity, but a syndrome with many causes including combination of genetic, nutritional and sociological factors. The World Health Organization (WHO) considers obesity as "Insidious, creeping pandemic which is now engulfing the entire world". Diet and life-style play a significant role both in the development and control of obesity *Sthaulya* (obesity). In Ayurveda, *Acharyas* have mentioned about the use of *Lekhaniya Vasti* to manage the *Sthaulya*. **Aim:** To evaluate the efficacy of *Lekhaniya Kashaya Vasti* in patients of *Sthaulya*. **Materials and Methods:** A total of 70 patients of *Sthaulya* were registered. Further they were divided into 2 groups each having 35 patients. In Group I (*Lekhaniya Kashaya Vasti*) group out of 35 patients 32 and in Group II (*Pathya*) group out of 35 patients 33 completed the follow-up. **Results:** In Group I, mean change was observed in body mass index (*P* < 0.001), waist hip ratio (*P* < 0.001). Overweight (*P* < 0.001), *Kshudraswas* (breathlessness) (*P* < 0.001) and *Nidraadhikyata* (excessive sleep) (*P* < 0.001) which is statistically significant in comparison with Group II. **Conclusion:** Trial drug is very good combination for *Medoghna* activity.

Key words: *Lekhaniya Vasti*, metabolic disorder, obesity, *Pathya*, *Sthaulya*

Introduction

Obesity is a global problem; affecting estimated 300 million people world-wide its prevalence is increasing in both developed and developing countries throughout the world.[1] Obesity is a world-wide epidemic that is characterized by excess adipose tissue and that contributes to numerous chronic diseases and early mortality.[2-5] This epidemic has received both national and international attention due to obesity's detrimental impact on health, the enormous economic burden it imposes and its increasing prevalence.[6] The present epidemic of overweight and obesity in the whole world is an unintended consequence of the economic, social and technological advances realized during the past several decades.[7] With the onset of the industrial revolution increase in the average body size of the population is an additional concern to health care professional. Now a day in fast pace life people are more inclined to food which low in cost, palatable and readily available in prepackaged

forms, but it serves high caloric density resulting in obesity. Labor-saving technologies like electronic devices in home have greatly reduced the amount of physical activity that used to be the part of everyday life in olden days, have further promoted a sedentary life-style, particularly among children. The elevating Body Mass Index (BMI), particularly caused by abdominal or upper-body obesity, has been associated with a number of diseases and metabolic abnormalities, many of which have high morbidity and mortality.

Objective

The objective of the study is to evaluate the efficacy of *Lekhaniya Kashaya Vasti* in patients of *Sthaulya* on subjective, objective and biochemical parameters.

Materials and Methods

The present study was carried out at Kaya Chikitsa Out Patient Department and Indoor Patient Department of Sir Sunder Lal Hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi between the periods of June 2009 to July 2010. A total of 70 patients of *Sthaulya* were divided into 2 groups in each group 35 patients were registered, in Group I out of 35 patients 32 and in II group out of 35 patients 33 completed the follow-up.

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Ethical consideration

The Institutional Ethical Review Committee of Banaras Hindu University approved the study (Ref. No. Dean/(Ay.) 2008-09/612). A specially prepared informed consent was maintained and sensitive issues, confidentiality, the privacy and safety of subjects were protected throughout the trial.

Study design

This is a randomized controlled stratified, open level study.

Inclusion criteria

* The patients age range between 20 and 60 years
* The patients having clinical signs and symptoms of *Sthaulya*
* The patients having BMI in between 25 and 39.99 kg/m^2.

Exclusion criteria

* Patients below the age of 20 years and above 60 years
* Patients with hypothyroidism
* Patients undergoing long-term steroid therapy
* Patients with diabetes and malignant hypertension
* Patients with evidence of renal, hepatic and cardiac involvement
* Patients with BMI more than 40 kg/m^2 and less than 25 kg/m^2.

Every patient was registered after fulfilling the inclusion criteria underwent assessment of symptoms and different components of weight, BMI, anthropometric parameters.

Follow-up study

A total of three follow-ups were done at the interval of 1 month each and all the subjective and objective parameter were recorded each time.

Study groups

Treatment schedule for Group I (n = 32)

In this group, *Lekhaniya Kashaya Vasti* was given to total 35 registered patients and out of 35 patient 32 completed the course.

Contents and preparation of the *Lekhaniya Kashaya Vasti*

It has been formulated from different Ayurvedic texts on the basis of their properties which are described under *Sthaulya Chikitsa* and its contents are as follows:

Chitraka (*Plumbago zeylanica* L.) 2 g, *Mustaka* (*Cyperus rotundus* L.) 2 g, *Shunthi* (*Zingiber officinale* Roscoe.) 2 g, *Aamalaki* (*Emblica officinalis* Gaertn.) 2 g, *Haritaki* (*Terminalia chebula* Retz.) 2 g, *Vibhitaka* (*Termenalia bellirica* Roxb.) 2 g, *Vidang* (*Embelia ribes* Burm. f.) 2 g, *Guggul* (*Commiphora mukul* (Stocks) Hook.) 3 g, *Apamargatandul* (*Achyranthes aspera* L.) 2 g, *Amrita* (*Tinospora cordifolia* (Thunb.) Miers) 2 g, *Arjun* (*Termenalia arjuna* (Roxb.) Wight and Arn.) 2 g, *Bilwa* (*Aegle marmelos* (L.) Correa. ex Roxb.) 2 g, *Vacha* (*Acorus calamus* L.) 1 g, *Katuka* (*Picrorhiza kurroa*) 1 g.

In addition to all contents of *Lekhaniya Kashaya*, the following drugs were added in the *Lekhaniya Kashaya Vasti* prepration:
* *Saindhava Lavana*-10 g,
* *Madhu* (Honey)-10 g,
* *Gomutra* (Cow urine)-100 ml,
* *Tila Taila* (Sesame oil)-100 ml

Process of administration of *Lekhaniya Kashaya Vasti*

Langhana therapy-light meal (*Yusha, Manda, Krishara*).

Deepana-Chitraka Churna 1.5 g two times in day with luke warm water before meal for 3 days.

Pachana-Chitrakadi Vati 2 Tablet (500 mg) two times in day after meal for 3 days.

Snehana Karma-Abhyanga with *Tila Taila* was followed by *Swedana Karma* (*Sarvanga Nadi Sweda*) starting from day 1st to 16th day.
* From 4th day of treatment-*Tila Taila Anuvasana Vasti* was given
* 5-7th day-*Lekhaniya Kashaya Vasti*
* 8th day-*Tila Taila Anuvasana Vasti*
* 9-11th day-*Lekhaniya KashayaVasti*
* 12th day-*Tila Taila Anuvasana Vasti*
* 13-15th day-*Lekhaniya Kashaya Vasti*
* 16th day-*Tila Taila Anuvasana Vasti*.

Duration

This procedure was repeated once in every month consecutively for period of 3 months.

Treatment schedule for Group II (n = 33)

To this group, the *Pathya Ahara-Vihara* was given and out of 35 registered patients 33 completed the course. General scheme of *Pathya* which was advised to the patients [Table 1].

The calorific value of this diet was estimated. It provides 800-1100 kcal/day with 9 g fibers, 40 g fat, 50 g protein and 100 g carbohydrate.

Energy consuming practices in *Pathya* groups

Patients were advised to practice regular exercise. Here are some specific energy consuming practices in *Pathya* group (as per the Ayurverdic texts).

Morning	Jogging or skipping for 30 min or
	Stepping up and down for 30 min
	Yogasana for 30 min or
	Fast walking for 1 h
	Unction with barley or *Bajra* powder
Lunch	After lunch walking for 15 min
Dinner	After dinner slow walking for 15 min

Patients were advised to sleep only 5-6 h during night and avoid sleep during day time. Patients were totally prohibited to take sweet and salty items, fried items, fast food, *Chhole*, *Rajma, Urad*, meat, milk products, cold drinks, chocolate, alcohol substances, fruits, dry fruits, curd, pickles, *Papad*, potato, sweet-potato, bread, butter, *Paneer*, fermented items etc.

Clinical assessment of the disease

Subjective criteria

Angachalatva
* Absence of *Chalatva*-0
* Little visible movement after fast movement-1
* Little visible movement even after moderate movement-2
* Movement after mild movement-3
* Movement even after changing posture-4

Kshudra Shwasa
- No Dyspnea-0
- Dyspnea after heavy works but relieved soon and up to tolerance-1
- Dyspnea after moderate works but relieved later and up to tolerance-2
- Dyspnea after little works but relieved later and up to tolerance-3
- Dyspnea after little works but relieved later and beyond tolerance-4
- Dyspnea in resting condition-5.

Table 1: Specified low caloric diet in *Pathya* group

Time	Food stuff	Amount	Weight
7.00 am	Warm water	1 glass	200 ml
8.00 am	Tea (cow's milk without sugar)	1 cup	150 ml (75 ml milk+75 ml water)
12.00 pm	Wheat, *jwar* (sorghun), *bazara* (pearl millet), *makka* (miaze) flour roti (without oil and ghee)	4 chapati	60 g
	Vegetables of bottle guard, brinjal, cabbage, drum-stick, ivy gaurd, ridge guard, spinach	1 bowl	100 g
	Green gram pulses or red gram pulses	1 bowl	30 g
	Salad-cabbage, tomato, cucumber, reddish white	1 small plate	25 g
4.00 pm	Coconut water/*Yav sattu/Manda* (gruel)	1 cup	200 ml
7.00 pm	*Mudga yush* (green gram water)	2 bowl	300 ml
	Takra (butter milk) (or)	2 bowl	30 ml
	Tomato+spinach soup	2 bowl	300 ml
	Takra (butter milk)	2 bowl	30 ml
	Tomato+drumstick soup	2 bowl	300 ml
	Takra (butter milk) (or)	2 bowl	30 ml
	Wheat flour or barely or maize roti	3	45 g
	Vegetable	1 bowl	100 g
	Wheat flour+*Bajra* (pearl millet) flour *Roti*	3 chapati	45 g
	Vegetable	1 bowl	100 g

Gatrasada
- No fatigue-0
- Little fatigue in doing hard work-1
- Moderate fatigue in doing routine work-2
- Excessive fatigue in doing routine work-3
- Excessive fatigue even in doing little work-4.

Atikshudha
- Person not at all taking food-0
- Person taking food in less quantity once a day-1
- Person taking food in less quantity twice in a day-2
- Person taking food in moderate quantity twice in a day-3
- Person taking food in normal quantity twice in a day-4
- Person taking food in excessive quantity thrice in a day-5.

The assessment was carried out before starting the treatment and at each 3 follow-ups of 30 days and the improvement was assessed on the basis of percentage relief and statistical evaluations.

Criteria for assessment of overall effects
For the gross assessment of the result obtained with the clinical trial, the response of the treatment was determined in terms of:

Subjective improvement
Patients were specifically asked about feeling of well-being and improvement in *Angachalatva*, *Atishudha*, and *Kshudra Shwasa* at each follow-up of treatment.

Clinical improvement
Reduction in weight, BMI, arm circumference, Waist Hip Ratio (WHR) was noted at each follow-up.

Hematological and biochemical assessment
Lipid profile, liver function test value was recorded before and after the treatment in registered cases to evaluate the nature and extent of change in relation to course of disease. Hemoglobin in g%, total leucocytes counts, differential leucocytes counts, Erythrocyte Sedimentation Rate (ESR), serum creatinine, blood urea and blood sugar values were recorded before and after the treatment in registered cases to evaluate the safety profile of the drug.

Statistical analysis
The data collected were transferred on master chart showing various items/variables in columns and subjects in rows. The analysis of data was performed using statistical software SPSS version 16 and it is developed by International Business Machines Corporation.

Table 2: Effect of therapy on subjective parameters in 65 patients of *Sthaulya*

Group	Parameters	BT	AT1	AT2	AT3	*t*	*P*
I (*n*=32)	*Angchalatva*	2.33±1.13	1.56±0.98	0.67±0.84	0.44±0.78	8.90	<0.05
	Kshudra Shwasa	1.83±1.09	1.44±1.04	0.72±0.82	0.33±0.59	10.29	<0.05
	Gatrasada	2.44±1.19	1.22±0.88	0.67±0.59	0.33±0.48	7.91	<0.05
	Atishudha	4.11±1.18	3.67±0.90	4.06±0.23	3.89±0.32	0.78	>0.05
II (*n*=33)	*Angchalatva*	1.75±0.91	1.25±0.97	0.80±0.83	0.70±0.66	6.18	<0.05
	Kshudra Shwasa	1.80±1.00	1.30±0.87	0.65±0.81	1.45±0.94	1.79	>0.05
	Gatrasada	2.50±1.14	2.00±0.72	1.60±1.09	1.85±1.18	2.67	>0.05
	Atishudha	3.50±1.35	3.70±1.03	3.70±0.73	3.95±0.88	1.37	>0.05

Data: Mean±SD, BT: Before treatment, AT 1: After treatment 1st follow-up 1 month, AT 2: After treatment 2nd follow-up 2 months, AT 3: After treatment 3rd follow-up 3 months

Intra-group (within the group) comparison
To test the significance of mean of difference of paired observations (before treatment v/s after treatment) paired *t*-test was applied.

Inter-group comparison (between the groups)
In case of more than two independent groups, one-way analysis of variance was applied and value of *F* test was determined, whenever *F* test resulted statistically significant, *post-hoc* test was applied for multiple comparisons, identifying significant pairs of groups.

Results

In symptoms like *Angachalatva*, significant mean reduction was observed and inter group comparison was not significant whereas in *Kshudra Shwasa*, *Gatrasada*, *Atipipasa* symptoms significant mean reduction was observed and Group I was more effective than Group II and on inter group comparison Group I was significant than Group II [Tables 2 and 3].

For an individual, obesity is usually the result of an imbalance between calories consumed and calories utilized. For the present study *Lekhaniya Vasti* was selected to manage the disease *Sthaulya*. In whole, with the use of *Lekhaniya Vasti*, highly significant mean reduction in weight, BMI and WHR were observed in Group I as compare to Group II while in Group II mean weight, BMI and WHR are remained more or less similar at every follow-up and on inter group comparison Group 'I' was better than Group 'II' [Tables 4 and 5].

In the present clinical study statistically no change was observed in blood urea, blood sugar, serum creatinine and liver function test after trial therapy. Significant mean reduction was observed in serum Low-Density Lipoprotein (LDL), serum triglycerides, Very Low Density Lipoprotein (VLDL) and cholesterol level in I group than Group II, whereas in level of serum High-Density Lipoprotein (HDL) no significant change was observed after trial therapy in both the groups [Tables 6 and 7]. Safety profile of the drug serum bilirubin, serum glutamic oxaloacetic transaminase, serum glutamic-pyruvic transaminase, alkaline phosphate, serum creatinine and blood urea, there was no

Table 3: Comparative effect of therapy on subjective parameters in 65 patients of *Sthaulya* (Comparison between the groups on difference of BT and AT by one way ANOVA test)

Parameters	F	P	Significance
Angchalatva	2.37	>0.05	NS
Kshudra Shwasa	6.81	<0.001	HS
Gatrasada	7.65	<0.001	HS
Atishudha	0.99	>0.05	NS

ANOVA: Analysis of variance, HS: Highly significant, NS: Non significant, BT: Before Treatment, AT: After Treatment

Table 5: Comparative effect of therapy on objective parameters in 65 patients of *Sthaulya* (Comparison between the groups on difference of BT and AT by one way ANOVA test)

Parameters	F	P	Significance
Weight	67.26	<0.001	HS
BMI	21.68	<0.001	HS
WHR	20.86	<0.001	HS

ANOVA: Analysis of variance, BMI: Body mass index, WHR: Waist heap ratio, HS: Highly significant, NS: Non significant

Table 4: Effect of therapy on objective parameters in 65 patients of *Sthaulya*

Group	Parameters	BT	AT1	AT2	AT3	t	P
I (*n*=32)	Weight	80.22±14.46	77.06±13.82	73.03±13.43	69.06±12.65	15.32	<0.01
	BMI	32.72±4.35	31.43±4.14	29.77±3.95	29.97±3.84	13.20	<0.01
	WHR	0.89±0.04	0.87±0.05	0.86±0.05	0.84±0.05	7.47	<0.05
II (*n*=33)	Weight	74.40±9.16	74.25±9.30	74.60±9.25	74.95±9.16	1.11	>0.05
	BMI	31.43±3.53	31.20±3.94	31.57±3.64	31.73±3.65	1.37	>0.05
	WHR	0.88±0.05	0.88±0.05	0.88±0.05	0.89±0.05	1.82	>0.05

Data: Mean±SD, BT: Before treatment, AT 1: After treatment 1st follow-up 1 month, AT 2: After treatment 2nd follow-up 2 months, AT 3: After treatment 3rd follow-up 3 months, BMI: Body mass index, WHR: Waist heap ratio

Table 6: Effect of therapy on lipid profile test in 65 patients of *Sthaulya*

Group	Parameteres	BT	AT	Diff	t	P
I (*n*=32)	HDL (mg/dl)	41.97±8.63	41.12±6.41	0.86±9.02	0.40	>0.05
	Triglyceride (mg/dl)	179.54±40.72	142.09±21.4	37.43±32.14	4.95	<0.05
	Cholesterol (mg/dl)	197.11±22.73	187.49±14.5	9.62±11.00	3.71	<0.05
	LDL (mg/dl)	123.18±20.74	119.9±15.3	3.28±7.18	1.93	>0.05
	VLDL (mg/dl)	36.47±8.25	33.76±5.64	2.71±7.46	1.54	>0.05
II (*n*=33)	HDL (mg/dl)	39.78±4.09	39.14±3.86	0.63±0.64	1.26	>0.05
	Triglyceride (mg/dl)	162.41±54.44	162.44±46.9	0.04±32.33	0.006	>0.05
	Cholesterol (mg/dl)	214.59±38.76	221.63±30.1	7.04±23.18	1.35	>0.05
	LDL (mg/dl)	123.49±30.07	126.89±27.0	3.40±12.57	1.21	>0.05
	VLDL (mg/dl)	39.25±13.84	42.92±14.23	3.66±11.00	1.49	>0.05

Data: Mean±SD, HDL: High-density lipoprotein, LDL: Low-density lipoprotein, VLDL: Very low density lipoprotein, AT: After treatment, BT: Before treatment

significant change in the level of these biochemical parameters within the both groups [Tables 8-10].

Discussion

Probable mode of Action of *Lekhaniya Kashaya Vasti*

- Most of the time there is presence of *Ama* at *Dhatu* level, on starting *Vasti* schedule with *Anuvasan Vasti*, it can increase the *Ama* so just to prevent the formation of *Ama* and to maintain the *Samaagni*, *Deepana-Pachana* therapy was given
- As a whole the effect of *Vasti* is encolinic (action on tissue of colon), endcolonic (action inside colon) and diacolonic (for systemic action). The mean retention time of *Lekhaniya Kashaya Vasti* observed was 35 ± 4.5 min. Thus *Vasti Dravyas* when reaches in large and small intestine get absorbed from intestinal mucosa, further, due to *Laghu, Ushna* and *Tikshna Guna* (properties) of *Vasti*

Dravaya, obstruction of channels are broken down the and morbid material from all over the body are expelled out, thus breaks the pathogenesis of disease *Sthaulya* (obesity)[8]

- *Vasti* help in *Vatanulomana* by *Tikta* (bitter), *Katu* (astringent) *Rasa* (taste) and *Tikshna Guna* present in trial drug, thus helps in the correction of passage of *Apana Vayu* and these qualities irritate the intestine leading to increased contraction of intestine hence provides less time for absorption of fat from intestine. *Vasti* therapy may be stimulator for many intraluminal, luminal and whole body function[9]
- Trial drug possess cholagogue property, *Tikta, Katu Rasa, Tikshna* properties irritate the intestine leading to increased propulsive movement of intestine.[10] Hence, provides less time for absorption of fat from intestine
- *Dravyas* present in the trial drug possess choleretics action which causes excretion of bile which further leads to decrease absorption of fat from intestine[10]
- Trial drug has, *Kutki,* have irritant property which damage the structure of villi in intestine hence causes decreased capacity for absorption[11]
- Sesamum oil has *Katu* and *Tikta Rasa* property. Due to this, it reduces excessive *Meda* of the body. It also contain *Agnideepaka* and *Vata Nashak* property. *Agnideepaka* property enhances the *Jathragni* as well as *Dhatwagni*. Excessive *Abaddha Meda* will change in *Baddha Meda* due enhancement of *Jatharagni*[12]
- *Tikshna Guna* acts on *Srotas* (channels) immediately and pierces the smallest cells of the vessels and removes the obstruction caused by lipids.[13] These *Gunas* also activate the *Jatharagni* and *Dhatvagni* and maintain their status.[14] *Tikta, Katu Rasa, Laghu, Ushana* properties present in trial drug are very useful for *Ama Pachana,* so by means of these properties digestion of *Ama,* restoration of

Table 7: Comparative effect of therapy on Lipid profile in 65 patients of *Sthaulya* (Comparison between the groups on difference of BT and AT by one way ANOVA test)

Parameters	*F*	*P*	Significance
HDL (mg/dl)	0.42	>0.05	NS
Triglyceride (mg/dl)	6.84	<0.005	HS
Cholesterol (mg/dl)	0.84	>0.05	NS
LDL (mg/dl)	7.59	<0.005	HS
VLDL (mg/dl)	3.72	>0.05	NS

ANOVA: Analysis of variance, HDL: High-density lipoprotein, LDL: Low-density lipoprotein, VLDL: Very low density lipoprotein, HS: Highly significant, NS: Non significant

Table 8: Effect of therapy on liver function test in 65 patients of *Sthaulya*

Group	Parameters	BT	AT	Diff.	*t*	*P*
I (*n*=32)	S. bilirubin (mg/dl)	0.75±0.17	0.67±0.12	0.07±0.24	1.36	>0.05
	SGOT (U/L)	35.94±3.03	30.61±5.31	5.33±5.13	4.40	<0.05
	SGPT (U/L)	30.61±5.64	29.78±5.28	0.83±3.53	1.00	<0.05
	S. alk. phosphate (U/L)	67.33±21.81	64.44±18.32	2.88±5.59	2.19	<0.05
II (*n*=33)	S. bilirubin (mg/dl)	0.68±0.22	0.71±0.14	0.02±0.29	0.31	>0.05
	SGOT (U/L)	31.20±7.10	27.45±5.96	3.75±5.38	3.11	>0.05
	SGPT (U/L)	31.50±5.81	30.00±5.09	1.50±2.03	3.29	<0.05
	S. alk. phosphate (U/L)	65.21±18.28	62.94±15.72	2.26±5.53	1.78	>0.05

Data: Mean±SD, S. Bilirubin: Serum bilirubin, S. alk. phosphate: Serum alkaline phosphate, SGOT: Serum glutamic oxaloacetic transaminase, SGPT: Serum glutamic pyruvic transaminase, BT: Before treatment, AT: After treatment

Table 9: Effect of therapy on other biochemical parameters in 65 patients of *Sthaulya*

Group	Parameters	BT	AT	Diff.	*t*	*P*
I (*n*=32)	Blood urea (mg/dl)	30.78±6.25	28.33±5.31	2.45±9.48	0.05	>0.05
	Serum creatinine (mg/dl)	0.69±0.18	0.60±0.18	0.09±0.17	2.32	>0.05
	Blood sugar (mg/dl)	92.34±11.38	102.72±7.96	10.38±13.89	3.17	<0.05
II (*n*=33)	Blood urea (mg/dl)	29.70±6.66	28.94±5.42	1.45±9.22	0.71	>0.05
	Serum creatinine (mg/dl)	0.71±0.16	0.63±0.17	0.08±0.16	0.71	>0.05
	Blood sugar (mg/dl)	92.55±11.75	100.15±6.93	7.60±12.97	2.62	<0.05

Data: Mean±SD, BT: Before treatment, AT: After treatment,

Table 10: Comparative effect of therapy on other biochemical parameters in 65 patients of *Sthaulya* (Comparison between the groups on difference of BT and AT by one way ANOVA test)

Parameters	*F*	*P*	Significance
Blood urea (mg/dl)	0.25	>0.05	NS
Serum creatinine (mg/dl)	0.53	>0.05	NS
Blood sugar (mg/dl)	0.78	>0.05	NS

ANOVA: Analysis of variance, NS: Non significant

Agni (Deepana) at the *Dhatu* level, removal of excessive *Kledaka Kapha* takes place. *Tikta* and *Katu Rasa* are also *Kleda* and *Meda Nashaka*.[15,16] *Tikta* and *Kashaya Rasas* have *Lekhana Guna* that scraps out excessive *Kapha* and *Meda* from *srotas*. In addition to *Lekhana*, *Kashaya Rasa* also has the property of *Shoshana*[17,18] which absorbs the excessive fluids and lipid substances caused by hypercholesterolaemia. *Laghu Guna* acts as *Kaphahara*, reduces the tissue weights *(Langhana)*[15,19] and clears the channels of the body *(Srotoshodhana)*. All *Dravyas* are *Ushna* in *Virya*, which oppose any increment of *Kapha* and *Medas* by the *Vilayan* property.[18,20]

Conclusion

In present clinical study, significant reduction in BMI and WHR was seen in Group I as compared to Group II. The *Lekhaniya Kashaya Vasti* is effective ($P < 0.001$) for weight reduction. Hence, it can be concluded that trial drug is a very good combination for *Medoghna* activity.

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हिन्दी सारांश

लेखनीय कषायबस्ति का स्थौल्य में चिकित्सकीय मूल्यांकन

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स्थौल्य विश्व की प्राचीनतम संतर्पण जन्य व्याधि हैं, यह एक व्याधि नहीं बल्कि रोग समूह हैं । स्थौल्य अष्टनिन्दित पुरुषों में से एक हैं जिस पर सबसे अधिक ध्यान देने की आवश्यकता हैं, इसका मुख्य कारण अनियमित आहार–विहार हैं । अतः आहार एवं जीवनशैली स्थौल्य की उत्पत्ति एवं नियन्त्रण में मुख्य भुमिका अदा करते हैं । स्थौल्य कई प्रकार की व्याधियों जैसे हृदय रोग, मधुमेह, उच्चरक्तचाप, अर्बुद आदि व्याधियों का जनक कहा जा सकता हैं । आधुनिक चिकित्सा में स्थौल्य के लिये कोई विशिष्ट चिकित्सा उपक्रम उपलब्ध नही हैं, और जो चिकित्सा उपलब्ध हैं, उसके अनेक दुष्परिणाम हैं किन्तु आयुर्वेदिक संहिताओ में स्थौल्य की चिकित्सा में लेखनीय बस्ति का उल्लेख किया हैं । कुल पंजीकृत ७० रोगियों को दो वर्गों में विभाजित किया गया और प्रत्येक वर्ग में ३६–३६ रोगियों को रखा गया, तत्पश्चात प्रथम वर्ग में ३२ ने एवं दूसरे वर्ग में ३३ रोगियों ने चिकित्सा पूर्ण की । प्रथम वर्ग मे बी.एम.आइ. और डब्लु.एच.आर. में अच्छा लाभ प्राप्त हुआ, परन्तु दुसरे वर्ग में पहले की अपेक्षा कम लाभ हुआ । इस प्रकार प्रथम वर्ग भाराधिक्य, अतिपिपासा, अतिक्षुधा, क्षुद्रश्वास, अंगचलत्व, स्वेदाधिक्य, गात्रसाद, निद्राधिक्य को कम करने में उपयोगी पाया गया जबकि दुसरे वर्ग में अल्प लाभ प्राप्त हुआ ।