

Evaluating the Lekhana Basti's Effectiveness in the Modified Kalabasti Pattern for Managing Sthoulya Vis-A-Vis Obesity

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Abstract: *Background:* Sthoulya in ayurveda is the most common santharpanotha vyadhi and one among the ashtaninditiya purusha. The condition sthoulya is similar to that of obesity described in western medical science. Obesity is a state of excess adipose tissue and is characterized by increased body mass index of more than 30 kg/m². *Objective of the study:* To evaluate the efficacy of Lekhanabasti in a modified kalabasti pattern in the management of sthoulya vis-a-vis obesity. *Methods:* Study design: Single group, open clinical study with pre and post - test design with sample size 53. *Intervention:* Lekhaneeya gana kashaya niruha basti with Murchhita tila taila as the sneha dravya and the material of anuvasana basti was administered during first 9 days of intervention in a modified pattern of 15 basti in 9 days. Lekhaneeya gana kashaya was started on 10th day of intervention after the completion of basti, 45 ml in three equally divided doses before administration food given with equal quantity of warm water. *Results:* Data was recorded and assessed before intervention (day 0), after basti (10th day), after intervention (30th day). Intervention showed significant results in individual parameters such as Weight (p value 0.001), BMI (p value 0.001), Hip circumference (p value 0.001), Waist circumference (p value 0.001), Waist Hip Ratio (p value 0.001) also in additional parameters such as Mid arm circumference (p value 0.006), Mid thigh circumference (p value 0.006), Dourbalya (p value 0.006), Nirutsaha (p value 0.001) and Shwasakruhrata (p value 0.034). Intervention showed non significant results in additional parameters such as Dourgandhya (p value 0.687), Atikshudha (p value 0.123), Atipipasa (p value 0.714) and Atisweda (p value 0.167). *Conclusion:* An attempt was made to evaluate the efficacy of Lekhana basti in modified kalabasti pattern in the management of sthoulya. Lekhanabasti in modified kalabasti pattern along with Lekhaneeyaganakashaya internally showed significant results in reducing signs and symptoms of sthoulya.

Keywords: sthoulya, lekhanabasti, lekhanagana, kala basti

1. Introduction

An increase of meda and mamsa dhatu results in pendulous movement of abdomen, buttocks and breasts. This causes utsaha hani in the individual disproportionate with his physical growth, such a person is called atisthula.¹ The condition sthoulya is similar to that of obesity described in western medical science. Obesity is a state of excess adipose tissue and is characterized by increased body mass index of more than 30 kg/m²²

Ayurvedic texts advise apatarpana as the main line of treatment³ Where in ushna, teekshna, kaphahara and medohara line of treatments are administered. In sthoulya therapeutic procedures also form main line of treatment parallel to internal medications. Rooksha, ushna and teekshna basti are suggested for sthoulya chikitsa and lekhanabasti is considered as best therapy for sthoulya.⁴⁻⁵ Lekhana or karshana basti helps to reduce meda, kapha and kleda from srotas by its veerya and helps to alleviate vitiated vata and normalize the function of agni and vayu. Previous studies have shown that the lekhanabasti in yoga basti pattern is found to be effective in sthoulya. However it is hypothesised that basti given for longer duration has to be more effective. Hence the present study was taken up to evaluate the efficacy of lekhanabasti in modified kalabasti pattern. Kala basti is modified by minimising the number of days into 9 from 15 days as per the reference available.

Objective:

To evaluate the efficacy of Lekhana basti in the pattern of modified kalabasti in the management of sthoulya vis-a-vis obesity.

2. Materials and Methods

Source of data: Subjects were selected from the OPD and IPD of Government Ayurveda Medical College and Hospital, Mysuru, Government Hi – Tech Panchakarma Hospital, Mysuru and other referral sources.

Method of collection of data: The selected subject's detail profile was prepared as per the proforma designed for the same purpose. A written informed consent was taken from subjects at the time of registration. In the present study, 53 subjects were registered. There were 3 dropouts and the study was completed in 50 subjects.

Diagnostic Criteria:

- 1) Body Mass Index (BMI): subjects with BMI >30 kg/m².
- 2) Waist circumference: >80 cm in Women &>90 cm in Men.
- 3) Waist – Hip ratio: > 0.8 in Women &> 1 in Men.

Inclusion Criteria:

- 1) Subjects of all gender between the aged 18 to 50 years were selected.
- 2) Both fresh & treated cases were selected.

The definition of fresh and treated cases included:

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A – freshly detected and untreated cases of Sthoulya.
 B – established and treated cases of Sthoulyawho had voluntarily discontinued the treatment for at least a week.
 C – established and treated cases of Sthoulyafor whom treatment was stopped and flush out period of a week was allowed.

Exclusion Criteria:

- 1) Co morbidity of systemic diseases which interfere with intervention like IHD, uncontrolled Diabetes mellitus and uncontrolled Hypertension were excluded.
- 2) Obesity caused as secondary to hypothyroidism were excluded.
- 3) Subjects unfit for basti karma such as co morbidity of rectal pathology like hemorrhoids, fissure and fistula.
- 4) Subjects who did not have proper bowel control were excluded.
- 5) Pregnant& lactating women were excluded.

Ethics: Ethics clearance was obtained form Institutional Ethics Committee before initiation of the study.

3. Statistical Methods

Study Design: It was a single group open clinical trial with pre, mid and post test design.

Intervention: Lekhaneeya gana kashaya niruhabasti with Murchhita tilaitaila as the sneha dravya and the material of anuvasana basti was administered during first 9 days of intervention in a modified pattern of 15 basti in 9 days. Lekhaneeya gana kashaya was started on 10th day of intervention after the completion of basti. Lekhaneeya gana kashaya 45 ml in three equally divided doses before administration food given with equal quantity of warm water after the completion of basti procedure (i. e. from 10th day) for 21 days.

Table 1: Showing schedule of lekhana basti:

	1 st day	2 nd day	3 rd day	4 th day	5 th day	6 th day	7 th day	8 th day	9 th day
Morning	A	N	N	N	N	N	N	A	A
Evening		A	A	A	A	A	A		

Assessment Criteria:

1) Objective parameters:

Body weight
 Waist circumference
 Waist – Hip ratio
 BMI

2) Additional Parameters:

Mid Arm circumference
 Mid thigh circumference
 Nirutsaha
 Atikshudha
 Atipipasa
 Atisweda
 Dourbalya
 Dourgandhya
 Shwasakrichrata

Mid test assessment - After the completion of basti (10th day)

Post test assessment - After the completion of intervention (30th day).

Statistical Methods:

The results were analyzed statistically by using below statistical methods: -

- 1) Descriptive statistics
- 2) Cramer’s V Test
- 3) Contingency coefficient
- 4) Repeated measures ANOVA using SPSS for windows

Investigations

The diagnosis and assessment of the study did not involve any mandatory investigations. However necessary blood investigations such as Hb%, TC, DC, ESR, FBS, PPBS, Thyroid function test and Ultrasonography of pelvis and other necessary investigations such as UPT and RFT were done in required subjects.

Assessment schedule:

The assessment was done on following 3 schedule:

Pre test assessment - Before the commencement of intervention (day zero).

4. Observations and Results

Table 2: Observations and incidence of obesity related to personal history and disease:

Parameter	Group with Maximum incidence	No. of subjects out of 53
Age	41 - 50 years	25 (47%)
Gender	Female	47 (89%)
Physical activity involved in occupation	Moderate physical activity	34 (64%)
Socio economic status	Upper Middle	36 (68%)
Food pattern	Normal quantity with increased frequency	22 (42%)
Predominant rasa consumed	Amla, lavana, Katu	31 (59%)
Daytime sleep	Present	12 (22.64%)
Agni	Tikshagni	19 (36%)
Vyayama Shakti	Madhyama	30 (56%)
Irregularity in menstrual cycle in women subjects	Irregular	16 (30%)

4.1 Results

Table 3: Showing results in objective parameters of sthoulya:

Parameter	F value	p value	Remark
Weight	146.67	.001	S
BMI	40.08	.001	S
Hip circumference	67.32	.001	S
Waist circumference	114.40	.001	S
Waist Hip Ratio	36.68	.001	S
Mid Arm circumference	31.02	.001	S
Mid thigh circumference	104.89	.001	S

Table 4: Showing results in Additional parameters of sthoulya:

Parameter	Cramer's V value	p value	Remark
Dourbalya	.263	.006	S
Dourgandhya	.071	.687	NS
Atikshudha	.167	.123	NS
Ati pipasa	.067	.714	NS
Ati sweda	.154	.167	NS
Nirutsaha	.320	.001	S
Shwasakrichrata	.213	.034	S

Intervention showed significant results in individual parameters such as Weight (p value 0.001), BMI (p value 0.001), Hip circumference (p value 0.001), Waist circumference (p value 0.001), Waist Hip Ratio (p value 0.001) also in additional parameters such as Mid arm circumference (p value 0.006), Mid thigh circumference (p value 0.006), Dourbalya (p value 0.006), Nirutsaha (p value 0.001) and Shwasa kruchrata (p value 0.034).

Intervention showed non significant results in additional parameters such as Dourgandhya (p value 0.687), Atikshudha (p value 0.123), Atipipasa (p value 0.714) and Atisweda (p value 0.167).

5. Discussion

Kapha dosha role: Excessive intake of madhura, amla, snigdha, guru ahara and vihara like diwaswapnaand avyayama leads to kaphaprakopa. By samanyavisheshasiddhanta and ashrayaashrayibhava between meda and kapha, it is evident that kaphavruddhi causes medavruddhi.

Medovaha srotodusti: There is sanga type of srotodusti in sthoulya. Sanga is caused due to the excessive vitiation of kapha and medadhatu, as a result there will be shoshana of the following dhatu after meda.

Role of Agni: Hyperactive stage of jataragni present in sthula, easily digests even heavy food in a very short period of time. Bhutagnipaka extends up to dhatu level. The ingestion of food with predominance of prithvi and jalamahabhuta causes over production of meda. Agnimandhya atdhatwagni level causes vruddhi of preceding dhatu and kshaya of succeeding dhatu. In sthoulya there will be medadhatwagnimandyawhich causes depletion of further dhatu after meda.

Sthoulya iskruchrasadyavyadhi due to need for multi dimensional management and its tendency to reccure.

Involvement of beejadosha in sthoulya, or sahaja sthoulya can be considered asadhya.

Basti itself is treatment of vata and further admixture of lekhanadravya with basti contribute to alleviate vata, kapha and meda by virtue of its ushnavirya, tikshna and lekhanaguna.

6. Conclusion

Lekhana basti in a modified kalabasti pattern alongside internal administration of Lekhaneeyaganakashaya, shows significant efficacy in reducing obesity related symptoms, including body weight and circumference measurements. this intervention demonstrates the potential of ayurvedic treatments for obesity management. This study provides insight into Ayurveda based interventions for obesity highlighting lekhan basti's potential in managing obesity symptoms and offering a nonsurgical holistic treatment option.

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