

A Comparative Clinical Study of *Lekhana Basti* and *Shamana Sneha (Triphaladi Taila)* in the Management of *Sthaulya* (Obesity)

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Abstract

Obesity is not merely a cosmetic problem but a severe threat to health which causes Hypertension, Diabetes Mellitus, Osteoarthritis etc. According to *Ayurveda*, it can be co-related to *Sthaulya* following the methodology given by *Acharya Charaka*. It's a serious problem and needs a permanent solution. *Ayurveda*, the 5000 year old science of healthy living has solution to this current problem. In the *Ayurvedic* perspective, these should be a major shift in awareness. *Ayurveda* does not treat obesity; it treats a person who is obese or overweight. There are many treatments available but *Panchkarma* is said to be very effective treatment for any diseases, so present study was carried out to evaluate efficacy of *Lekhana Basti* which was described by *Acharya Sushruta*. In another group *Shamana Sneha* in the form of *Triphaladi taila* was taken for study which is also described in *Samhita*. Both groups played significant role in all parameters of obesity without side effect. We found highly significant results in Weight Gain, *Kshudra-Swas*, *Gatra gaurav*, *Atikshudha*, *Ati pipasa* etc. and also in objective parameters like chest, abdomen, arm, mid-calf circumference etc. in comparison of two groups *Lekhana Basti* is Effective therapy in the management of *sthaulya*.

Keywords

Lekhana Basti, Shamana Sneha, Sthaulya



Greentree Group

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INTRODUCTION

Charakacharya described the features of healthy body, having equal distribution of *Mamsa* (muscular tissue) and properly distributed buildup¹. But these days majority of people are not in *Sama Samhanana* (well distributed body builds up). Overweight and Obesity are the chief complaints for the humans beings of the present era. Obesity is a chronic disease that is highly prevalent and that poses a serious risk for the development of diabetes mellitus, hypertension, cardiovascular diseases, musculoskeletal disorders especially osteoarthritis and certain forms of cancer^{2,3}.

According to figures of W.H.O in 2008, more than 1.4 billion adults (i.e. age of 20 and older) were overweight. Among these, over 200 million men and nearly 300 million women were obese. The figure showed that 35% of adults (aged 20 and over) were overweight in 2008 and 11% were obese. It was more surprising that in 2011, more than 40 million children under the age of five were overweight. By and large more than one in ten was obese in the world's adult population. In addition it was found that women more likely to be obese than men⁴.

At least 2.6 million people each year die as a result of being overweight or obese⁵. As per W.H.O., overweight and obesity are the fifth leading risk for global deaths⁶.

According to a study report, the obesity in India has increased by about 20% from 1998 to 2005. Presently almost 1 in 5 men and over 1 in 6 women are overweight. In some urban areas the rate is as high as 40%⁷.

Sthulya is *Santarpanjanya vyadhi* and *Apatarpan* is the treatment for *Santarpanjanya Vyadhi*. Taking into consideration all the treatment modalities in *Ayurveda* '*Basti*' seems to be the best, because it is a fastest *Apatarpan*, when prepared with *Apatarpak* drugs. In *Apatarpan* also being more specific '*Lekhan*' is the treatment which can remove abnormally increased *Sneha*⁸.

So, in light of above references from classics, *Lekhan Basti* and *Shaman sneha (Triphaladi Taila)* were selected for the management of *Sthaulya* (obesity).

AIMS AND OBJECTIVES

- ★ To study the efficacy of *Lekhana Basti* in the management of *Sthaulya*.
- ★ To study the efficacy of *Shamana Sneha* in the management of *Sthulya*.

- ★ To compare efficacy of “*Lekhana Basti*” and “*Shamana Sneha*”, in the management of *Sthaulya*.

ETHICAL CLEARANCE

The present study has been cleared by Institutional Ethics Committee (IEC No. GAAC/7-2014/15, dated 18/02/2014). Written consent of the patient was taken before starting the treatment. Basic information of the disease and treatment was given to the patients.

MATERIALS AND METHODS

Criteria for selection of the patient:

- ★ A special performa for the present study was prepared in which, detailed history and physical examination on the basis of principles of Ayurveda and modern science, was recorded.
- ★ Patients were selected from O.P.D. and I.P.D. of Govt. *Akhandanand Ayurveda* Hospital, as well as Govt. *Maniben Ayurved* Hospital, Ahmedabad.

Inclusion criteria:

- ★ Patients between the age of 16 – 60 years with signs and symptoms of *Sthaulya* (obesity) were selected.

- ★ Patients having BMI (Body Mass Index) more than 25 and ≤ 35 were taken for the study.

Exclusion criteria:

- ★ Patients suffering from pulmonary disease, cardiac diseases, endocrine disorders and complicated cases were not taken for study.
- ★ Age below 16 years and more than 60 years.
- ★ Patients having B.M.I. more than 35.

Diagnostic criteria:

- ★ Classical signs and symptoms of the disease as mentioned in the Ayurvedic texts as well as modern books.

GROUPING

Group -A *Lekhana Basti*:

Fifteen patients were taken and treated with *Lekhan Basti* [Table 1] (as *kal Basti* pattern) in following dose and duration.

Kal Basti i.e., 15 *Basti* were administered to each patient. (*Anuvasana Basti* in the beginning and two at the end with six *Niruha* and six *Anuvasana Basti* on alternate days were administered, for 15 consecutive days.)

- ★ **Duration:** 15 days

★ **Niruha Basti:** 480 ml *Lekhan Basti* was given empty stomach in the morning.

★ **Anuvasan Basti:** 120 ml *Anuvasan Basti* of *Triphaladi Taila* (as per group 2) was given after meal.

Group –B *Shamana Sneha*:

15 patients were taken in this group.

★ **Drug:** *Triphaladi Taila* [Table 2]

★ **Dose:** 20 ml/day.

★ **Anupana:** *Mudag Yusha*.

★ **Administration time:** *Annakala Prakankshit* (10:00-1:00 noon)

★ **Duration:** 15 days

Table 1 Contents of *Lekhana Basti*

S.No.	Name of drug	Proportion
1	<i>Triphala kwath</i>	200 ml
2	<i>Gomutra</i>	100 ml
3	<i>Makshik</i>	80 ml
4	<i>Yava Kshar</i>	5 gm.
5	<i>Ushkadi prativap</i>	10 gm.
6	<i>Saindhav</i>	5 gm.
7	<i>Triphaladi taila</i>	80 ml

ASSESSMENT CRITERIA

A special proforma was prepared to study the etiopathogenesis, response to the given treatment and any complications. The effect of therapy was assessed by counting the

scores before and after 12 weeks of treatment.

Table 2 Contents of *Triphaladi Taila*

Sr. No.	Plant Name	Botanical Name	Part
1	<i>Haritaki</i>	<i>Terminalia chebula</i>	1 part
2	<i>Bibhitaki</i>	<i>Terminalia belerica</i>	1 part
3	<i>Aamlaki</i>	<i>Embelica officinalis</i>	1 part
4	<i>Ativisha</i>	<i>Aconitum heterophyllum</i>	1 part
5	<i>Murva</i>	<i>Marsdenia tenacissima</i>	1 part
6	<i>Trivrut</i>	<i>Operculina terpenanthum</i>	1 part
7	<i>Chitrak</i>	<i>Plumbago zeylanica</i>	1 part
8	<i>Vasa</i>	<i>Adhatoda vasica</i>	1 part
9	<i>Nimba</i>	<i>Azadirachta indica</i>	1 part
10	<i>Aargvadh</i>	<i>Cassia fistula</i>	1 part
11	<i>Vacha</i>	<i>Acorus calamus</i>	1 part
12	<i>Haridra</i>	<i>Curcuma longa</i>	1 part
13	<i>Daruharidra</i>	<i>Berberis aristata</i>	1 part
14	<i>Saptaparna</i>	<i>Alstonia scholaris</i>	1 part
15	<i>Guduchi</i>	<i>Tinospora cordifolia</i>	1 part
16	<i>Indravaruni</i>	<i>Citrullus colocynthis</i>	1 part
17	<i>Pippali</i>	<i>Piper longum</i>	1 part
18	<i>Kushtha</i>	<i>Saussurea lappa</i>	1 part
19	<i>Sarshap</i>	<i>Brassica alba</i>	1 part
20	<i>Sunth</i>	<i>Zingiber officinalis</i>	1 part

Subjective parameters

Bharavridhhi (Weight Gain), *Chaladarstanasphik* (Flabbiness in Hip-Abdomen-Breast), *Gatragauravata* (Heaviness in whole body), *Ayathopachaya*, *Gatradaurgandhya* (Foul smell of body), *Atikshudha* (Excessive Hunger), *Atipipasa* (Excessive Thirst), *Kshudrashwasa* (Dyspnoea on Exertion), *Svedadhikya* (Excessive Sweating), *Atinidra* (Excessive Sleep), *Gatrasada*, *Snigdhatrata*, *Alpavyayama* (Inability to bear the strain of Exercise), *Alpavyavaya* (Difficulties in sexual intercourse).

Objective parameters

Objective criteria were mainly assessed on the basis of body weight; BMI, body circumferences, and skin fold thickness before starting the treatment and after completion of treatment were assessed in terms of percentage relief and statistical evaluations.

ASSESSMENT OF TOTAL EFFECT OF THERAPY

1. < 25% Relief- Unchanged.
2. 25-50% Relief- Mild improvement.
3. 50-75% Relief- Moderate improvement.
4. >75% Relief- Marked improvement.
5. 100 % Relief- Complete remission.

STATISTICAL ANALYSIS

Student's "t" test (paired and unpaired) was applied for assessment of the results.

SELECTION OF THE DRUG AND PREPARATION

In the pathology of *Sthaulya*, *Kapha* is main *Dosha* and *Meda* is main *Dushya*, while *Agnimandya* takes place at *Medodhatvagni* level. Therefore, that type of drug/therapy should be selected which has *Kapha* and *Medanashaka* property and has efficacy to correct the function of *Medodhatvagnimandya*. For *Medovridhhi*, there are number of formulations and treatment modalities available in *Ayurveda*. *Panchakarma* is having its own importance and it acts by the action of the drug and the way it is administered. Thus the role of drug is more important for *Panchakarma* therapy. Drug selected for the present study i.e., *Lekhan Basti* is based on quotation of *Maharshi Sushruta*⁹. However, *Taila* used for *Anuvasana* is selected from *Bhavprakash Madhykhand* 34/16, *Sthaulya Adhikar*.

The *Karma* in which the medicine should be given through the anal canal by a definite method is known as *Basti Karma*. It is a very important treatment in *Ayurveda* compared to all other treatments so, it is described as *chikitsardh* by *Charaka*¹⁰.

In *Ayurveda* there are many varieties of the *Basties*, which are dependent on the amount of quality of the substance and the expected action of the *basti*. *Lekhan basti* is mentioned by different *Acharyas* for *Santarpanotha Vyadhi*, *Kaphaja Roga* and *Kaphavrita Vata*¹¹.

Sthaulya is also among these. The word *lekhana* itself indicates its action. "*Lekhanam Karshanam*"¹². Thus *Lekhan* is nothing but a process of emaciation while *Sharangadhara* considered *lekhana* in a wide sense i.e., *lekhan* is a process of drying up or desiccation of all excess *Dosha*, *Dhatu* and *Mala* i.e. "*Deha Vishosanam*"¹³. This means that the drug which rarefies the protoplasmic contents of tissue cells and thus gradually clears the system of its deranged constituents is known as *lekhana*.

In another group *shaman sneha* has been selected. *Aacharya Charaka* has indicated *taila* in the management of *sthaulya* in *Snehadhyay*¹⁴.

This sentence clearly indicates that *taila* should be given to the patients of *Sthaulya*. *Aacharya Bhavmishra* has clearly mentioned *Triphaladi taila* pan in the treatment of *Sthaulya*¹⁵.

Above sentence mentions that *Triphaladi taila* should be given by any route to the

patient of *Sthulya*. So in another group *Triphaladi Taila* pan was selected. However time for the *Shamana Sneha* was selected as per *Aacharya Charaka* "*Annakal Prakankshati*"¹⁶.

OBSERVATIONS

Totally 30 patients were registered in the present study, 15 in each group and all of them completed the treatment. Among 30 patients 11 patients in age group of 41-60 and 10 patients in age group 18-30 were found. According to sex 90% were female and 10% were male. Among them 70% patients belonged to Hindu community and out of them 93.33% patients were married. From these, maximum 76.67% patients were housewives followed by 16.67% as working women. Among 30 patients 50% patients were of Lower Middle class. According to *prakriti* 76.67% Patients were of *Vata-Pittaja Prakriti*.

According to *Sara* 100% patients were of *Madhyama Sara*. According to *Samhanan* 90.0% were having *Madhyama Samhanan*. But they were having complains of Fatigueness, due to *Mansashaitiya* and *Abaddha* depot fat leading to lethargy. Out of 30 patients 80% patients showed *Madhyama Satva* followed by 20% patients

with *Avara Satva*. Out of 30 patients 73.33% patients showed *Pravara Abhyavaharan Shakti* followed by 26.67% with *Madhyama* and 96.67% patients showed *Madhyama Jarana Shakti* followed by 3.33% patients with *Avara*. In the patients of *Medoroga* due to *Avarana* by *Meda* and *Kapha*, there is *Samana Vayu Prakopa* leading to *Agnisandhukshana*. According to *koshtha* 46.67% patients showed *Madhyam* nature of *Koshtha* whereas 36.67% patients with *Krura Koshth*. *Krura Koshtha* onset is due to *Samana Vayu prakopa* in this diseased individual. According to *Agni* 73.33% patient showed *Tikshmagni*, followed by 33.33% patients of *Vishamagni*. *Agnisandukshanas* due to *Saman Vayu Prakopa* and varied *Agni* due to involved *Dushyas*.

According to dominant rasa in diet 76.67% were found to have *Madhura Rasa* dominant diet followed by 60.0% patients *Amla Rasa* dominant. Out of 30 patients 56.67% patients were having *Adhyashana* in their Dietary Habits, followed by 50% patients with *Vishmashana*. According to *Diwaswap* 60.0% patients showed Day time sleeping and maximum 60.0% patients showed about 8 hrs of sleep at night. Day time sleeping leading to *Doshprakopa* especially

formation of *Ama* which further causes *Apakva-Ama Rasa* and impaired further *Dhatuposhana*. *Avara Vyayama Shakti* was found in 43.33% of patients. In Impaired *Anna Rasa* leading to impaired nutrition of further *Dhatus*. Thus whatever the *Dhatus* are formed has *Shaithilya*.

Higher incidence of various *Nidanas* like 36.67% patients with *Gurvati Seven*, 73.33% patients with *Madhurati seven*, 40% had history of *Snigdhati seven*, 20% patients with *Payasa seven*, 83.33% with *Navanna sevana*, 73.33% with *Dadhi Sevana*, 73.33% *Atibhojana*, 10% *Shaiyya sukha*, 23.33% *Avyavaya*, 76.67% with *Avyayama*, 60.0% with *Diwaswap* and 33.33% with *Achinta* etc were found to be etiological factors in *Medoroga*. As an aggravating factor Delivery was found in 76.67% of patients, IUCD in 40.0% of patients, marriage in 36.67% of patients. *Bharavridhi* was seen 100% of patients; *Gatragaurav* was seen in 93.33%, *Kshudrashwasa* in 90%, *Svedadhikya* in 76.66% and *Atikshudha* in 73.33% patients.

RESULTS

Group A

In this group relief observed in *Alpavyavaya* was 37.50% which was insignificant. Relief observed in *Ayathopachaya* was 62.54%, *Gatradaurgandhya* 62.54%, *Atinidra* 59.88%, and *Snigdhatrata* 100%, respectively which was significant. Relief observed in *Bharavridhi* was 32.27 %, *Chalaudarstansphik* 32.02 %, *Gatragauravata* 74.82 %, *Atikshudha* 69.35%, *Atipipasa* 90.87%, *Kshudraswasa* 87.71%, *Swedadhikya* 84.61%, *Gatrasada* 84.61% and *Alpavyayama* 66.66%, respectively which was highly significant level ($P < 0.001$). [Table 3]

In this group 3.13 %, 5.03 %, 3.32 %, 2.05 %, 3.05 %, 1.95 %, 2.88% and 2.96% reduction was observed in Neck region, Mid Arm, Fore arm, Chest, Abdomen, Hip, Mid-thigh and Mid-calf circumference respectively, all the result were statically highly significant ($P < 0.001$) except Fore-arm ($P < 0.01$) average 4.42 % reduction was observed. In this group 0.34 %, 0.30 %, 0.27 %, 0.55 % and 0.28% in Biceps, Triceps, Scapular, Abdomen and Supra iliac Skin fold respectively. All the results were highly significant ($p < 0.001$) except supra iliac ($p < 0.05$) average 0.35 % result was reported. [Table 4]

Group B

Relief observed in *Bharavridhi* was 3.93%, in *Chalaudarstansphik* no relief was observed, improvement in *Alpavyavaya* was 40.11 % which was insignificant. In *Gatragauravata* 74.82% was observed, *Ayathopachaya* 52.63%, *Gatradaurgandhya* 61.54%, *Atikshudha* 64.17%, *Atipipasa* 85.47% , *Kshudraswasa* was 85.71%, *Swedadhikya* 77.53%, *Atinidra* 45.35%, *Gatrasada* 66.66%, *Snigdhatrata* 75.18 %, *Alpavyayama* 72.72 %, respectively which was highly significant. [Table 3]

In this group decrease in various body circumference i.e. Neck region, Mid arm, fore arm, Chest, Abdomen, Hip and Mid-thigh and Mid-calf was 2.65 %, 3.28 %, 0.86 %, 1.66 %, 2.57 %, 1.78%, 2.13% and 0.84% respectively circumference. All the results were statistically highly significant ($P < 0.001$), except Mid-calf ($P < 0.01$) and forearm ($p > 0.05$), average 1.97 % reduction was observed in the measurement of different body circumference. In this group 0.64 %, 0.78 %, 0.37 %, 0.43 % and 0.80% reduction was found in biceps, Triceps, scapular, Abdomen and Supra iliac skin fold respectively. All the result was highly significant ($p < 0.001$) except Triceps and

Scapular and supra-iliac. Average 0.60% reduction was observed. [Table 4]

Table 3 Showing effect of Therapy in Subjective Parameters. (Paired t- test)

Variable	Gr	Mean		MeanDi ff.	% Relief	SD±	SE±	T	P	S
		BT	AT							
<i>Bharavridhi</i>	A	2.07	1.40	.667	32.27	.488	.126	5.292	<0.001	HS
	B	1.53	1.47	0.066	3.93	0.258	0.066	1.00	0.334	NS
<i>Chaladarstansaphik</i>	A	2.78	1.89	.89	32.02	.333	.111	8	<0.001	HS
	B	1.00	1.00	0.00	0	0.00	0.00	0.00	1	NS
<i>Gatragauravata</i>	A	2.71	.14	2.57	94.833	.852	.228	11.29	<0.001	HS
	B	1.43	.36	1.07	74.82	.267	0.071	15.0	<0.001	HS
<i>Ayathopachaya</i>	A	2.67	1.0	1.67	62.54	.577	.333	5	0.038	S
	B	1.90	.90	1.00	52.63	0.00	0.00	+inf	<0.001	HS
<i>Gatradaurgandhya</i>	A	1.50	.25	1.250	83.33	.50	.25	5.0	0.015	S
	B	1.30	.50	.80	61.54	.422	.133	6.00	<0.001	HS
<i>Atikshudha</i>	A	1.86	.57	1.286	69.35	.488	.184	6.971	<0.001	HS
	B	1.87	1.20	.667	64.17	.488	.126	5.292	<0.001	HS
<i>Atipipasa</i>	A	1.37	.125	1.25	90.87	.463	.164	7.638	<0.001	HS
	B	1.17	.17	1.0	85.47	0.00	0.00	+inf	<0.001	HS
<i>Kshudrashwasa</i>	A	2.93	.36	2.57	87.71	.514	.137	18.735	<0.001	HS
	B	1.61	.23	1.38	85.71	.506	.140	9.859	<0.001	HS
<i>Svedadhikya</i>	A	2.6	.40	2.20	84.61	.422	.133	16.50	<0.001	HS
	B	1.38	.31	1.077	77.53	.277	.077	14.0	<0.001	HS
<i>Atinidra</i>	A	1.67	.67	1.0	59.88	.632	.258	3.873	0.012	S
	B	1.83	1.0	.833	45.35	.390	.112	7.416	<0.001	HS
<i>Gatrasada</i>	A	2.6	.400	2.20	84.61	.447	.20	11.0	<0.001	HS
	B	1.50	.50	1.0	66.66	0.00	0.00	+inf	<0.001	HS
<i>Snigdhatratra</i>	A	1.20	0.00	1.20	100	.447	.20	6	0.004	S
	B	1.33	.33	1.0	75.18	0.00	0.00	+inf	<0.001	HS
<i>Alpavyayama</i>	A	2.4	.80	1.60	66.66	.516	.163	9.798	<0.001	HS
	B	1.10	.300	.800	72.72	.422	.133	6.0	<0.001	HS
<i>Alpavyavaya</i>	A	2.00	1.25	.750	37.5	.500	.250	3.00	0.058	NS
	B	1.67	1.00	.67	40.11	.577	.333	2.00	.184	NS

Table 4 Showing effect of Therapy in Anthropometric Parameter (Paired 't' Test)

Variable	Group	Mean	MeanDif	%	SD±	SE±	t Value	P	S
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		BT	AT	f.	Relief					
Neck region	Gr. A	36.13	35.0	1.13	3.13%	.915	.236	4.795	<0.001	HS
	Gr. B	35.13	34.2	.93	2.65%	.88	.22	4.090	0.001	S
Mid arm	Gr. A	33.20	31.53	1.67	5.03%	.900	.232	7.174	<0.001	HS
	Gr. B	32.6	31.53	1.067	3.28%	.458	.118	9.025	<0.001	HS
Fore arm	Gr. A	25.93	25.07	.87	3.32%	1.06	.274	3.17	0.007	S
	Gr. B	23.27	23.07	.20	0.86%	.414	.107	1.87	0.082	NS
Chest	Gr. A	102.3	100.2	2.13	2.052%	1.125	.291	7.341	<0.001	HS
	Gr. B	102.4	100.7	1.73	1.66%	.458	.118	14.66	<0.001	HS
Abdomen	Gr. A	102.6	99.47	3.133	3.05%	.743	.192	16.328	<0.001	HS
	Gr. B	101	98.4	2.600	2.57%	.632	.163	15.92	<0.001	HS
Hip	Gr. A	112.9	110.7	2.20	1.95%	1.207	.312	7.059	<0.001	HS
	Gr. B	112.5	110.5	2.067	1.78%	.59	.15	13.484	<0.001	HS
Mid-thigh	Gr. A	57.87	56.20	1.67	2.88%	.976	.252	6.614	<0.001	HS
	Gr. B	56.33	55.13	1.20	2.13%	.414	.107	11.225	<0.001	HS
Mid-calf	Gr. A	38.13	37.0	1.13	2.96%	.834	.215	5.264	<0.001	HS
	Gr. B	35.40	35.7	.33	0.84%	.488	.126	2.646	<0.019	S
Skin Fold Thickness										
Biceps	Gr. A	2.91	2.9	0.009	.34%	0.002	0.0006	14	<0.001	HS
	Gr. B	3.12	3.10	0.018	.64%	0.007	0.002	9	<0.001	HS
Triceps	Gr. A	3.32	3.31	0.007	.30%	0.005	0.001	5.292	<0.001	HS
	Gr. B	3.063	3.039	0.023	.78%	0.024	0.006	3.704	0.002	S
Scapular	Gr. A	3.63	3.62	0.007	0.27%	0.005	.001	5.292	<0.001	HS
	Gr. B	4.014	4.029	-0.015	0.37%	0.129	0.033	-0.462	0.651	NS
Abdomen	Gr. A	3.65	3.63	0.019	.55%	0.006	0.001	11.30	<0.001	HS
	Gr. B	3.912	3.895	0.017	0.43%	0.004	0.001	14.66	<0.001	HS
Supra iliac	Gr. A	3.51	3.50	0.005	0.28%	0.005	0.001	3.5	0.004	S
	Gr. B	3.74	3.71	0.022	0.80%	0.021	0.005	4.015	0.001	S

Table 4 Overall Effect of the Treatment

Effect of therapy	GROUP A	GROUP B	TOTAL	%
Complete remission (100%)	2	0	2	6.66%

Marked improvement (75-99%)	6	0	6	20.0%
Moderate improvement (50-74%)	7	11	18	60.0%
Mild improvement (25-49%)	0	4	4	13.33%
Unimproved (0-24%)	0	0	0	-

Table 5 Comparative Effect Of The Treatment

Effect of therapy	GROUP A	%	GROUP B	%
Complete remission (100%)	2	13.33%	0	-
Marked improvement (75-99%)	6	40.0%	0	-
Moderate improvement (50-74%)	7	46.67%	11	73.33%
Mild improvement (25-49%)	0	-	4	26.67%
Unimproved (0-24%)	0	-	0	-

OVERALL EFFECT OF STUDY

In this study 6.66% patients got complete remission after treatment, 20.00% patients had marked improvement, 60.00% patients had moderate improvement and 13.33% patients had mild improvement while no patients remain unimproved after the treatment. [Table 5]

COMPARATIVE EFFECT OF THE TREATMENT

After this study in Group A 13.33% patients got complete remission while in group B no one patient had complete remission, in group A 40.00% patients got marked improvement whereas in group B no patients got marked improvement, in group A 46.67% patients got moderate improvement while in Group B 73.33 % patients got moderate improvement, in Group A, no patients were having mild improvement, whereas in Group B 26.67 % patients got Mild improvement, no patients remain unimproved in both Group. [Table 6]

DISCUSSION

Basti group provided better results in most of the parameters of obesity while *Shamana* group showed better results in reduction of Skinfold thickness than *Basti* group. These results may be because of *Shukshma guna* of *Taila*. *Taila* taken orally directly goes to all over body and works and expels *meda* out of body.

Basti keeps all the five types of *Vata* in their normal status by affecting its Seat-*Pakvasaya*. Thus it also reduces the vitiation of *Samana Vayu*. *Atikshudha* plays most important role in *Sthaulya*. Because due to obstruction by *Meda*, *Vata* remains in *Kostha* and through *Agni Sandhukshana* it causes *Atikshudha* which leads the person to *Adhyashana* and to take *Guru Snigdha Ahara*. It again causes Vitiation of *Meda* and production of *Ama*. In this way, this cycle goes on. Hence, it becomes very difficult to manage this disease but *Basti* controls the

Samana Vayu and breaks this cycle, thus helps in the management of this disease.

It is already discussed in *Basti* review that how *Basti Dravya* get absorbed from the colon and reaches at the cellular level. After reaching at cellular level, they perform the action of *Samprapti Vighatana* by virtue of its *Rasa*, *Guna*, *Virya*, and *Vipaka*. The drugs of *Lekhana Basti* have dominance of *Katu-Tikta-Kashaya Rasa*, *Laghu-Tikshna-Shukshma Guna*, *Ushna Virya* and *Katu Vipaka*. *Katu*, *Tikta*, *Kashaya Rasa* reduces *Kleda* hence they cause wasting of all the *Dhatus*. It also reduces *Kapha-Meda-Sweda Dushti* and thus helps in *Lekhana Karma*. Moreover *Tikta-Kashaya Rasa* reduces *Pitta Dushti* also.

Laghu Guna is *Vayu*, *Agni* and *Akasha*, *Mahabhuta Pradhana*. It causes *Krishata* and *Dhatukshya*. Reduction of over nourished *Dhatu* is the main aim of *Lekhana Karma* which helps in *Sthaulya*. *Sukshma guna* helps the drug to reach at cellular level because of its *Vayu*, *Akasha* and *Agni Mahabhuta* dominance. *Tikshna Guna* is dominated by *Agni Mahabhuta* and it break downs the *Dosha Sanghata* in *strotas*, thus it help in removing *Sanga* in *Strotas*. By removing *Sanga* it keeps *Sancharana marga* of *Vyana Vayu* in normal condition. Thus

Vyana Vayu can transport the nutrient to its related *Dhatu* and *Uttrotar Dhatu Nirmana* takes place properly. Hence the process of *Medovridhhi* is checked.

Ushna Virya is dominated by *Agni Mahabhuta* which is having *Laghu* and *Tikshna Guna*. *Ushna Virya* is responsible for the reduction of *Meda*. It is also having *Deepana-Pachana* and *Kapha-Vata Shamaka* property. By the virtue of *Deepana-Pachana Karma Basti Dravya* increases *Agni* at all levels and it reduces *Ama* and corrects *Medodhatvagni Mandya*. *Katu vipaka* due to its *Laghu Ruksha Guna* causes *Dhatu Kshaya* and reduces excessive *Meda Dhatu*. Moreover it pacifies increased *Kapha*.

Triphaladi Taila and Honey present in the *Lekhana Basti* reduces *Rasa-Raktagata Meda*. Most of the drugs of this *Basti* were having *Lekhana* property. *Lekhana Basti* due to its *Lekhana* property may cause *Dhatukshya* and other complications. But *Shilajit* present in it provides *Rasayana* effect against *Dhatukshya*. In this way *Basti Dravyas* reduces *Kapha-Vata Dushti*, increases *Agni*, digests the *Ama*, correct the *Medodhatvagni Mandya*, remove obstruction in *Medovaha srotas* and

nourishes *Uttar dhatus*. Thus, it becomes helpful in disease *Sthaulya*.

Triphaladi taila was used as *Abhyantara Sneha* during study. *Triphaladi taila* is having base of *Tila taila* and *Tila taila* contains polyunsaturated fatty acid (linoleic acid). Polyunsaturated fatty acid reduces cholesterol level, Thus *Triphaladi taila* helps in reducing cholesterol level. Increase sympathetic activity of *ushna dravya* stimulates the process of lipolysis, which accelerates the fat catabolism. It suggests that Increased *Agni* after *Ushna*, and *Ushna Drvyasadhita sneha* reduces *Medodhatvagnimandya* and checks the process of *Medovridhi*. It also increases the *Agni* at all levels and digests the *Ama*. Thus, it removes the obstruction in *Strotas*. Hence, the *Sanga* in *Medovaha strots* is removed and *Uttardhatu nirmana* takes place properly. In the *Samprapti* of *Sthaulya*, *Medodhatvagnimandya*, *Ama Rasa*, *Kapha-Vata pradhana Tridosha* play an important role, so from above discussion it is well understood that how *Shamana* becomes helpful in *Samprapti Vighatana* of *Sthaulya*. As *Shamana taila* directly removes the *meda* it reduces *Medovaha stroto Dushti*. Relief in *Medovaha Stroto Dushti* leads to relief in *Swedavaha Stroto Dushti* as *Sweda* is the

Mala of *Meda Dhatu*, Hence B group showed good result in *Medovaha* and *Swedavaha Srotodushti*. *Basti Dravya* reduces *Ama* by its *Deepana-Pachana* property.

CONCLUSION

Sthaulya is a *Dushya* Dominant *Vyadhi*. There is an involvement of all the three *Doshas* in *Sthaulya* but the vitiation of *Kapha-Vata* and *Meda* is of prime importance. *Basti* by its own property and because of properties of contents of *Lekhana Basti* corrects the path of *vata* and expels out *Kapha* and *Meda*-and checks *Medodhavagni Mandhya*. Hence, it is effective therapy in *Sthaulya*.

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