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**CLINICAL STUDY ON THE EFFECT OF *TRIPHALADI KAAL BASTI*
IN THE MANAGEMENT OF *STHOULYA ROGA* (OBESITY)**

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ABSTRACT

Introduction: In Ayurveda, obesity is considered as *Sthoulya*, means a person in whom excessive and abnormal increase of *Meda* along with *Mamsa Dhatu* in the body, which results into pendulous appearance of *Sphiga, Udara and Stana*. *Sthoulya* is one of the *Agnidusti Janit Vikara* mentioned in ayurvedic classics. Acharya Charaka has thrown light on the eight varieties of impediments which are designated as *Ashto Nindneeya Purusha*. Obesity is a medical condition in which excess body fat has accumulated and it shows its negative effect on health. WHO had used Body Mass Index (BMI) to define obesity. In this study, efficacy of *Triphaladi Kaal Basti* is observed in management of *Sthoulya Roga*. **Material and method:** This study is a single arm clinical study, conducted with sample size of 57. All the patients after proper evaluation were administered with *Triphaladi Kaal Basti* for a period of 16 consecutive days. Assessment of the patient was done on subjective and objective parameters before and after completion of treatment and assessed in form of statistical evaluations. Statistically, a significant result was observed in objective parameters i.e. Body weight, Body Mass Index, and Chest circumference while a significant result was observed in all subjective parameters. 75.43% of patients showed marked improvement. 24.57% of patients showed moderate improvement. Not a single patient with mild improvement and unchanged results. **Conclusion:** It can be concluded that *Triphaladi Kaal Basti* is effective in

management of unwanted *Meda Dhatu* deposition. The combination of *Triphaladya Taila* and *Triphaladi Kwath* in the form of *Kaal Basti* is significantly effective to reduce the weight, BMI and chest circumference and other subjective parameters of obesity.

Keywords: Obesity, Kaal Basti, Santarpanjanya Vyadhi, Sthoulya, Triphala

INTRODUCTION

In Ayurveda, obesity is considered as *Sthoulya*, means a person in whom excessive and abnormal increase of *Meda* along with *Mamsa Dhatu* in the body, which results into pendulous appearance of *Sphiga*, *Udara* and *Stana* [1]. The increased bulk is not matched by a corresponding increase in energy. In Ayurvedic literature, systematic classification of the disease *Sthoulya* is not available. Vagbhata [2] has mentioned three types of *Sthoulya* while describing the efficacy of *Langhana* therapy as given below: *Hina Sthoulya*-Mild degree of overweight. *Madhyama Sthoulya*: Moderate degree of overweight. *Ati Sthoulya*: Excessive state of overweight. *Sthoulya* is one of the *Agnidusti Janit Vikara* mentioned in ayurvedic classics. Acharya Charaka has thrown light on the eight varieties of impediments which are designated as *Ashto Nindneeya Purusha* [3]. *Atisthoulya* (*Medoroga*) comprises one of them. *Sthoulyaroga* is a disease of *Medo Dhatu Dushti*. Derangement of *Agni* or digestive power improperly formed '*Meda*' accumulation in the body causing *Sthoulyaroga*. It is a *Santarpana Janya Vyadhi*.

Obesity is a medical condition in which excess body fat has accumulated and shows its negative effect on health. WHO had used Body Mass Index (BMI) to define obesity [4].

$MI = \text{Weight in kilograms} / \text{height in meters}^2$ [2]. Particular bodies have made some modifications to the WHO definitions. BMI of 35 or 40 is severe obesity. BMI 40–44.9 or 49.9 is morbid obesity. BMI of 45 or 50 is super obese [5].

Modern science considers Obesity as a Nutritional disorder and its etiology is explained as excess fat accumulation because there is an imbalance between energy intake and expenditure. Obesity can be understood in the following ways:

1. Excess of adipose tissue deposition that imparts as obesity.
2. A body weight 20% or more than desirable/normal weight according to age, sex and height is regarded as obese.
3. Nowadays obesity is defined as $BMI > 25 \text{ kg/m}^2$.
4. Obesity may be defined as an abnormal growth of adipose tissue which is in three ways as:
 - ✓ Enlargement of fat cells in size (hypertrophic obesity)

- ✓ Increase in the number of fat cells (hyperplastic obesity)
- ✓ Combination of the above two.

Today is the era of modernization, people are taking highly fatty diet and preserved junk food regularly and lack of exercise, sedentary life style. These factors generally act by impairing the metabolism of an individual making them prone to series of disorders like “*Sthoulyaroga*”.

Nowadays there are so many drugs going to be used in the treatment of “*Sthoulyaroga*”. Long term treatment of these drugs will produce adverse effect on body. Hence, its necessary to have some definite and harmless solution to this problem. Panchakarma therapies in the field of Ayurveda disease management as gives radical cure to disease with holistic approach. In Ayurveda, *Basti Chikitsa* is most effective and result giving treatment for *Sthoulyaroga*. *Basti* given through the anal route goes into the intestine and from there the active properties of the *Basti* spread into the whole body. This therapy causes the reduction of excessive fat from all over the body right from the top to the bottom. *Triphaladi Kaal Basti* includes 10 *Anuvasana Basti* of *Triphaladi Taila* and *Niruha Basti* includes *Kwath Dravya* of *Triphaladi* Drugs. In this study, the effort was taken to evaluate the effect of *Triphaladi Kaal basti* in the management of *Sthoulyaroga*.

Materials:

The drug has been collected from an appropriate authentic source. Drug Standardization of Raw materials was done from a certified pharmacy.

Process of Drug Making (*Triphaladya Taila*): -

- *Triphala, Ativisa, Murva, Trivrit, Chitraka, Vasaka, Nimba, Aragvadha, Sadgrantha, Saptaparna, Nisa, Darunisa, Guduchi, Indrasuri, Krishna, Kustha, Sarsapa* and *Nagara* each drug were taken in equal parts. (i.e. 12 gm. each) [6]
- All drugs were compounded together along with water to prepare a *kalka*.
- This *Kalka* (in quarter part), *Murchita* sesame oil (1 litre) and decoction of *Surasadi* group of herbs (4 liters) were mixed together and cooked on slow heat. Thus, the medicinal oil called *Triphaladya Taila* is prepared.

Preparation of *Kwath*: -

- *Saindhava* 10gm and honey two *Prasrtas* (4 *Palas*) were taken.
- These two things were mixed homogenously with fatty material i.e. oil (2 *prasrtas*).
- When the mixture became homogenous, one *Prasrtas* paste was added, decoction five *prasrtas*, in the end additive material two *prasrtas*.

- Final prepared basti dravya was homogenous and warm (around 40 - 45⁰ C)

Method of Study:

This study is a single-arm clinical study, where the efficacy of *Triphaladi kaal basti* is observed in the management of *Sthoulya Roga*. A clinical study has been performed on a group of randomly selected patients from OPD & IPD in the Panchakarma department of Dr. D.Y.Patil Ayurved

College, Pimpri, Pune. The sampling technique used was purposive sampling. All the selected patients after proper evaluation were administered with *Triphaladi Kaal Basti* for a period of 16 consecutive days. *Basti* was administered in the pattern of *Kaal Basti* as shown below. Subjective and objective parameters were assessed before and after treating with Basti.

Pattern of Kaal Basti is as follows:

D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16
A	A	N	A	N	A	N	A	N	A	N	A	N	A	A	A

Where A= *Anuvasana Basti with Triphaladya Taila*; N= *Niruha Basti with Triphaladi Kwath*

- 1) **Poorva Karma:** *Sthanika Abhyanga* with *TilaTaila* followed by *Sthanika Sweda* was done for a duration of 15 minutes. For *Niruha Basti*, Patients were advised to remain empty stomach whereas for *Anuvasana Basti* patients were advised to have meal before the procedure.
- 2) **Pradhana Karma:** The patient were made to lie down on the table in the left lateral position with their left leg placed straight and right leg flexed at the hip and knee drawn upto the chest. Body was draped and the buttock, anal region were exposed so the basti can be administered easily. The Anus and the enema nozzle were lubricated with oil then one fourth of enema nozzle was

introduced in the anus slowly rightly following the curves of the spinal column, without shaking or trembling.

Thereafter the content of the enema can was injected to the rectum till little quantity of the liquid/Taila remains in the can, so that air may not go inside the body.

Then the nozzle was removed gradually form the anus, the therapist placed gentle strokes on the patient's buttocks for about a minute. Then, patient was asked to assume supine position gradually. In supine position he was asked to rub his palms briskly and at the same time therapist rubbed the patients sole vigorously.

- 3) **Pashchat Karma:** For *Niruha Basti-*

Patient excreted the medicine within few minutes of administration i.e. within one *muhurtha kala* (48 minutes). Light diet was advised after *Basti pratyagama*.

For Anuvasana Basti- The *Anuvasana Basti* gets evacuated within 12 hours of administration. Patients were advised to have light and nutritive meal during next meal time. Specific diet and certain restrictions on the movement were be imposed after the *Basti Chikitsa*. For all purposes like drinking, washing etc. warm water should be given.

Inclusion Criteria

- ✓ Patients having clinical symptoms -

Anga-chalatva, Kshudra shwasa, Swedadhikya, Daurgandhya, Snigdhangata, chala-sphik, udar, stana of sthoulya roga included in this study [7].

- ✓ Patient associated with diabetes mellitus and Polycystic Ovarian Syndrome.

- ✓ Age: 20-60 years.

Exclusion Criteria

- ✓ Patient associated with any other systematic disorders like cardiac disorders- Myocardial infarction, Hypothyroidism, Hypertension.
- ✓ Pregnancy and Lactation.

Treatment protocol – All the patient were given following treatment protocol

Form	Route of Administration	Material	Dose	Time	Duration	Followup
Basti	Through anal canal	<i>Triphaladi Kwath</i> as <i>niruha dravya</i> . <i>TriphaladyaTail</i> as <i>Anuvasan BastiDravya</i>	960ml approx. 120ml	Empty stomach (Once in a day-Morning). After meal (Once in a day)	16 days	1 st Followup: After 15 Day

Criteria of Assessment

Assessment of the patient were done on Subjective and objective parameters. The observations has been recorded before starting the treatment and after completion of treatment and assessed in form of statistical evaluations.

Subjective parameter includes *Anga-chalatva, Kshudra shwasa, Nidra Adhikya, Swedadhikya, Daurgandhya, Snigdhangata, Atipipasa, Atikshudha, Angagaurava*.

Objective parameter includes Body weight,

Body Mass Index, Chest, abdomen, hip, mid-thigh and mid arm circumference.

Observation

Maximum patients (42.10%) belonged to age group 30-39 yrs, followed by age group 40-49 yrs (26.31%), 19.29% patient belongs to age group 22-29 yrs and only 12.28% patients are from age group 50-59 yrs. Maximum patients (67%) were female and 33% patients were male. 60% patients were having mixed type of diet while remaining 40% patients with veg diet. 40%

patients were housewives, 14% were doing business, 12% were students, 9% were doing private jobs, 5% were officers and very few with other occupation.

Maximum number of patients (56.14%) with *vata-pitta prakruti*. 24.56% patients with *pitta-vata prakruti*, 7% with *kapha-vata prakruti*, 5.2% with *vata-kapha* and *kapha-pitta prakruti* each and only 1.7% patients with *pitta-kapha prakruti*.

86% patients are from middle socio-economic group. 7 % from lower and 7% from upper socio-economic group. Maximum number of patients (50.87%) with outside unhealthy food as *aharaj hetu*. Remaining 49.12% patients taking homemade food. 50.87% patients were having sedentary life

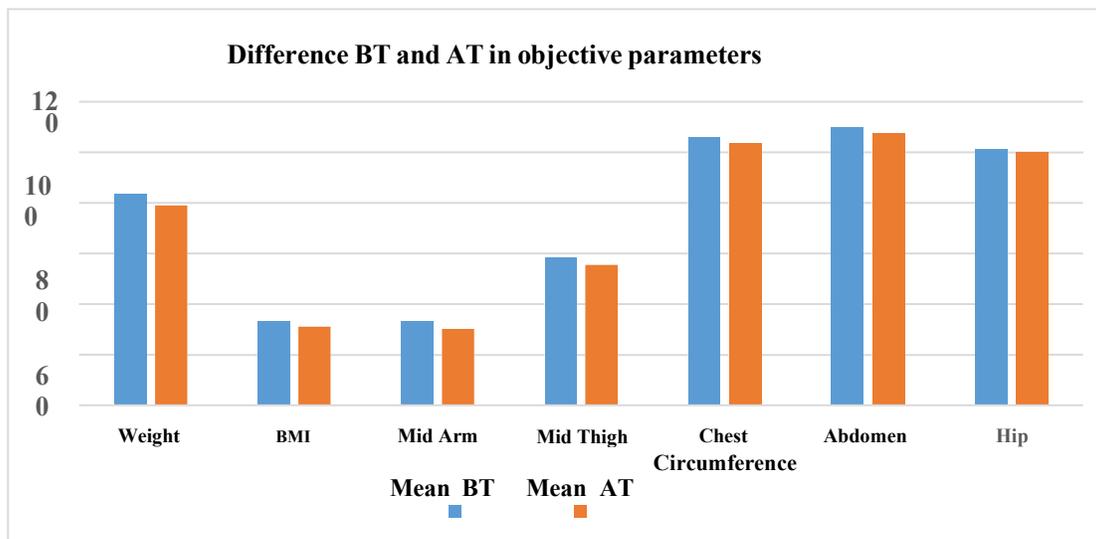
style. Remaining 49.12% patients were having normal life style. Maximum number of patients (52.63%) were having high stress. Remaining 47.33% patients having low stress.

RESULTS

In this study sample size is 57. On each sample 7 parameters were measured before and after treatment which are quantitative in nature. Other 7 parameters which are qualitative in nature are measured in 1 follow up. Out of these 7, 6 parameters are qualitative (ordinal) in nature and one is nominal. According to type of parameter the appropriate statistical tests were used.

Paired t test was applied to analyse the result for objective parameters. The observed result is as follows.

Parameter	Mean		S.D		T	P value
	BT	AT	BT	AT		
Weight	83.60	79.02	12.10	11.98	35.91	<0.001
BMI	33.19	31.20	3.32	3.28	19.16	<0.001
Mid Arm Circumference	33.08	30.21	2.89	2.83	13.17	<0.001
Mid Thigh circumference	58.27	55.54	7.70	7.82	10.54	<0.001
Chest circumference	105.75	103.67	12.77	13.35	4.81	<0.001
Abdomen circumference	109.72	107.61	1.77	11.04	3.27	0.002
Hip circumference	101.39	99.81	22.90	19.88	0.87	0.38



Result of before and after treatment of subjective parameter were analysed by using **Wilcoxon test**

Parameter	Negative ranks	Positive rank	ties	total	Test statistic	P value
Daurgandhya	57	0	0	57	-6.95	<0.001
Kshudra Shwasa	57	0	0	57	-7.107	<0.001
Anga gaurava	57	0	0	57	-6.85	<0.001
Ati Kshudha	57	0	0	57	-7.069	<0.001
Atipipasa	57	0	0	57	-7.429	<0.001
Daurbalya	57	0	0	57	-7.072	<0.001
Chala Udar/Stana	57	0	0	57	55.018	<0.001

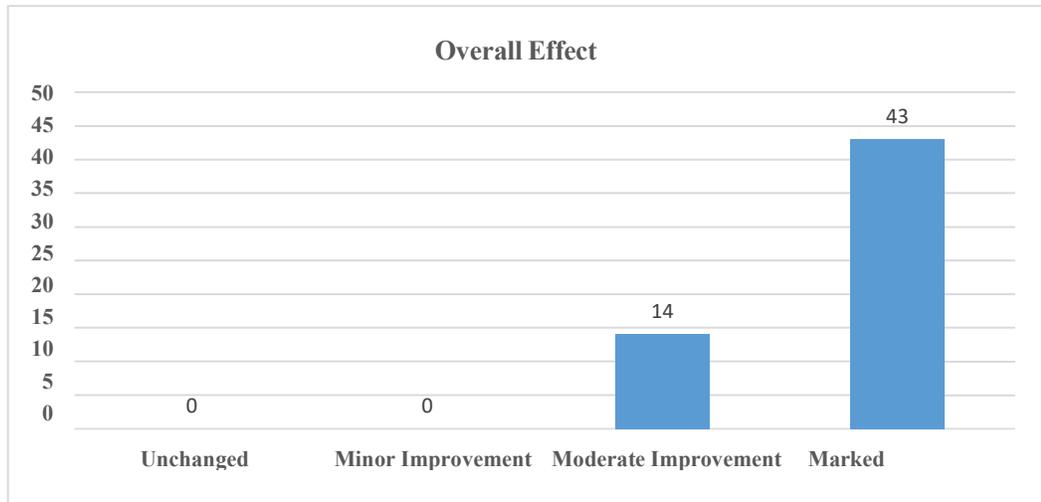
Interpretation - Negative rank indicates it reduces after treatment. Ties indicate it remains same. As in all patients, test statistics is in negative points, treatment is effective to reduce the subjective parameters.

Overall conclusion: As per above result of all parameters, Triphaladi Kaal basti is effective in the management of Sthoulyaroga

(obesity). Below table and graph reveals that, 75.43% patients shown marked improvement. 24.57% patients shown moderate improvement. Not a single patient with mild improvement and unchanged result.

Following table and graph shows the overall effect of the therapy.

Overall effect	Number of patients	Percentage
Marked improvement	43	75.43%
Moderate improvement	14	24.57%
Mild improvement	0	0%
Unchanged	0	0%



As per above result of all parameters, *Triphaladi Kaal basti* is effective in the management of *Sthoulyaroga* (obesity).

DISCUSSION:

Excessive intake of *Madhura Ahara* & *Guru-Snigdha Kaphavardhaka Ahara* (*Kapha* promoting diet), *Adhyashana*, *Avyayama* (sedentary life style), *Divaswapa* (habit of day nap), *Achinta* (care free attitude) and *Harsha* causes obstruction of *Srotas* by *Meda* vitiates *Vata Dosha* in *Koshtha* and flares up the *Agni*. This causes over eating and over production of *Rasa* and *Mala-Rupa Meda Dhatu* leading to *Sthoulya*. The line of treatment for *Medajaroga* is use of *Vataghna*, *Shleshma-Medohar*, *Ruksha-Ushna-Tikshna Basti*, *Ruksha Udvartana*, *Triphala*, *Takrarishta*, honey, *Bilvadi Kwath* (decoction), *Panchamoola*, *Shilajatu*, etc. [8].

In this study, *Triphaladi kaal basti* is used for management of *Sthoulya Roga*. The

Triphaladi Kaal Basti constitutes of *Anuvasan Basti* of *Triphaladya Taila* and *Niruha Basti* of *TriphaladiKwath*.

Triphaladya Taila is referred in Bhaishajya Ratnavali text in the chapter of *Medoroga*. Most of the drugs of this *Taila* has *Tikta*, *Katu*, *Kashaya Rasa*, *Katu Vipaka*. It has properties like *Laghu*, *Rukhsa*, *Shothahar*, *Pachana*, *Deepana*, *Srotoshodhana*, etc. *Shukshma Guna* of *Taila* helps for better penetration and liquefaction of fat from microchannels of the body.

After the administration of *Basti Dravya*, the *Dravyas* get absorbed from the colon and reach the cellular level. After reaching at the cellular level, they perform the action of *Samprapti Vighatana* by virtue of its *Rasa*, *Guna*, *Viryas*, and *Vipaka*. The drugs of *Triphaladya Taila* have dominance of *Katu-Tikta-Kashaya Rasa*, *Laghu-Ruksha*, *Tikshna*, *Shukshma Guna*, and *Katu Vipaka*. *Katu*, *Tikta*, *Kashaya Rasa*. It 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*. *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*. It is 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*. *Triphaladya Taila Anuvasana Basti* and *triphalaadi kwath Niruha* reduces *Rasa-Raktagata Meda*.

Triphala is an effective blood purifier that stimulates bile secretion as it detoxifies the liver, helps digestion and assimilation, and significantly reduces serum cholesterol and lipid levels throughout the body [9]. It has potential for use as antiobesity agents with desirable lipid-profile modulating properties.

Triphaladi Kwath Basti has properties of *Katu*, *Tikta*, *Kashaya Rasa*, *Lavana* (*Anurasa*). *Tikshna*, *Ushna*, *Laghu Guna*, *Ushna Virya*, *Katu Vipaka*. *Doshghanta* is *Kaphavata Shamaka*. It has properties like

Deepana, *Lekhana*, *Pachana*, *Anulomana*, *Malshodhak*, *Amapachana*, *Srotoshodhaka* (body channels cleanser), *Pachaka*, *Kapha-Medohara* that might have helped to reduce the overweight [10]. *Amasanchya* and *Srotorodha* are the fundamental cause of *Sthoulya*, having properties of clearing *Amasanchaya* and *Srotorodha* will lead to breakdown of pathology of *Sthoulya* (*Samprapti vighatana*).

In this way, the combination of *Triphaladi Kaal Basti* reduces *Kapha-Vata Dushti*, increases *Agni*, digests the *Ama*, correct the *Medodhatvagni Mandya*, remove obstruction in *Medovaha srotas*.

CONCLUSION

Sthoulya is a very popular disease in today's world which is causing physical, mental and social impact on the people who are suffering from this disease. It is generic occurring disease in middle age, females, married women and educated people. People's leading sedentary lifestyle and mostly housewives due to their unusual routine gets *Sthoulya*. The incidence of *Sthoulya* is more amongst the people who are used to *Sheeta*, *Madhura* and *Snigdha Ahara* (*Madhura Rasa*, *Sheet* and *Snigdha Guna* and *Abhishyandi Ahara*), which elevates the *kapha Dosha* and *meda -dusti*, causing the *vikara*.

The *Triphaladi Kaal Basti* constitutes of *Anuvasan Basti of Triphaladya Taila* and *Niruha Basti of Triphaladi Kwath*.

Triphaladi kwath is explained in Sushrut Samhita for *lekhana karma*, whereas *Triphaladya Taila* is explained in *Bhaishajya Ratnavali for Medoroga Chikitsa*. With this study we can conclude that the combination of *Triphaladi Kaal Basti* reduces *Kapha-Vata Dushti*, increases *Agni*, digests the *Ama*, correct the *Medodhatvagni Mandya*, remove obstruction in *Medovaha srotas*. It is significantly effective to reduce the weight, BMI and circumference and other subjective parameters.

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