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A Clinical evaluation of *Triphaladi Taila* oral administration 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 and Osteoarthritis etc. According to *Ayurveda*, it can be co-related to *Sthaulya*. *Taila pana* have been indicated in the patients of *Sthaulya* by various *Ayurvedacharyas*. In present study *Taila* was selected from *Bhavprakasha Medorogadhikara* (*Triphaladi Taila)*. All ingredients of *Triphaladi Taila* are having *Ushna, Tikshna* property which helps in removing *meda*. As per Modern science, increase fat consuming increases the bile production. Cholesterol esters of polyunsaturated fatty acids are more rapidly metabolized by liver and other tissues. It suggests that *Sneha* which contains poly-unsaturated fatty acids (*Tila taila*) becomes helpful in reducing *Rasa-Raktagata Meda* (Cholesterol) and when *Rasa-Raktagata Meda* is lowered body starts consuming *meda* which is accumulated in whole body.To Evaluate efficacy of *Triphaladi Taila* in the management of *Sthaulya*. Total 15 patients were registered and treated with *Triphaladi Taila.* Assessment was done based on the subjective and objective parameters after 15 days of treatment. The data obtained in clinical study was analyzed by using Student's "t" test. Significant results found in Subjective and Objective parameters i.e. BMI, body circumferences etc. *Shamana Sneha* (*Triphaladi Taila*) is effective therapy in the management of *Sthaulya* (Obesity).

Keywords: Obesity, *Shamana Sneha, Sthaulya, Triphaladi Taila*

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INTRODUCTION

Obesity is the modern era disease, which has covered almost all the parts on the globe. It is a disease itself & this disease works as a cause for several other diseases i.e. Diabetes, Heart disease, Stress, HTN, High cholesterol, some types of Cancers which are major health risk. Obesity is the reason for about 80% of Type 2 diabetes, about 70% of cardiovascular disease and 42% of breast & colon cancers[1]. So over all obesity is like a double edged two decades. The number of overweight children & adolescents has doubled. Lack of physical activities with increased intake of food, industrialization, stress and dietary habits etc. are the causes of obesity[2]. Dietary control, behavioral modification, drug therapy and surgical were the modes in which it is managed in conventional system[3]. In spite of its treatment, the success of treatment is mysterious[4]. At least 2.6 million people each year die as a result of being overweight or obese[5]. As per W.H.O., overweight and obesity are the fifth leading risk for global deaths[6]. Obesity can be studied under the heading of *Sthaulya* and it is well described in *Ayurvedic* texts. Disease has been classified under the heading of eight most denounced personalities. *Acharya Sushruta* has clearly mentioned that the disease *Sthaulya* occurs due to defect in *Rasa Dhatu*. But while explaining the pathogenesis clear involvement of *Meda Dhatu* has been mentioned. It is one of diseases where involvement of *Dushyas* is more predominant than the *Doshas*.

To evaluate the efficacy of *Shamana Sneha (Triphaladi Taila)* in the management of *Sthaulya* (Obesity).

MATERIALS AND METHOD

Criteria for selection of the patients:

Patients were selected from O.P.D. and I.P.D. of Govt. Ayurveda Hospital.

Inclusion criteria:

1. Patients between the age of 16 – 60 years with sign & symptoms of Sthaulya (obesity) were selected.
2. Patients having BMI (Body Mass Index) more than 25 and ≤ 35 were taken for the study.

Exclusion criteria:

1. Patients suffering from pulmonary disease, Cardiac diseases, Endocrine disorders, complicated cases were not taken for study.
2. Age below 16 years and more than 60 years.
3. Patients having B.M.I. more than 35.

Diagnostic criteria:

Classical signs & symptoms of the disease as mentioned in the Ayurvedic texts as well as modern medicine books.

ASSESSMENT CRITERIA

The effect of therapy was assessed by counting the scores before and after 15 days treatment with both subjective and objective parameters.

Subjective parameters

Bharavriddhi (Weight Gain), *Chala udarstanasphik* (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, Snigdhagatrata, Alpavyayama* (Inability to bear the strain of Exercise), *Alpavyavaya* (Difficulties In Sexual Intercourse) were given Score according to WHO criteria.

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.

DRUG AND POSOLOGY:

***Shamana Sneha*:**

- ★ **Drug**: *Triphaladi Taila* Table 1
- ★ **Dose*:*** 20 ml/day**.**
- ★ ***Anupana:*** *Mudag Yusha*.
- ★ **Administration time*:*** *Annakala Prakankshita* (10:00-1:00 noon)
- ★ **Duration*:*** 15 days

Selection of the drug and preparation:

Kapha is foremost *Dosha* and *Meda* is chief *Dushya* in the pathology of *Sthaulya*. So, the formulation should be selected which have *Kapha* and *Medahara* property and have efficacy to accurate the function of *Medodhatvagnimandya*. For *Medovriddhi*, there are number of formulations & treatment modalities available in *Ayurveda*. *Aacharya Charaka* has indicated

taila in the management of *sthaulya* in *Snehadhyaya*[7]. *Aacharya Bhavmishra* has clearly mentioned *Triphaladi tailapana* in *Sthaulya*[8]. Above sentence mentions that *Triphaladi taila* should be given by any route to the patient of *Sthaulya*. So in another group *Triphaladi Taila pana* was selected. However time for the *Shamana Sneha* was selected as per *Aacharya Charaka* "*Annakala Prakankshati*"[9].

Table 1: Contents of *Triphaladi Taila* (per 100 ml)

Sr. N.	Plant Name	Botanical Name	Part	gm/ ml
1	*Haritaki*	*Terminalia chebula*	1 part	1.25
2	*Bibhitaki*	*Terminalia belerica*	1 part	1.25
3	*Aamlaki*	*Embelica officinalis*	1 part	1.25
4	*Ativisha*	*Aconitum heterophyllum*	1 part	1.25
5	*Murva*	*Marsdenia tenacissima*	1 part	1.25
6	*Trivrut*	*Operculina terpenthum*	1 part	1.25
7	*Chitrak*	*Plumbego zeylanica*	1 part	1.25
8	*Vasa*	*Adhatoda vasica*	1 part	1.25
9	*Nimba*	*Azadirecta indica*	1 part	1.25
10	*Aargvadha*	*Cassia fistula*	1 part	1.25
11	*Vacha*	*Acorus calamus*	1 part	1.25
12	*Haridra*	*Curcuma longa*	1 part	1.25
13	*Daruharidra*	*Berberis aristata*	1 part	1.25
14	*Saptaparna*	*Alstonia scholaris*	1 part	1.25
15	*Guduchi*	*Tinospora cordifolia*	1 part	1.25
16	*Indravaruni*	*Citrullus colocynthis*	1 part	1.25
17	*Pippali*	*Pipper longum*	1 part	1.25
18	*Kushtha*	*Sausurea lappa*	1 part	1.25
19	*Sarshap*	*Brasssica alba*	1 part	1.25
20	*Sunth*	*Zingiber officinalis*	1 part	1.25
21	*Tila Taila*	*Sesame indicum* Oil	4 parts	100 ml

RESULTS AND DISCUSSION

Relief observed in *Bharavriddhi* and *Chalaudarstanasphik*, no relief was observed, improvement in *Alpavyavaya* which was insignificant. In *Gatragauravata* 74.82% was observed relief observed in *Ayathopachaya* was 52.63%, relief in *Gatradaurgandhya* was 61.54%, in *Atikshudha* relief of 64.17% was observed, in *Atipipasa* 85.47 % relief was observed, improvement in *Kshudraswasa* was 85.71%, in *Swedadhikya* 77.53% relief was observed, relief in *Atinidra* was 45.35%, improvement in *Gatrasada* was 66.66%, Improvement in *Snigdhagatrata* was 75.18 %, Improvement in *Alpavyayama* was 72.72 % which was highly significant. Table 2

In this study 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 3. There was a significant ($p<0.05$) decrease of 0.99%, 0.94% & 0.75% reported in Weight and BMI Table 4.

Overall effect of study:

In this study 73.33% patients had moderate improvement and 26.67% patients had mild improvement while no patients remain unimproved after the treatment. Table 5

Table 2: Effect of Therapy in Subjective Parameters. (Paired't' test)

Variable	Mean		Mean	%	SD±	SE±	T	P	S
	BT	AT	Diff.	Relief					
Bharavriddhi	1.53	1.47	0.066	3.93	0.258	0.066	1.00	0.334	NS
Chala udarstanasphik	1.00	1.00	0.00	0	0.00	0.00	0.00	1	NS
Gatragauravata	1.43	.36	1.07	74.82	.267	0.071	15.0	<0.001	HS
Ayathopachaya	1.90	.90	1.00	52.63	0.00	0.00	+inf	<0.001	HS
Gatradaurgandhya	1.30	.50	.80	61.54	.422	.133	6.00	<0.001	HS
Atikshudha	1.87	1.20	.667	64.17	.488	.126	5.292	<0.001	HS
Atipipasa	1.17	.17	1.0	85.47	0.00	0.00	+inf	<0.001	HS
Kshudrashwasa	1.61	.23	1.38	85.71	.506	.140	9.859	<0.001	HS
Svedadhikya	1.38	.31	1.077	77.53	.277	.077	14.0	<0.001	HS
Atinidra	1.83	1.0	.833	45.35	.390	.112	7.416	<0.001	HS
Gatrasada	1.50	.50	1.0	66.66	0.00	0.00	+inf	<0.001	HS
Snigdhagatrata	1.20	0.00	1.20	100	.447	.20	6	0.004	S
Snigdhagatrata	1.33	.33	1.0	75.18	0.00	0.00	+inf	<0.001	HS
Alpavyayama	1.10	.300	.800	72.72	.422	.133	6.0	<0.001	HS
Alpavyavaya	1.67	1.00	.67	40.11	.577	.333	2.00	184	NS

HS-Highly Significant, NS-Non Significant, S-Significant, +inf- infinite

Table 3: Effect of Therapy in Anthropometric Parameters (Paired't' Test)

Variable	Mean		Mean	%	SD±	SE±	t Value	P	S
	BT	AT	Diff.	Relief					
Neck region	35.13	34.2	.93	2.65%	.88	.22	4.090	0.001	S
Mid Arm	32.6	31.53	1.067	3.28%	.458	.118	9.025	<0.001	HS
Fore arm	23.27	23.07	.20	0.86%	.414	.107	1.87	0.082	NS
Chest	102.4	100.7	1.73	1.66%	.458	.118	14.66	<0.001	HS
Abdomen	101	98.4	2.600	2.57%	.632	.163	15.92	<0.001	HS
Hip	112.5	110.5	2.067	1.78%	.59	.15	13.484	<0.001	HS
Mid-thigh	56.33	55.13	1.20	2.13%	.414	.107	11.225	<0.001	HS
Mid-calf	35.40	35.7	.33	0.84%	.488	.126	2.646	<0.019	S
Biceps	3.12	3.10	0.018	.64%	0.007	0.002	9	<0.001	HS
Triceps	3.063	3.039	0.023	.78%	0.024	0.006	3.704	0.002	S
Scapular	4.014	4.029	-0.015	0.37%	0.129	0.033	-0.462	0.651	NS
Abdomen	3.912	3.895	0.017	0.43%	0.004	0.001	14.66	<0.001	HS
Suprailiac	3.74	3.71	0.022	0.80%	0.021	0.005	4.015	0.001	S

Table 4: Effect of Therapy on Objective parameters- Body Weight and BMI

Parameters	Mean		Mean	%	S.D.±	S.E.±	't'	p	S
	B.T.	A.T.	Difference	change					

Weight (kg)	80.66	79.86	0.8	0.99 ↓	0.79	0.25	3.21	<0.05	**S**
BMI (kg/m^2)	33.553	33.236	0.317	0.94↓	0.32	0.10	3.14	<0.05	**S**

↑-Increase, ↓-Decrease

Table 5: Overall Effect of the Therapy

Effect of therapy	N0. Of patients	%
Complete remission (100%)	0	-
Marked improvement (75-99%)	0	-
Moderate improvement (50-74%)	11	73.33%
Mild improvement (25-49%)	4	26.67%
Unimproved (0-24%)	0	-

Mode of action of *Shamana Sneha (Triphaladi Taila)*:Figure 1

Taila is having property of *Vata Shamana*. Increased *Vata* plays major role in the aetiopathology of *Sthaulya*. As we know increased *Vata* disturbs the *Agni*, by *Taila pana Vata* comes in its own state and corrects *Agni* (*Medodhatvagni*) – Main cause of *Sthaulya*. *Taila* acts as good solvent for many metabolic waste products & it enters the cells easily because cell wall is made up of phospholipids. Compared to other non-oily substances, *Taila* etc. fat materials stays in the body for a stipulated period without causing any harm & also possesses better permeability property. According to *Sushruta*, the disease occurs due to dislodgement of vitiated *Dosha*s in the channels during their circulation in the body[10]. *Sneha* administered internally reaches to *Srotasa* and acts as a solvent to remove the obstruction by dissolving *Dosha*s in it, resulting in the removal of *Srotorodha*, which is one of the important steps in the *Samprapti Vighatana*.

Shamana Taila showed better results in reduction of all the parameters. This result 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. *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)[11]. Polyunsaturated fatty acid reduces cholesterol level, Thus *Triphaladi taila* helps in reducing cholesterol level[12]. 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 *Medovriddhi*. 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 this study also showed good result in *Medovaha* and *Swedavaha Srotodushti*.

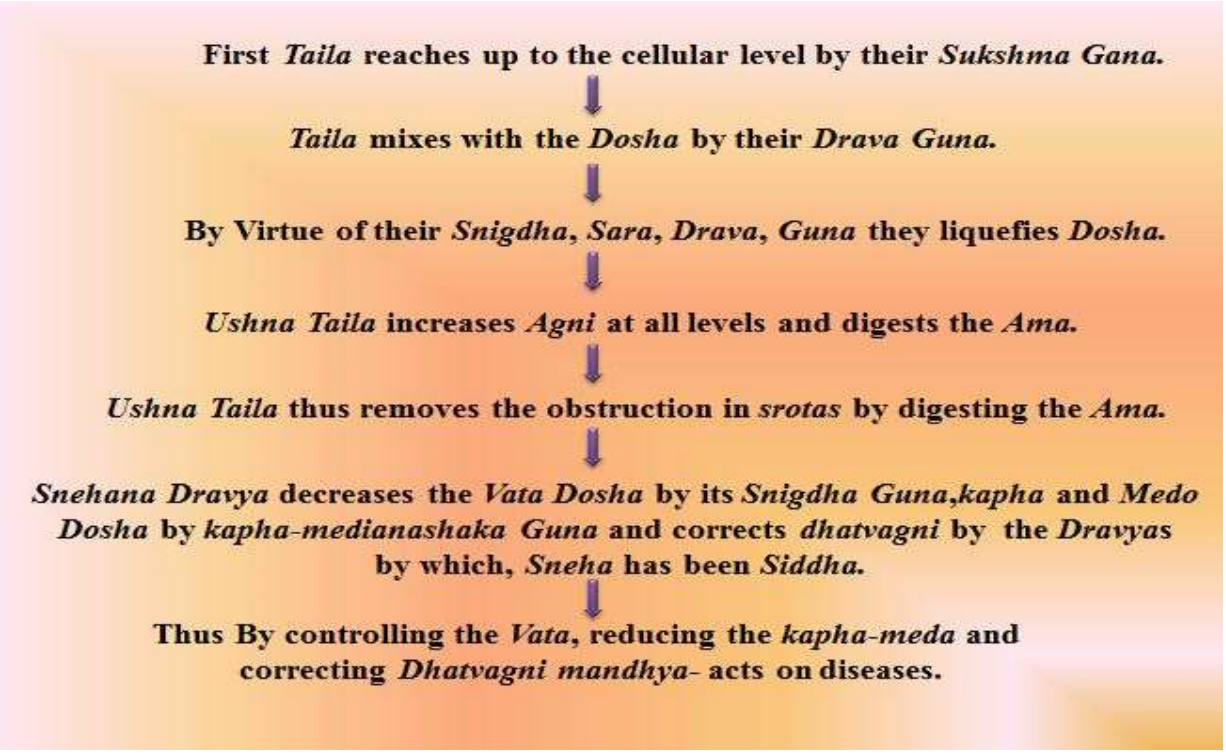

Figure 1: Mode of action of *Shamana Sneha (Triphaladi Taila)*

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* of prime importance. *Shamana Taila* by its own property and because of properties of contents of *Taila* 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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