

## CLINICAL TRIAL EVALUATING THE EFFICACY OF VIRECHANA IN STHAULYA

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### ABSTRACT

India ranks among the top 10 obese nations of the world and about one million urban Indians are overweight or obese. No wonder that the World Health Organization has concluded that obesity is the major unmet public health problem. It is said that *Sthaulya* may lead to a plethora of chronic lingering and fatal diseases. In the pathogenesis of *Sthaulya*, all the three *Dosha* are vitiated. *Sthaulya* is treated by correcting the *Vata*, *Agni* and *Medo dhatu*, *Sthaulya* belonging to the category of *santarpanotha vikara* is best treated by *shodhana* procedures like *Virechana* and *vasti*. In this clinical trial patients in Group A, were given *Snehapana* with *guggulu tiktaka ghrita* for 4-7 days, then *Snigdha udvartanana* and *vyayama* were done for four days followed by *Virechana*. In Group B, *Trayushnadya loha* was given for a period of 30 days. The change in the values before and after treatment were assessed by the paired 't' test. In both the groups there was a statistically highly significant improvement in the weight and BMI. By comparison it was clear that the weight loss observed after *virechana* was greater than that of *Trayushnadya loha*

**Keywords:** *Sthaulya*, Obesity, *Virechana*, *Trayushnadya loha*

### INTRODUCTION

Overweight and obesity have reached epidemic proportions in India in the 21<sup>st</sup> century affecting 5% of country's population.<sup>1</sup> *Sthula purusha* is listed as one among the *astha nindita purusha*<sup>2</sup> and the cardinal symptoms of *Sthaulya* are *Medomamsa ativraddhi*, *Chalaspik*, *Chalaudara*, *Chalastana*, *Ayathaopachaya* and *Anutsaha*. It is said that *Sthaulya* may lead to a plethora of chronic lingering and fatal diseases. Parallel to this overweight (if BMI=25.0-29.9 kg/m<sup>2</sup>) and obesity (if BMI>or=30 kg/m<sup>2</sup>), are stated in the biomedicine<sup>3</sup>. Obesity is a

medical condition in which excess of body fat has accumulated to such an extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. Obesity increases the likelihood of various diseases, particularly heart disease, type 2 diabetes, breathing difficulties and osteoarthritis and so on. Though *Sthaulya* is a *Dushya* dominant disorder, in pathogenesis of *Sthaulya*, all the three *Dosha* are vitiated. The aim of treating *Sthaulya* is at reducing *Vata*, *Agni* and *Meda*. Since *Sthaulya* is a *santarpanotha vyadhi* the

main line of treatment has to be *apatarpana* and it is best treated by *shodhana* procedures like *Virechana karma* and *Lekhana basti*<sup>4</sup>. It can also be treated by using *Apatarpana Dravya* with *Guruguna*.

## Methods

Objectives of the study were to evaluate the therapeutic efficacy of *Virechana Karma* in *Sthaulya*, to evaluate the therapeutic efficacy of *Trayushnadya loha* in *Sthaulya* and to compare the therapeutic effects between the groups. This was an open parallel comparative randomized pragmatic clinical study where 30 patients diagnosed as *Sthaulya* were taken from S.D.M., Ayurveda Hospital, Udipi.

Patients having symptoms and signs of *Sthaulya*, having a BMI>25 who were in the age group of 16 – 60yr were included in the study. Subjects who were suffering from endocrinal diseases, psychiatric illness, and primary systemic diseases like Hypertension, pregnant and lactating mothers were excluded. The assessment criteria taken were as follows

### 1. Weight (kg)

### 2. BMI (Kg/m<sup>2</sup>)

### 3. Lipid profile levels

### 4. Girth circumference measurements in the areas of

- Chest - In normal condition at the nipple region
- Abdomen - At the level of umbilicus.
- Hip - At the level of highest point of distention of buttock.
- Mid arm - Mid of arm between shoulder and elbow joint.
- Mid thigh - Mid of thigh between Hip and knee joint
- Mid calf - Mid of the calf between knee and ankle joint.

### 5. Waist-hip ratio.

### 6. Anthropometrics features -The following measurements were taken

- Triceps - A vertical pinch halfway between the triceps muscle.
- Biceps - A vertical pinch halfway between the biceps muscle.

- Sub scapular -A diagonal pinch just above the scapula on posterior side
- Supra iliac - A diagonal pinch just above the outward protrusion of the hipbone on the anterior side
- Thigh - A vertical pinch halfway between the knee and iliac crest.

## 7. Percent body fat

The selected patients were randomly grouped into 2 groups by adapting the permuted block randomization technique.

### 1) Group A – *Virechana* group<sup>5,6,7</sup>

#### *Purvakarma:*

- Rookshana karma* was given with *triphala choornam* at a dose of 5 gm thrice a day (Before food) for 3 days.
- Deepana, Pachana* was given next with *Panchakola phanta* at a dose of 50 ml thrice a day (Before food) for a period of 3 days.
- Snehapana* was done with *guggulu tiktaka ghrita* for a period of 4 -7 days by using the “*avastha vishesha aarohana*” method. Here the *hrasiyasi matra* of 50 ml was given on the first day. Then depending on the time of digestion of the *sneha* the dose of the second day was calculated. On the second day the *hrasva matra* of the *sneha* was given and from the third day onwards the *madhyama matra* of *sneha* was given, till the patient achieved *samyak snigdha lakshnas*
- For the purpose of *Shodhana purva Sneha - sweda, Snigdha Udvartana with Tila taila* was done. This was followed by *vyayama*. This was done for a period of 4 days.

#### *Pradhanakarma:*

On the fourth day of the *Snigdha Udvartana, Virechana karma* was given with 12 - 24g of *Trivrit choorna*, taken along with quantity sufficient *madhu, ghrita* and *sita*. According to *Agnibala and Kosthabela* the dose was calculated.

#### *Paschatkarma.*

*Samsarjana krama* was given, depending on the *Shuddhi lakshanas* for 3-7 days. *Peyadi Samsarjana* and *Tarpandi Samsarjana* were selected based on

the outcome at the end of *virechana* .Total duration of study was a maximum of 24 days.

**2) Group B - Trayushnadya loha group<sup>8</sup>**

*Trayushnadya loha* was given at a dose of 4 tablets of 250 mg each, twice a day, before food for a period of 30 days.

**OBSERVATION & RESULTS:**

*Snehapana* was given for a minimum of 3 days and maximum of 5 days. On an average it was given for 4.266 days. In totality most of the patients (53.33%) were given *sneha pana* in the amount between 500 – 599 ml, with an average of 571 ml. Most of the patients (66.66%) had *madhyama shuddhi* and had 19.6 vega on an average.

In Group A, It was noticed that there was a 5.70 % reduction in weight and a reduction in BMI by 5.64% which were statistically highly significant. S. Cholesterol was reduced by 7.49 %, S. Triglyceride by 21.47 %, which were both statistically highly significant, LDL was reduced by 7.52 %, and VLDL was reduced by 39.70 %. The treatment showed a decrease in values in various body circumferences

and skin fold thickness. There was also a 7.77 % reduction in Percent body-fat. The details can be seen in Table no 1, 2 &3.

In Group B, there was a marked reduction in the weight by 2.93 % and BMI by 3.67% which were statistically highly significant.It was noticed that S. Cholesterol was reduced by 5.54%, S. Triglyceride was reduced by 2.68%, LDL was reduced by 5.34%, VLDL was reduced by 15.76%. The treatment showed a decrease in values in various body circumferences and skin fold thickness. 5.54 % reduction in Percent body-was also noted. The details can be seen in Table no 1, 2 & 3.

Comparison between the groups shows that that the weight loss and the reduction in BMI observed after the course of *virechana karma* is greater than that observed after the use of *Trayushnadya loha*. It is noted that the after the course of *virechana karma*, there is a greater reduction in the values of S. Cholesterol, Triglycerides, LDL and VLDL and there is a greater increase in the value of HDL. There is also a greater reduction in the values of the body circumferences and Percent body-fat.

**Table 1: Effect on Weight in groups**

Group	Mean score		Difference in Means	Paired “t “ Test				
	BT (S.D±)	AT (S.D±)		% Relief	S.D.	S.E.M	‘t’	P
A	83.85 (11.77)	79.06 (11.79)	4.786	5.70838%	1.492	0.3852	12.427	<0.0001
B	82.53 (11.20)	79.60 (10.94)	2.933	2.933%	1.100	0.284	10.33	<0.0001

**Table 2: Effect on BMI in groups**

Group	Mean score		Difference in Means	Paired “t “ Test				
	BT (S.D±)	AT (S.D±)		% Relief	S.D.	S.E.M	‘t’	P
A	32.0867 (3.864)	30.2747 (4.079)	1.812	5.6472%	0.407	0.1232	14.706	<0.0001
B	33.456 (3.83)	32.2273 (3.79)	1.22867	3.6724%	0.599	0.1547	7.944	<0.0001

**Table 3:** Effect on Percent body fat in groups

Group	Mean score		Difference in Means	Paired “t” Test				
	BT (S.D±)	AT (S.D±)		% Relief	S.D.	S.E.M	‘t’	P
A	29.876 (8.595)	27.5533 (8.892)	2.32267	7.77436	1.479	0.3819	6.082	<0.0001
B	25.6357 (4.23)	24.2133 (3.58)	1.42238	5.5484%	1.293	0.333	6.172	<0.00001

## DISCUSSION

During the process of *snehapana*, since the person takes only *ghrita* and a very small quantity of food, there is acceleration of fat utilization for energy, in the absence of carbohydrates. Thus *snehapana* has an *apatarpana* effect on the body. The average routine consumption of a person per day is about 2300 calories, while in *snehapna* the maximum consumption was reduced to 1750 calories, thus causing a negative energy balance. *Snigdha udvatana* causes the increase in the lymphatic drainage. It has been proved that lymphatic massage aids in water loss, and thus ultimately weight loss. *Vyayama is an anagni sweda* which causes hemo-concentration. For the purpose of *shodhana chikitsa*, the secretory action of the mucous membrane is exploited and the body fluids are influenced for therapeutic purposes. Thus *virechana* is targeted at to create a biochemical alteration as it modulates the fluid compartments of the body<sup>9,10</sup>

*Trayushnadya loha* contains drugs which mostly have *ushna virya and laghu, ruksha guna*, which are exactly opposite to the *guna* of *Kapha and Medodhatu*. Thus it is *kapha-medohara*. The karma of most of the drugs is *dipana, pachana, vatanulomana, balya and Medoroghna*. *Loha* being the main ingredient here acts in two ways. Firstly when given before food, it controls the appetite and as a result there is a reduction in food consumption. Secondly it causes lipid peroxidation. The four different *lavana* used in this medicine effect the lipid emulsification, due to the electrostatic interactions between sodium ions and lipid particles<sup>11</sup>. As a result there is reduced absorption of fats following digestion of food.

## CONCLUSION

The study showed that in both the groups there was a statistically highly significant improvement in the weight and BMI. After *Virechana* the lipids were all greatly reduced and these results were all statistically highly significant. *Virechana* is beneficial in *Sthaulya* as it helps to initiate the weight loss mechanism in the body. It also helps to check the future complications in the healthy obese. Hence *Virechana* is found to be effective in the management of *Sthaulya*.

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