

TO EVALUATE THE EFFICACY OF VIRECHANA KARMA IN STHOULYA W. S. R. TO OVERWEIGHT

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ABSTRACT

Sthaulya (Overweight and Obesity) is one among the major diseases of Modern era. In Modern era with continuous changing life styles and environment, changed diet habits, man has become the victim of many disease caused by unwholesome dietary habits and Obesity is one of them. In Ayurveda, *Sthula purusha* is considered as one of the *nindita purusha*. *Acharya Charaka* has explained the *swastha purusha* as *sama mamsa, sama pramana, sama samhanana* and having *Dridha Indriyas*, but *sthula* person is not having such qualities. Regarding this explanation is available in ayurvedic classics. Overweight and obesity has reached epidemic proportions in India in the 21st century affecting 5% of countries population. *Virechana* is one of the *shodhana* procedures, which expels morbid *doshas* and helps to maintain health of an individual, which can be done by *virechana* yoga using drugs like *pippali, nagar, kshara (yavakshara)* and *shyama trivritta* with *madhu* in the form of *leha*.

Objectives: To evaluate the efficacy of *Virechana Karma* in *Sthaulya* w.s.r to Overweight. **Methodology:** This was a single blind clinical study with pre-test & post- test design where in 20 patients diagnosed as *sthaulya* of either sex & the patients fulfilling the criteria of undergoing the process of *Virechana karma* were selected. **Results:** Statistically significant results were obtained in Weight and BMI recordings. The values of skin fold thickness showed negligible improvement. Statistically significant results were obtained in the values of abdominal circumference but these results did not bring satisfaction to the patients as they expected more. Statistically significant results were obtained on Biochemical parameter of Lipids.

Keywords : *Virechana karma, Sthaulya, Overweight.*

INTRODUCTION

The Nature has taught the man how to be healthy before the science has discovered the laws of health. But, it is an irony of the fate that on the earth millions don't get enough food and roam in a skeletal appearance while on the other hand, there are many more who, besides over eating lead a sedentary life to march towards an untimely death.

In Ayurveda, *Sthula purusha* is considered as one of the *nindita purusha*. *Acharya Charaka* has explained the *swastha purusha* as *sama mamsa, sama pramana, sama samhanana* and having *Dridha Indriyas*, but *sthula* person is not having such qualities. Regarding this explanation is available in ayurvedic classics.

Overweight and obesity has reached epidemic proportions in India in the 21st century affecting 5% of countries population. Approximately 1.6 billion adults of age above 15 years are overweight, at least 400 million adults are obese and by 2015 approximately 2.3 billion adults will be overweight and more than 700 million will be obese.

Overweight and obesity can be compared with *sthaulya*. Which is one of the *Santarpanotha vyadhi* and line of treatment for it is *apatarpana* and *langhana*, which can be done by *shodhana* and *shamana*.

Virechana is one of the *shodhana* procedures, which expels morbid *doshas* and helps to maintain health of an individual, which can be done by *virechana* yoga using drugs like *pippali*, *nagar*, *kshara* (*yavakshara*) and *shyama trivritta* with *madhu* in the form of *leha*.

Thus considering above facts this study “A clinical study to evaluate the efficacy of *Virechana karma* in *Sthaulya* wsr to Overweight” was being planned.

Methodology

Selection of patients & methods

This was a single blind clinical study with pre-test & post- test design where in 20 patients diagnosed as *sthaulya* of either sex & the patients fulfilling the criteria of undergoing the process of *Virechana karma* were selected.

Total duration of the study: 43 – 55 days

Inclusion criteria-

- Subjects who are fit for *Virechana karma*.
- Patients diagnosed as *sthaulya*.
- Age: 16 – 60yr.
- BMI (kg/m^2) \geq 25-29.9

Exclusion criteria-

Subjects who were not fit for *Virechana Karma*.

Subjects with other primary systemic disease.

Poorvakarma: *Dipana-pachana*: carried out with *Shunthi kwatha* for a period of 3-7 days.

Snehana: The *Murchit Gritha* was given to all the 20 patients. The initial dose was 25ml (*Hrisiyasi matra*) with Luke warm water in early morning, after the digestion of the last night meal. Then patient was continuously observed for appearance of *Sneha Jeeryaman*, *Sneha Jeerna* features. Based on the time of *Snehajeerna lakshana* the dose of *Sneha* for next day was decided.

Thus *Arohana krama Snehapaana* was administered still *samyak snigdha lakshana* arises in all the patients.

Swedana: Once *samyak snigdha lakshana* appears then, from next day *Sarvanga Abhangya* with *Murchit Taila* followed by *Bashpa Sweda* was performed.

Thus, *Bahya Snehan* and *Swedan* was performed for 4 days and during this period patient advised to avoid consumption of *Kaphakar Ahara* and *Vihara*.

Pradhana Karma:

On 4th day depending upon the *rogi & roga bala Virechana Yoga of Pippali, Nagar, Kshara*, (each 4gm) *Shyama Trivritta* (10gm) & *Madhu*(Q.S) combination dose was decided.

After the *Bashpa sweda* procedure, ascertain the patient proper digestion of previous night consumed meal. Then above mentioned *Virechana* yoga with sufficient quantity of *Madhu* was administered to patient on empty stomach in the morning hours at 9.30 AM.

Paschata Karma:

Samsarjana Krama was decided on the basis of *Shuddhi lakshana* and it was started from the same day evening till for 3/5/7 days.

Assessment criteria:

Signs and Symptoms of *Samyak* and *Asamyak Virechana*.

Patients were evaluated for severity of illness during and after the intervention.

Subjective: *Lakshanas* of *sthaulya*.

Laingiki features

All the *Laingiki* features were identified as *samyaka yoga, atiyoga, & ayoga features*.

Antaki feature

Antaki feature was identified at the end of *Virechana karma* based on the colour, consistency etc. parameters of Stool and finally depending on observation it was documented as *Pittant / Kaphant/ Aoushadhanta/ Malanta*.

Objective:

Maniki features & *vegiki* features of *Virechana karma*.

BMI (Kg/m²)

Table no. 1

No. of days	No of patients	%
3	7	35%
4	10	50%
5	2	10%
6	1	05%

Out of 20 patients of *Sthaulya* studied in this work about 35 % of the patients developed *samyak snigdhaLakshana* on third day, 65 % of patients developed it on the 4th day, 10 % of patients developed it on fifth day and only

Anthropometrics features (Measuring skin fold thickness by using slide calipers.) Triceps, Biceps, Intra-scapular, Sub-Scapular, Abdomen &Thigh.

Measurements were taken before treatment, after treatment and during follow up i.e. after one month of *samsarjana krama*.

Signs of *Samyak and Asamyak Virechana Lakshanas* i.e. *Vaigaki and Maanaki*.

Observations & Results

Effect of Virechana karma on different parameters:

The analysis was done statistically by using SPSS Statistics 17.0 software.

Paired t- test was used for comparing the results.

BT – Before treatment

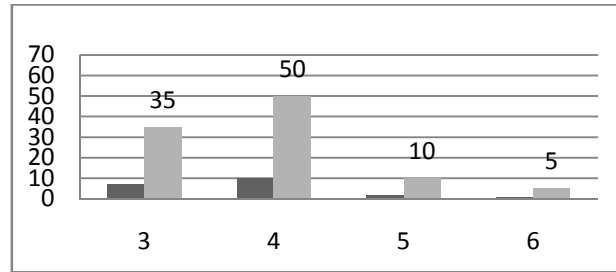
AT1 – Aafter snehapaana.

AT2 – After virechana.

AT3 - One month after *samsarjana krama*.

Days of appearance of samyaka snigdha lakshan:

Graph no.1



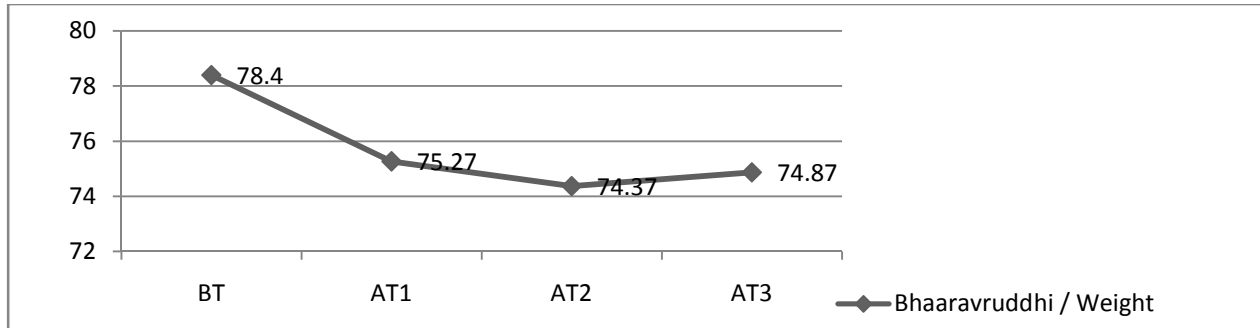
5% required six days of *snehapaana* to attain the *samyak snigdha Lakshanas*.

Average amount of Ghritha required attaining Samyak Snigdha Lakshanas:

Table no. 2

Total no. of patients	Mean of total ghritha to attain samyaka snigdhata
20	290

Graph no.2



In this study, mean of total amount of *ghrita* required was 290 ml, however a minimum of 175 ml and a maximum of 775 ml were administered in different patients.

Total amount of *abhyantara sneha* during the whole course of *snehapaana*:

Out of 20 patients of *Sthaulya* studied in this work maximum of 50 % of the patients took anything between 201-400ml and the number of patients who took in between 000-200ml was 40 % and 05 % each of the patients required anything between 401-601ml and 601-800 ml of total *snehapaana*.

Analysis of latency period:

The time required for the manifestation of the first *Virechana Vega* after the administration of *Virechana* drug may be

called as Latency period. In the present study, Out of 20 patients, maximum number of patients i.e. 75% the latency period was between 61-90 minutes, where as in minimum of 10% of patient’s latency period was between 31-60 minutes.

Analysis of *Vaigiki Shuddhi* :-

Out of 20 patients maximum of 70% of the patients had *madhyama shuddhi* and 10% had *pravara* and 20% had *avara shuddhi*.

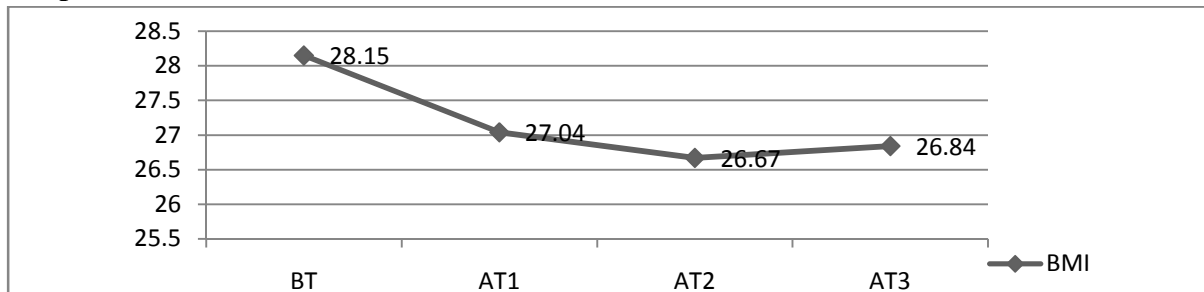
Analysis of *Anthiki of Virechana*:-

In maximum number of patient i.e. 40% exhibited *drava malaanta virechana* , about 35% of the patients had *kaphanta Virechana* and 15% had *aushadhanta* and 10% had *pittanta virechana*.

Effect of treatment on *Bhaaravruddhi / Weight*: Table no. 3

n	BT Mean	Follow up		Diff “d”	%	Paired ‘t’ test			
		Mean				SD	SE	‘t’	P
20	78.40	AT1	75.27	3.13	3.99	11.18	2.50	13.643	0.000
		AT2	74.37	4.03	5.14	11.15	2.49	13.610	0.000
		AT3	74.87	3.53	4.50	11.469	2.56	15.667	0.000

Graph no.3



Statistical analysis revealed that there was 3.99 % improvement in *Bhaavridhi* / Weight score after *snehapaana* and was further increased to 5.14% after *virechana*

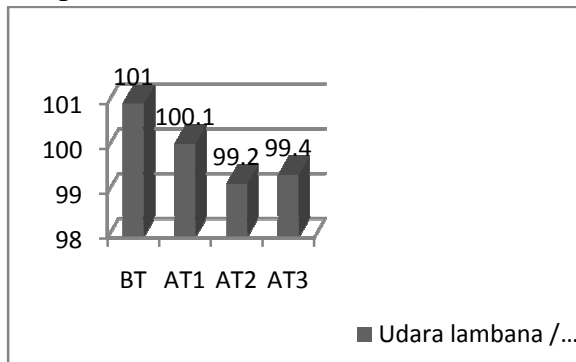
and 4.50 % at follow up. This change is statistically significant ($P < 0.001$).

Effect of treatment on BMI:

Table no. 4

n	BT Mean	Follow up Mean	Diff 4d"	%	Paired 't' test			
					SD	SE	't'	P
20	28.15	AT1 27.04	1.11	3.94	1.088	0.243	17.619	0.000
		AT2 26.67	1.48	5.25	1.138	0.254	20.242	0.000
		AT3 26.84	1.31	4.65	1.147	0.256	21.099	0.000

Graph no.4



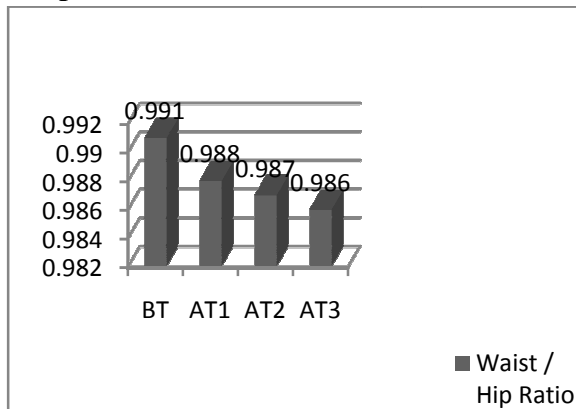
Statistical analysis revealed that there was 3.94 % improvement in BMI score after *snehapaana* and was further increased to 5.25% after *virechana* and 4.65 % at follow up. This change is statistically significant ($P < 0.001$).

Effect of treatment on Udana lambana / Waist circumference:

Table no. 5

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test			
					SD	SE	't'	P
20	101	AT1 100.10	0.9	0.89	10.259	2.278	4.414	0.000
		AT2 99.200	1.8	1.78	10.195	2.279	9.658	0.000
		AT3 99.40	1.6	1.58	10.200	2.280	9.491	0.000

Graph no.5



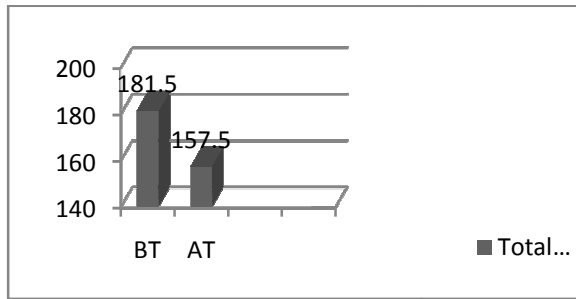
Statistical analysis revealed that there was 0.89 % improvement in *Udana lambana* / waist circumference score after *snehapaana* and was further increased to 1.78% after *virechana* and 1.58 % at follow up. This change is statistically significant ($P < 0.001$).

Effect of treatment on Waist / Hip Ratio:

Table no. 6

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test				
					SD	SE	't'	P	
20	0.991	AT1	0.988	0.003	0.30	0.039	0.008	8.847	0.000
		AT2	0.987	0.004	0.40	0.0399	0.0089	1.859	0.79
		AT3	0.986	0.005	0.50	0.043	0.0097	2.114	0.48

Graph no.6

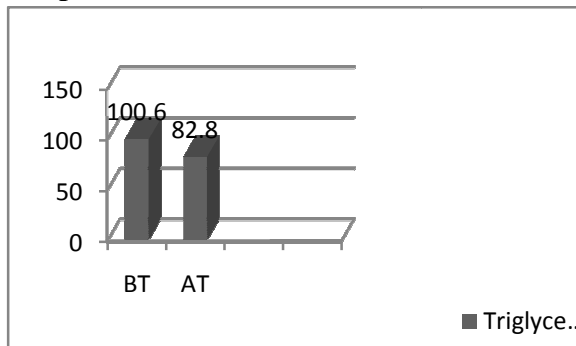


Statistical analysis revealed that there was 0.30 % improvement in Waist / hip ratio score after *snehapana* and was 0.40% after *virechana* and 0.50 % at follow up. This change is statistically insignificant.

Effect of treatment on total cholesterol:
Table no. 7

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test			
					SD	SE	't'	P
20	181.50	157.50	24	13.22	27.81	6.22	5.466	0.001

Graph no.7

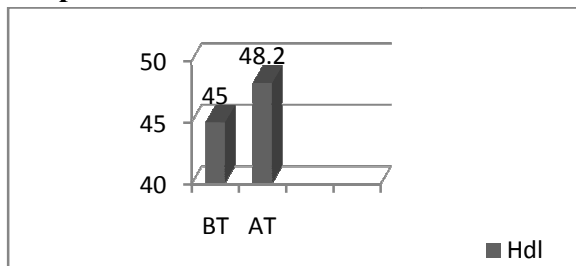


The change that occurred with the treatment is greater than would be expected by chance; there is a statistically highly significant change (P = <0.001)

Effect of treatment on Triglyceride:
Table no. 8

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test			
					SD	SE	't'	P
20	100.60	82.80	17.8	17.69	18.89	4.22	-2.356	0.29

Graph no.8

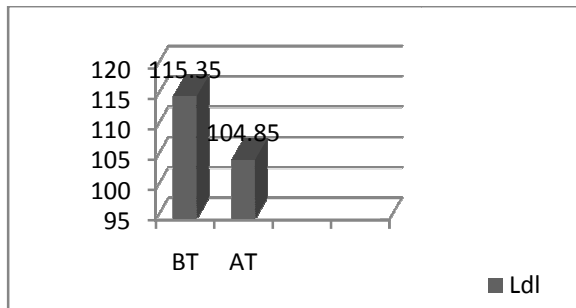


The change that occurred with the treatment is not great enough to exclude the possibility that the difference is statistically insignificant (P = <0.29).

Effect of treatment on HDL:
Table no. 9

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test			
					SD	SE	't'	P
20	45.90	48.20	2.3	5.01	5.28	1.18	2.464	0.23

Graph no.9



The change that occurred with the treatment is less than would be expected by chance; there is a statistically insignificant change ($P = < 0.23$).

Effect of treatment on LDL:

Table no. 10

n	BT Mean	Follow up Mean	Diff "d"	%	Paired 't' test			
					SD	SE	't'	P
20	115.35	104.85	10.5	9.01	26.31	5.88	1.945	0.67

The change that occurred with the treatment is not greater than would be expected by chance; there is a statistically insignificant change ($P = < 0.67$).

DISCUSSION

A total of 20 patients fulfilling the inclusion criteria were studied. The observation and the result as well as statistical analysis of these are elaborated below.

Number of Individuals registered for the Study – 20

Number of Individuals completed the Study – 20

Number of Dropouts – Nil

Age-

In this study it was found that the incidence was highest in the age group of 41-60 years constituting 40 % of total number of patients. 30 % patients were in the age group of 16-30 and 31-45 years each. This is in concurrence with the increased incidence of Overweight in the middle age groups. But a conclusion cannot be drawn as the sample size is small.

Sex –

In the sample taken for the study, 50% patients were females in comparison to 50 % of male patients. Though overweight is more prevalent among females than in males but it is not possible to conclude the fact because of a small sample size.

Religion-

In the study sample, the incidence of Hindus was 80 % , Christians was 15 % and that of Muslims was 05%. As the sample size is small it does not represent the geographical as a hole.

Educational status-

Majority of the patients were graduates constituting 60% where as 25% had their secondary education, 15% were post graduates.

Marital status-

Most of the patients were married comprising of 80 % and the remaining 20 % were unmarried. This is in concurrence with a study that associated marriage to overweight and obesity.

Socio Economic status:

Majority of patients belonged to the middle class 55%, 30% were in upper middle class and 15 % were in lower middle class. This is in concurrence that overweight is ubiquitous regardless of economic status.

Occupation-

Maximum number of patients were house wife (35%), 30% were businessman, 20% were students, 15% were in service.

Nature of work-

In this study, maximum of 60 % of patients had sedentary work; where as 35 % of patients had moderate type of work and 5% had a stressful work.

Desha-

In this study, 85 % of the patients belonged to *Anupa desha* and 15 % belonged to *Sadharana desha*. This represents that most of the patients in the sample belonged to the same geographical area, but the role of *Anupa desha* in causing *Sthoulya* can not be ruled out as it is *Kapha pradhana desha*.

Diet-

70% of the patients were using mixed diet while 30 % were to a vegetarian diet; but all the 100 % indulged in *guru snigdha ahara* which is the predisposing factor for Overweight and Obesity.

Nidra-

Of the total 20 patients, 85% had normal and sound sleep whereas remaining 15% had disturbed sleep. Excessive *nidra* is one of the *nidana* predisposing to *Sthoulya roga*.

Addiction-

In this study it was found that 100 % of the patients had addiction of tea, coffee or beverages. 20 % were addicted to alcohol and 10% were addicted to cigarette. It is difficult to draw any conclusions as the sample size is small.

Prakruti-

A majority of patients (60%) belonged to *Kapha-Vāta Prakruti*, 25 % belonged to *Kapha- Pitta Prakruti* and remaining 15% belonged to *Vata-Pitta*. Thus *kapha* predominant either associated with *Vata* or *Pitta*, is more in predisposing the disease *Sthoulya*.

Satwa-

The analysis of *Satva* revealed 90% of patients had *madhyama satva* while 5 % had *avara satva* and 5% had *pravara satva*.

Samhanana-

20% of patients were found having *avara samhanana*, 80% had *madhyama samhanana*. *Acharyas* opines that an obese will have *alpa bala* due to the *asamatva* in *dhatus*.

Satmya-

Analysis of *satmya* revealed that 65 % of patients had *madhyama satmya*, while 35 % of patients had *avara satmya*. This might be because *sthool* person consumes more of *madhura*, *mamsa* and *sneha dravyas* as a routine diet.

Ahara shakti and Jarana shakti:

In this study it was found that 75 % of patients had *pravara abhyavaran shakti* and *jarana shakti* where as 25 % had *madhyama abhyavaran shakti* and *jarana*.

Koshtha-

In the present study, 60 % had *madhyama koshtha*, 30 % of the patients had *krura koshtha* and 10% had *mrudu koshtha*.

Nidana-

Among the *Aharatmaka nidana*, all 20 patients were found indulging in *Guru, Snigdha Pradhana Ahara sevana* and 70% indulged in *Madhura Rasa Pradhana Ahara sevana*. 70% of patients were found indulging in *Samishahara sevana*. 25 % of patients had *bija doshaja sthoulya*. *Divasvapna* and *atinidra* was noted in 60%

of the patients and *avyayama* was noted in 75 % of the patients. Both *aharatmaka* and *viharatmaka nidana's* support the causation of overweight and obesity.

Bijasvabhava has been mentioned as one of the causative factor of *Sthaulya* in classics, which was revealed by taking family history.

Srotas involved-

In the present study all the patients had *Medo* and *mamsa dushti lakshana* (100%). 55% of patient had involvement of *Svedavaha srotas* and 30% *rasavaha*. Vitiating of *Medovaha srotas* is mentioned by *acharyas*, in pathogenesis of *sthaulya*.

Symptoms-

The symptom *sthulata*, *udara lambana* was observed in all 100% patients, *snigdhangata* and *swapna kruthana* was found in 40 % of patients respectively. 35% of patients had *sphik lambana*. 10% of patients had *trisha* while 20% of patients had symptom of *sweda daurgandhya*.

Vata presents with symptoms like *swapna kruthana*, *kapha Dosha* presents with *pramana vrudhi*, *Snigdhangata*, *Pitta* like *daurgandhya*. Vitiating of *Tridosha* in pathogenesis of *sthaulya* is mentioned by *acharyas* and the same is reflected in this study.

BMI: As the study carried out in overweight, 30 % patients each had BMI in between 28.0 – 28.9 and 29.0-29.9, 20% were in 27.0 – 27.9, 15% were in 26.0 – 26.9 and remaining 5% were in 25.0 – 25.9.

CONCLUSION

- *Sthaulya* is a *Dushya Dominant Vyadhi*.
- There is an involvement of all the three *Doshas* in *Sthaulya* but the vitiating of *Kapha-Vata* and *Meda* of prime importance.

- Etiological factor mainly Vitiating *Kapha-Meda*. This vitiating *Meda* obstruct the path of *Vata* and causes its *Avarana* which results in to provocation of *Vata*.
- Thus remaining in the *Kostha Vata* causes *Atikshudha*, which increases gravity of the disease and make the *Sthaulya Kritchhsadhya*.
- Due to obstruction by *Meda*, *Vyana Vayu* could not transport nutrient to other *Dhatu* so *Medadhatu* is increased and *Uttardhatu* decreased.
- Sedentary life, lack of exercise, faulty food habits, and urbanization precipitate the disease.
- Genetic predisposition, *Kapha* predominant *Prakriti* increases the prevalence of *Sthaulya*.
- So treatment modality should be planned considering vitiating *Meda, Kapha* and *Vata*. and *Virechana Karma* are amongst them.
- Indication of *Virechana* in *Sthaulya* are indirect references.
- *Virechana* is beneficial for *Sthaulya* w.s.r. to overweight.
- *Virechana* helps to initiate the weight loss mechanism in the body.
- *Virechana* helps to check the future complications in the healthy obese as well as in the obese.
- The plus point observed in case of *Ayurvedic* management is absence of any hazardous effect, which is really a great benefit to the patients and is of vital importance in view of the global acceptance of *Ayurveda*.
- Results of this study are very encouraging and trial should be conducted on large sample with better parameters.

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*Source of support: Nil
Conflict of interest: None Declared*