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A Study On *Sthoulya* And Its Management By Certain Drugs With The Principle Of Treatment – “*Guru Chaatarpanam Chestam*”

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ABSTRACT: -

In the present era due to the climatic changes and behavioral changes of the human being, westernization of the food, sedentary lifestyle and also due to lack of exercise and various stress factors the “*Sthoulya*” (Obesity) is being common worldwide both in developed and developing countries. Obesity has negative impact on health & quality of life. Obesity is considered the world’s oldest metabolic disorder. It is common among those who consume *Excessive kapha medo vardhaka Ahara and Vihara* (diet and regimen). *Sthoulya* (Obesity) is such a disease which provides a platform for so many hazards like hypertension, coronary heart disease, diabetes mellitus, osteoarthritis, as well as psychological disorders like stress, anxiety, depression and certain types of cancer. These diseases are definitely associated with an increased risk of mortality. Looking upon the severity of this disorder the principle of treatment of *Sthoulya* advocated by Maharishi Charak i.e. “*GURUCHA ATARPANA CHESTAM*”. On the basis of this Principle certain drugs were taken and prepared a compound form i.e. *Haritaki Pippali Madhu Yoga* as a remedy for disease *Sthoulya*. The patients were administered *Haritaki Pippali Churna* 5 gm with adequate quantity of Madhu twice daily in empty stomach for a period of 60 days for Group A. For Group B 500mg placebo capsule twice daily in empty stomach for 60 days. During the present clinical study, it was observed that change in body weight and reducing the sign & symptoms under the trial group patients is significant. Whereas in case of control group patients, it is not significant. The *Haritaki Pippali Madhu Yoga* has a significant role in the management of *Sthoulya* and justifies the treatment principle “*GURU CHAATARPANAM CHESTAM*”. No side effects or withdrawal effects were observed.

Keywords: *Sthoulya, Guru Chaatarpana, Haritaki Pippali Madhu Yoga*



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INTRODUCTION

In Ayurveda "Sthoulya" is narrated under "*Santarpanyajanya vyadhi*" [1] which is stated to be *Kaphapradhanya* [2], *Medopradoshaja* [3], And *Bahu Doshajaabastha*. It is a condition of abnormal excessive fat accumulation particularly in the region of buttock, belly and breast [4]. It comes under the heading of the "*Medoroga*" [5], which results due to improper function or dysfunctions of "*medodhatwaagni*" which is responsible for nourishment of *medodhatu* (fatty tissues). *Atisthoulya* (excessive obese) has been mentioned by Maharshi Charaka under 8 types of undesirable people (*Astaniditiya purusha*), where in it is criticized by the society, because of inappropriate body shape. [6]

Obesity is defined as a state of increased body weight, due to adipose tissue accumulation, that is of sufficient magnitude to produce adverse health effects. Obesity has negative impact on health & quality of life. Obesity is considered the world's oldest metabolic disorder. It not only singles disease entity but a syndrome with many causes including combination of genetic, nutritional & sociological factors. *Sthoulya* (Obesity) is a global problem and a recent world health study reports that obesity is included among the top ten selected risk factors to health. Obesity is such a disease which provides a platform for so many hazards like hypertension, coronary heart disease, diabetes mellitus, osteoarthritis, as well as psychological disorders like stress, anxiety, depression etc.

In modern medicine obesity has limited treatment like appetite suppressant, lipid lowering drugs, surgical procedures. These methods of treatment are not justified in *medodhatu dusti & medodhatwaagani mandya*. This treatment is not much effective rather having side effect. So, modern drugs are not advisable as they have lots of complications, hence it is better to follow Ayurvedic principles for healthy lifestyle. We can continue this healthy lifestyle with safe and effective treatment of Ayurveda to prevent from *Sthoulya*.

So, as per Ayurvedic principle, depending upon the responsible factors, the therapy and management should be carried out. Looking upon the severity of this disorder the principle of treatment of *Sthoulya* advocated by Maharishi Charaka i.e. "**GURUCHA ATARPANA CHESTAM STHULANAM KARSHANM PRATI**" [7], means heavy (Guru), non-nourishing (*Atarpana*) diet therapy are prescribed for slimming in case of Obese patient. To assess the treatment principle a clinical trial was conducted with the Ayurveda formulation *Haritaki Pippali Madhu Yoga* was given to *Sthoulya* (Obese) patients and the result was assessed.

AIMS AND OBJECTIVES

1. To compile literature on the subject *Sthoulya* both from ancient and modern sciences.
2. To assess the treatment given on the basis of the principle i.e. *Guru-Atarpana and Karshana* by the compound *Haritaki, Pippali and Madhu Yoga*.

- To compare the role of trial drug *Haritaki*, *Pippali*, *Madhu Yoga* with the routine diet.

MATERIALS AND METHODS

CTRI Number- Pending (submitted for approval)

IEC Number- 1250/G.A.C & H of dated 14/05/2019

Selection of Patients

The total 30 patients were selected by a special proforma covering demography both Subjective and Objective parameters from OPD and IPD of Govt. Ayurvedic College and Hospital, Balangir and Saradesweri Govt. Ayurvedic Hospital, Balangir. The consent of the patients was also taken before clinical trial. They had subjective parameter like *Ati Sweda* (excessive sweating), *Ati Kshudha* (excessive hunger), *Ati Pipasa* (excessive thirst), *Ati Dourgandhya* (excessive smell).

Inclusion Criteria:-

- Sthoulya patients diagnosed according to sign and symptoms as in classical texts.
- Sthoulya patients without any systematic disorder.
- Patients whose body mass index is >25 and <40 .
- Patients age between 20-50yrs of either sex.

Exclusion Criteria:-

- Pregnant woman and Lactating mother.
- Hereditary obesity.
- Secondary obesity or associated with Hypothyroidism, cushing's syndrom etc.
- Age below 20yrs and above 50yrs.
- Person undergoing treatment for any other serious illness.

Drugs Selection Criteria

The trial drugs are having , *Deepana* (appetizer), *Pachana* (digestive), *Srotovisodhna* (cleaning of channels), *Medohara*, *Lagu* (light), *rukshya* (dry), *guru Guna* (heavy), *Katu, tikta, kashaya rasa* (bitter, pungent, astringent) and *Kapha Vata samaka* properties. *Haritaki Pippali Madhu Yoga* was

taken for clinical trial and placebo drug (Wheat flour Capsule) for control group. The drugs were identified by the experts of Dept. of *Dravyaguna* which were approved by DRC and IEC of college and Sambalpur University. Medicines were prepared in the GMP certified Mini Pharmacy of College under the supervision of expert of *Rasashastra* and *Bhaisajya Kalpana*. The sample of research medicines were sent to ALN Rao Memorial Ayurvedic Medical College and PG Centre, Koppa, Chikmagalur, Karnataka for their analytical study before the clinical trial..

Trial Drug-1: Haritaki Pippali Madhu Yoga

Reference: *Charaka Samhita. Sutra sthana* 23rd Chapter

Ingredients: *Haritaki, Pippali and Madhu*

Schedule of treatment

Dose- 5 gm of *Haritaki Pippali Churna* mixed with adequate quantity of *Madhu* twice daily (Morning & evening) in empty stomach.

Anupana- *Kovushna Jala* (Luke warm water)

Duration- 60 days

Placebo Drug: -Wheat flour capsule

Ingredients: Wheat flour

Schedule of treatment

Dose-2 capsules (500mg) twice daily in empty stomach

Anupana- *Kovushna Jala* (Luke warm water)

Duration- 60 days

Pathological Investigation Criteria

Lipid profile was investigated before and after treatment.

ASSESSMENT CRITERIA

The Subjective parameters like *Ati Sweda* (Excessive sweating), *Ati Pipasa* (Excessive Thirst), *Ati Kshudha* (Excessive hunger) and *Ati Dourgandhya* (Foul body smell) and Objective parameters like Body weight, BMI, Abdominal Circumference, Buttock circumference and Lipid profile were included. All the Subjective parameters and Objective

parameters were assessed by the grading score from 0 to 3 according to the severity of disease. The overall assessment was done by considering the percentage of relief of both parameters and statistical evaluation.

The clinical study period of 30 patients were from 29/10/2020 to 30/04/2021. Within the aforesaid period the demography (Table No-01) based on Age, Sex, Religion etc. were recorded in tabular forms along with graphical presentations as follows (Table No-2 to 6 and Chart No-1 to 6) observed and assessed.

OBSERVATION AND RESULT

Table No-01: Showing the demographic incidence of registered patients (n=30)

Demographic Parameters	Maximum Percentage	Maximum Group
Age	40	31- 40 yrs
Sex	60	Female
Religion	100	Hindu
Marital Status	83.33	Married
Educational Status	83.4	Literate
Socio-economic Status	66.7	Middle
Desha	100	Jangala
Occupation	53.34	Housewives
Diet	80	Mixed
Dietary Habits	46.67	Adhyasana
Agni	43.4	Tikshnagni
Dominate Rasa in diet	46.7, 40	Amla, Madhura
Physical Work	53.4	Only routine work
Shareera Prakriti	43.33	Vata kaphaja

STATISTICALLY SHOW THE EFFECT OF TRIAL DRUG

Table No- 02: Effect of Haritaki Pippali Madhu Yoga in clinical features (n-15).

Subjective and Objective Parameters	Treatment Time	Mean	Median	SD	Wilcoxon W	P-Value	% Effect	Result
<i>Ati Sweda</i>	BT	1.80	2.00	0.86	-3.448 ^a	0.001	66.67	Sig
	AT	0.60	1.00	0.51				
<i>Ati Kshudha</i>	BT	1.13	1.00	0.83	-2.636 ^a	0.008	64.71	Sig
	AT	0.40	0.00	0.51				
<i>Ati Pipasa</i>	BT	2.00	2.00	0.85	-3.397 ^a	0.001	66.67	Sig
	AT	0.67	1.00	0.49				
<i>Ati Dourgandhya</i>	BT	1.13	1.00	0.83	-3.207 ^a	0.001	70.59	Sig
	AT	0.33	0.00	0.49				
BMI	BT	2.00	2.00	0.93	-2.000 ^a	0.046	13.33	Sig
	AT	1.73	2.00	1.16				
Abdominal Circumference	BT	3.33	3.00	0.62	-3.176 ^a	0.001	32.00	Sig
	AT	2.27	2.00	0.88				
Buttock Circumference	BT	3.53	4.00	0.64	-3.153 ^a	0.002	32.08	Sig
	AT	2.40	2.00	0.99				

(BT – Before Treatment, AT- After Treatment, S.D.- Standard deviation, P-Probability of W values at 14 degrees of freedom, Sig. - Significant)

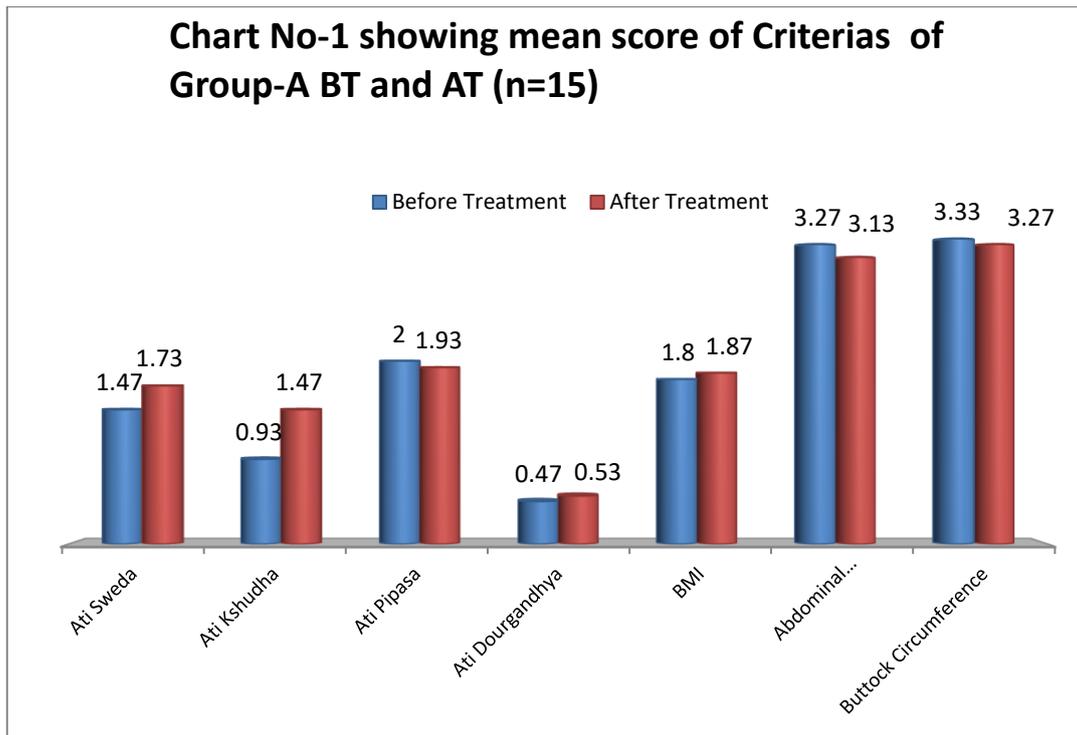
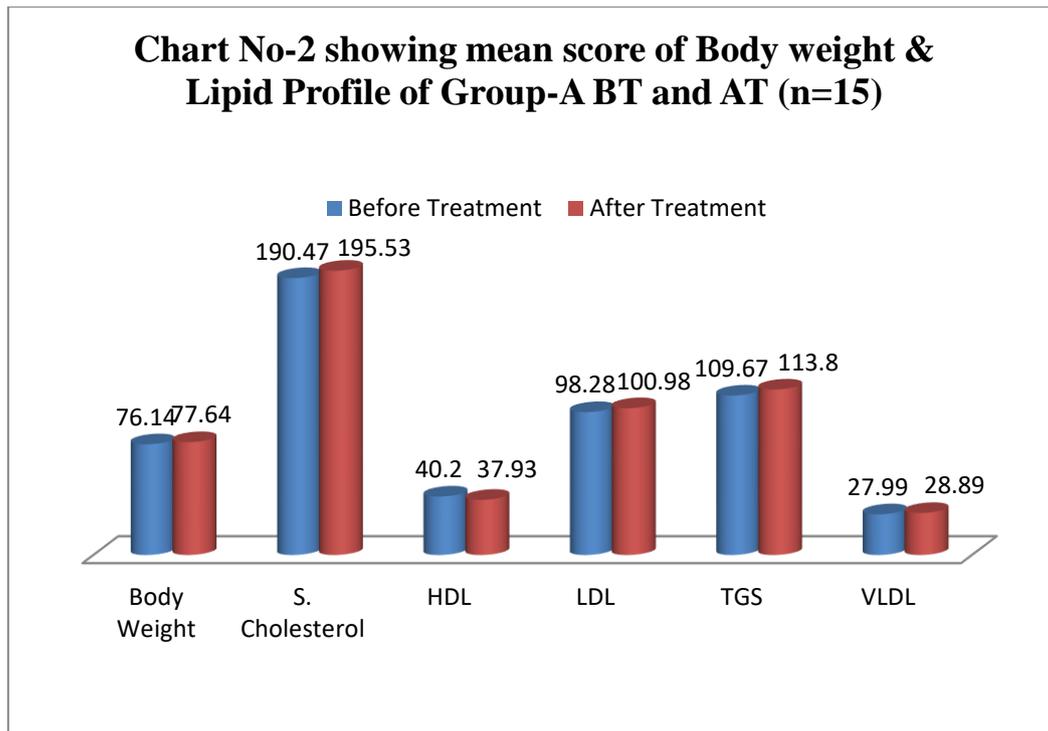


Table No- 03: Effect of *Haritaki Pippali Madhu Yoga* in Weight and Lipid Profile (n- 15).

Objective Parameters	Treatment Time	Mean	SD	SE	't'-value	P-Value	% Change	Result
Body Weight	BT	79.47	11.40	2.94	9.1216	0.0000	4.11	Sig
	AT	76.20	11.14	2.88				
S. Cholesterol	BT	186.47	41.91	10.82	2.6634	0.0185	7.19	Sig
	AT	173.07	30.32	7.83				
HDL	BT	39.49	5.82	1.50	-3.8263	0.0019	5.50	Sig
	AT	41.67	4.99	1.29				
LDL	BT	102.23	34.60	8.93	4.7522	0.0003	4.72	Sig
	AT	97.40	32.58	8.41				
TGS	BT	142.97	77.44	20.00	2.4762	0.0267	6.37	Sig
	AT	133.87	72.99	18.85				
VLDL	BT	27.37	17.85	4.61	2.4744	0.0268	6.13	Sig
	AT	25.69	15.73	4.06				

(BT – Before Treatment, AT- After Treatment, S.D. – Standard deviation, S.E. -Standard error, P-Probability of t values at 14 degrees of freedom, Sig. - Significant)



STATISTICALLY SHOW THE EFFECT OF PLACEBO DRUG

Table No- 04: Effect of Wheat flour Capsule (Placebo Drug) in clinical features (n-15).

Subjective and Objective Parameters	Treatment Time	Mean	Median	SD	Wilcoxon W	P-Value	% Effect	Result
<i>Ati Sweda</i>	BT	1.47	1.00	0.74	-1.265 ^a	0.206	-18.18	NS
	AT	1.73	2.00	1.28				
<i>Ati Kshudha</i>	BT	0.93	1.00	0.59	-.577 ^a	0.564	-57.14	NS
	AT	1.47	1.00	1.06				
<i>Ati Pipasa</i>	BT	2.00	2.00	0.93	-.577 ^b	0.564	3.33	NS
	AT	1.93	2.00	0.88				
<i>Ati Dourgandhya</i>	BT	0.47	0.00	0.64	-.577 ^a	0.564	-14.29	NS
	AT	0.53	0.00	0.64				
BMI	BT	1.80	2.00	0.86	-.577 ^a	0.564	-3.70	NS
	AT	1.87	2.00	0.83				
Abdominal Circumference	BT	3.27	3.00	0.80	-1.414 ^b	0.157	4.08	NS
	AT	3.13	3.00	0.92				
Buttock Circumference	BT	3.33	3.00	0.72	-1.000 ^b	0.317	2.00	NS
	AT	3.27	3.00	0.88				

(BT – Before Treatment, AT- After Treatment, S.D- Standard deviation, P- Probability of W values at 14 degrees of freedom, Sig. - Significant)

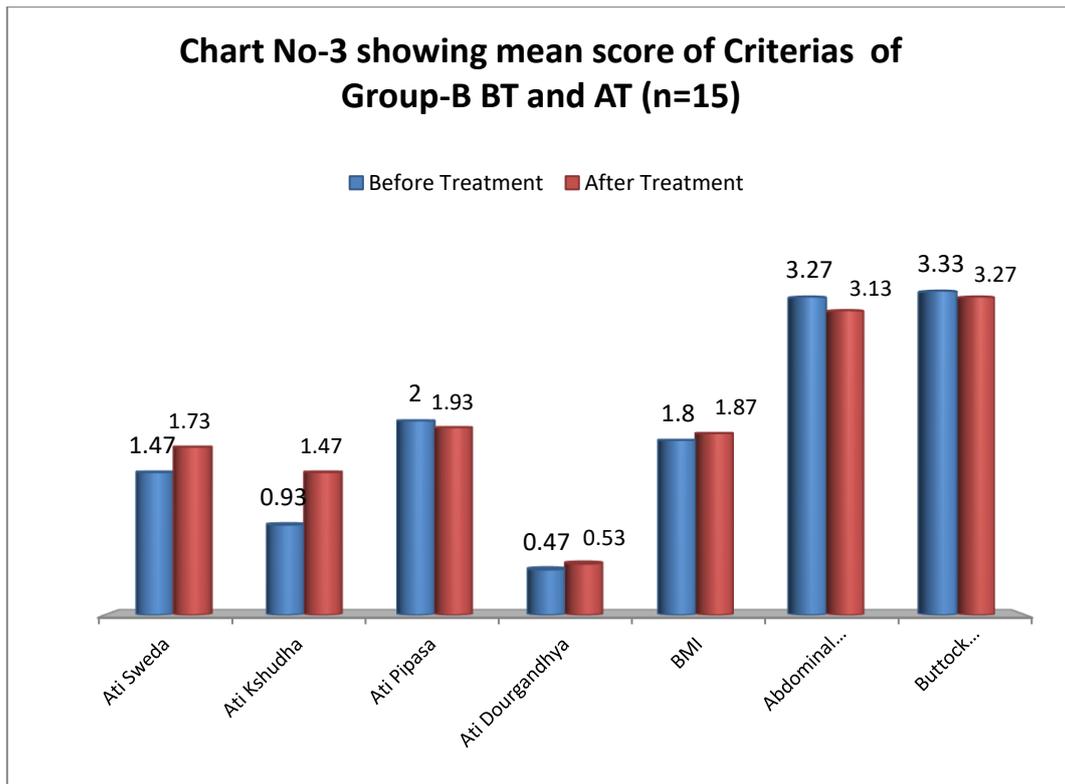
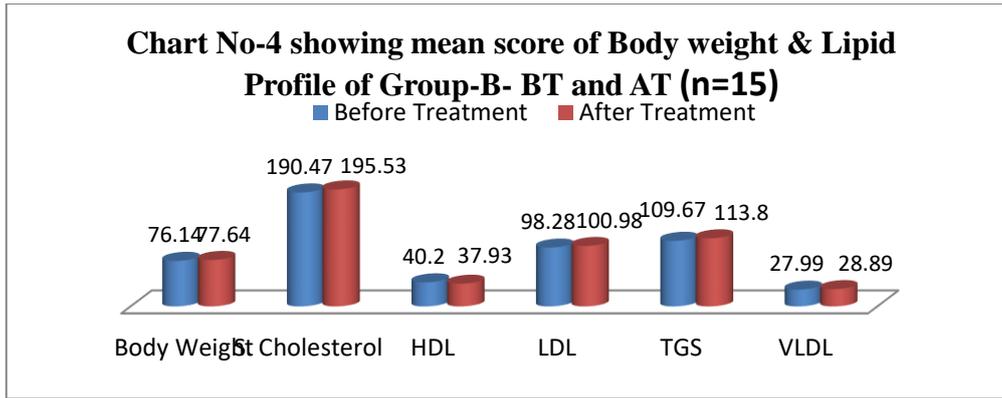


Table No- 05: Effect of Wheat flour Capsule (Placebo Drug) in Weight and Lipid Profile (n 15).

Objective Parameters	Treatment Time	Mean	SD	SE	't'-value	P-Value	% Change	Result
Body Weight	BT	76.14	11.24	2.90	-1.9743	0.0684	-1.97	NS
	AT	77.64	11.49	2.97				
S. Cholesterol	BT	190.47	42.10	10.87	-1.5309	0.1481	-2.66	NS
	AT	195.53	38.88	10.04				
HDL	BT	40.20	8.84	2.28	1.9517	0.0713	5.64	NS
	AT	37.93	8.33	2.15				
LDL	BT	98.28	30.10	7.77	2.0110	0.0640	-2.75	NS
	AT	100.98	30.95	7.99				
TGS	BT	109.67	22.46	5.80	1.8812	0.0809	-3.77	NS
	AT	113.80	25.60	6.61				
VLDL	BT	27.99	18.04	4.66	1.2342	0.2374	-3.24	NS
	AT	28.89	18.25	4.71				

(BT – Before Treatment, AT- After Treatment, S.D - Standard deviation, S.E -Standard error , P – Probability of t values at 14 degrees of freedom, NS – Not Significant)



Tab no- 06:- Showing Comparison between Group A and Group B (BT - AT)

For comparison between Group A and Group B for BT-AT values, here used Mann Whitney U Test.(because of Non – Parametric test)

	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value
<i>Ati Sweda</i>	Group A	15	22.13	332.00	13.000	0.00002
	Group B	15	8.87	133.00		
	Total	30				
<i>AtiKshudha</i>	Group A	15	20.43	306.50	38.500	0.00095
	Group B	15	10.57	158.50		
	Total	30				
<i>AtiPipasa</i>	Group A	15	22.07	331.00	14.000	0.00001
	Group B	15	8.93	134.00		
	Total	30				
<i>AtiDourgandhya</i>	Group A	15	20.80	312.00	33.000	0.00023
	Group B	15	10.20	153.00		
	Total	30				
BMI	Group A	15	17.73	266.00	79.000	0.04598
	Group B	15	13.27	199.00		
	Total	30				
Abdominal Circumference	Group A	15	20.77	311.50	33.500	0.00027
	Group B	15	10.23	153.50		
	Total	30				
Buttock Circumference	Group A	15	21.17	317.50	27.500	0.00008
	Group B	15	9.83	147.50		
	Total	30				

- ❖ From above table it observes that, P-Values for almost parameters are less than 0.05.
- ❖ Hence it concludes that, there is significant difference between Group A and Group B.
- ❖ Effect observed in Group A is more than Group B

Table no. 07: showing comparison between Group A and Group B (BT - AT)

For comparison between Group A and Group B, here used unpaired t-test.

	Group	N	Mean Diff	SD	SE	t-Value	P-Value	Result
Weight	Group A	15	3.27	1.39	0.36	5.874	0.000	Sig
	Group B	15	-1.40	2.75	0.71			
S. Cholesterol	Group A	15	13.40	19.49	5.03	3.067	0.005	Sig
	Group B	15	-5.06	12.80	3.31			
HDL	Group A	15	2.17	2.20	0.57	5.546	0.000	Sig
	Group B	15	-2.27	2.19	0.56			
LDL	Group A	15	4.83	3.93	1.02	4.805	0.000	Sig
	Group B	15	-2.70	4.62	1.19			
TGS	Group A	15	9.10	14.23	3.67	3.091	0.004	Sig
	Group B	15	-4.13	8.51	2.20			
VLDL	Group A	15	1.68	2.63	0.68	2.585	0.015	Sig
	Group B	15	-0.91	2.85	0.73			

- ❖ For comparison between Group A and Group B, here used unpaired t-test. From above table we can observe that, P-Values for all parameters are less than 0.05.
- ❖ Hence it concludes that, there is significant difference between Group A and Group B.
- ❖ Further it observes that, effect observed in Group A is more than Group B.

DISCUSSION

It has been revealed on demography incidence (Table No-01) that mostly middle age, female, Hindu, married person having *tikshnagni*, middle class family, residing in *jangala desha*

and housewives were more prone to *Sthoulya*(obesity)

It was observed that number of patients with clinical features in before treatment and after treatment of trial drugs (group A) were reduced and revealed that the mean percentage of improvement is 66.67%, 64.71%, 66.67%, 70.59%, 13.33%, 32% and 32.08% in *Ati Sweda* (excessive sweating), *Ati Kshudha* (excessive hunger), *Ati Pipasa*(excessive thirst), *Ati Dourgandhya*(excessive smell). BMI , abdominal circumference and buttock circumference respectively in group A (Table No-02). Where as in group B, there was no such

improvement in the subjective and objective parameters (Table No- 04).

It was observed that the lipid profile test before treatment and after treatment of trial drugs (Group A) were reduced and revealed that the mean percentage of improvement is 4.11%, 7.19%, 5.50%, 4.72%, 6.37%, 6.13% in body weight, Serum cholesterol, HDL, LDL, TGS and VLDL respectively (Table No- 03), where as the placebo drug (Group B) has no improvement in body weight & Lipid profile value (Table No-05)

It has been revealed that the Subjective

Parameter and objective parameters of Group A the trial drug *Haritaki Pippali Madhu yoga* show statistically significant result with p -value <0.05 (Table No-02) and the Group B , Wheat flour capsule(Placebo drug) show Statistically not significant/ insignificant result with p – value > 0.05 (Table No.4)

It has been revealed that the Objective Parameter like body weight and lipid profile value show statistically significant result with p -value <0.05 in group A (Table No- 02) and in group B it show statistically insignificant result with p -value >0.05 (Table No.5)

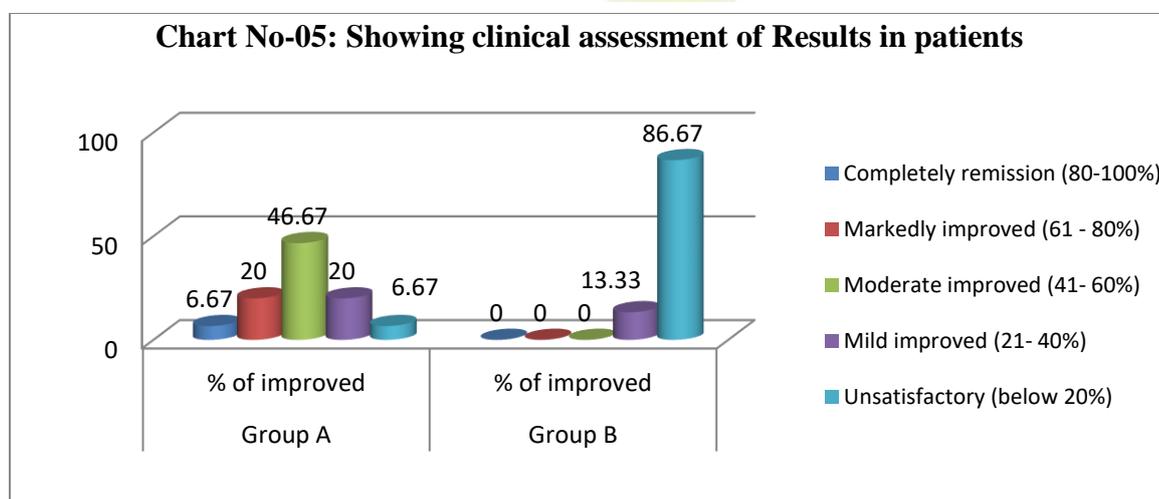
TableNo-08: Showing Clinical Assessment of Results in patients (n=30)

Clinical Assessment	Group A		Group B	
	Frequency	% of improved	Frequency	% of improved
Completely remission (80-100%)	1	6.67	0	0
Markedly improved (61 - 80%)	3	20	0	0
Moderate improved (41- 60%)	7	46.67	0	0
Mild improved (21- 40%)	3	20	2	13.33
Unsatisfactory (below 20%)	1	6.67	13	86.67

It has been revealed that in Group A- 1 (6.67%), 3 (20%), 7 (46.67%) and 3(20%) patients were shown completely remission, marked, moderate, mild improvement and 1 (6.67%)

patient was shown unsatisfactory result and in Group B – 2 (13.33%) patients were mild improved and rest 13(86.67%) patients were shown unsatisfactory result (Table No-09)

Chart No-05: Showing clinical assessment of Results in patients (N=30)



With the detail discussion about the trial drugs for the treatment of *Sthoulya (Obesity)* adopted in the principle by *Maharshi Charaka* is true and can be implemented for the benefits of public.

CONCLUSION

The existing review reveals prevention and Ayurvedic management of *Sthoulya (obesity)* by *Guru Atarpana and karshna therapies*(emaciation). Drugs used for principle of treatment “*Guru Chaatarpana*” i.e. *Haritaki Pippali Madhu Yoga* was provided significant result by reducing the signs and symptoms of *Sthoulya* but that drugs were not much more effective on Lipid profile value. All the drugs having *Guru, Apatarpana and Kaphamedo hara* properties that result in alleviation of the disease. So, we can conclude that the treatment principle depicted by *Acharya Charak* for the management of *Sthoulya* is found to be very effective. In addition it is more economical and painless treatment with no side effects. Present study was carried out with certain limitations like less sample size and shorter duration of treatment time. Forth coming researchers may pursue further study in a large sample size over a period of longer duration.

In assessing overall effect of therapy it was seen that-

- ❖ Overall comparison showed that best results were obtained in the trial compound (Group A) in the form of better statistical significance and percentage relief than the control group.
- ❖ Present study reveals that the selected management has potential effect on *Sthoulya (Obesity)* with the added advantage of being free from side effects.

- ❖ **Acknowledgment:** Nil.
- ❖ **Financial Support:** Nil.
- ❖ **Conflict of Interest:** Nil

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