



Comparative Study of Clinical Efficacy of Antaparimarjan Chikista (Ghan Vati) and Bahiparimarjan Chikista (Udhavartana) in Atisthaulya W.S.R to Mustadi Yog in Obesity

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Investigation Paper

Volume 4 Issue 4

Received Date: December 14, 2020

Published Date: December 31, 2020

DOI: 10.23880/jonam-16000286

Abstract

Sthoulya (Obesity) is the major and basic cause of lifestyle disorders like Diabetes mellitus (T2DM), Coronary heart disease (CHD), Hypertension. *Sthoulya* (Obesity) is increasing at an alarming rate in developed industrialized countries which are undergoing rapid nutrition and lifestyle transition. Obesity is one of the most effective diseases which affect someone's social, physical and mental status. In *Ayurveda*, *Sthoulya* (Obesity) is regarded as *Medoroga*, a disorder of *Meda Dhatu*, which includes fat tissue and fat metabolism. According to *Ayurveda*; *Sthoulya* begins with an imbalance of *Doshas* (*Vata*, *Pitta* and *Kapha*), *Agni* (digestive fire), *Malas* (waste products) or an imbalance of *Srotas* (microcirculatory channels). This collection of imbalances then interferes with the formation of tissues or *Dhatu*s and leads to a tissue imbalance that we experience as excess weight. So in this study, *tikta rasapradhan* drugs in compound formulation of *Mustadi Ghan vati* as *Antaparimarjan chikitsa* (60 patients were selected) and *Mustadi churna Udhavartana* as *Bahiparimarjan chikitsa* (60 patients were selected) has been selected. The result of study showed that excessive intake of oily and fatty food, sedentary lifestyle, and psychological factor along with genetically predisposition play a major role in *aetiopathogenesis* of *sthoulya* (obesity). Furthermore it was also found that *Mustadi Ghan vati* effectively helps in reducing Wt. & BMI ratio. The effect of study shows that *Mustadi ghan vati* provided better relief comparative to *Mustadi churna Udhavartana* in the management of *Sthoulya*.

Keywords: *Sthoulya*; *Medoroga*; *Mustadi Kwath Ghanvati*; *Mustadi churna*; *Antaparimarjan* and *Bahiparimarjan Chikista*

Introduction

The nature has taught the man how to be healthy before science has discovered the law of health, but it is an irony of the fate that on this earth on one hand millions do not get enough food and roam in skeletal appearance while on the other hand there are so many more who, beside over eating leads sedentary life to march towards an untimely death. Obesity is blessing of modern age of machines and materialism. It is physiological and psychological as well as social disorder, which is most disfavored by modern society for social and medical reasons. The present day society expects peak physical and mental performance from each of

its member and obese person is unable to find out himself physically and mentally fit for it. It occurs as a result of physical activities with increased intake of daily diet results into clinical entity which can be called as obesity. According to WHO (report 2012), Obesity is one of disease among top ten selected risk to the health.

- 350 million Causes of obesity reported.
- 12%are of adult of total population.
- Total health care expenditure for obesity patients is 10-15%.

The common way to find out whether you are *Sthoulya* or *Atisthool* is ascertained by calculating the Body Mass Index

(BMI). BMI is an estimate of body fat and can indicate risk for disease. BMI is a simple index and calculated by dividing person weight in kilograms by his height in square meters. The World Health Organization [1] (WHO) defines as follows:

A definition of *Swastha Purusha* [2,3]; a healthy body is the only one media to achieve ultimate goal among the *Chaturvidh Purushartha*. *Acharya Sushrut* also told that *Madhyam shariris* the best but *Atisthula* and *Atikrisha* are always affected with some complaints. *Acharya charaka* has quoted a *Sthoulya* under the eight varieties of important which designated as *Astaunindita purusha*, *Sthoulya* comprises one of them. In pathogenesis of *Sthoulya* [3], *kapha (kledak)*, *vata(saman and vyana)*, *medo dhatu* (fats, lipid), *medodhatwagni mandyata* are main responsible factors. So in this study, *tikta rasapradhan* drugs in compound formulation of *Mustadi Kwath Ghanvati* for *Antaparimarjan* and *Mustadi churna Udhavartana* for *Bahiparimarjan* has been selected. *Acharya Charaka* [4.5] has stated that regular administration of *Mustadi Kwath* as a formulation can cure all the *Santarpanjanya Vyadhis* or diseases due to over nutrition [6].

The content of *Mustadi Kwath* is easily available throughout year. They have properties like *lekhan*, *deepan*, *pachan*, *anuloman*, *karshan*. All are *kaph-pitta shamak*, so they help in correcting the fat metabolism, restore cholesterol. *Udhavartana* normalize *kapha* and liquefies *Meda* by giving firmness and increased its complexion, increased *sukradhatu* and also give strength to the body. It increases formation of blood.

According to *Acharya sushruta* [7,8], *Udhavartana* helps to restore the deranged *vayu* of to it the body its normal condition and also liquefies *kapha* and *meda* of the body by

Grouping (Table 1)

Groups	No. of patients	Age	Sex	Intervention	Dose/day	Duration
Group A	30	18 yrs to 60 yrs	Male and Female	<i>Mustadi kwath Ghanvati</i>	500mg Tab. 2tabs/day Before meals with Koshna jal	6weeks
Group B	30	18 yrs to 60 yrs	Male and Female	<i>Mustadi churna Udhavartana</i>	As required	6weeks

Table 1: Grouping.

Selection of Cases

Patients having classical signs and symptoms of *Sthoulya* were selected after clinical & objective examination. I had selected 60 patients of *Sthoulya*. These patients were selected randomly Follow-up assessment was done by specially prepared case record forms of every patient to meet

giving cleanness and smoothness to the skin. It also dilate orifices of *sira* and increase *twakgat agni (bhrajak agni)*.

Aim

To study the clinical efficacy of *Mustadi Kwath Ghan Vatiin Antaparimarjan chikista* and *Mustadi Churna Udhavartanain Bahiparimarjan chikista* in *Sthoulya* (obesity).

Objectives

- To assess the effect of compound formulation of *Mustadi Kwath Ghanvati* for *Antaparimarjan* in *Sthoulya* i.e. obesity.
- To assess the effect of *Mustadi Churna Udhavartana* for *Bahiparimarjan* in *Sthoulya* i.e. obesity.
- To evaluate the changes in lipid profile, weight and BMI due to *Antaparimarjan* and *bahiparimarjana chikista*.
- Comparison in between *Mustadi Kwath Ghanvati* for *Antaparimarjan* and *Mustadi Churna Udhavartana* for *Bahiparimarjan*

Materials and Methods

Research Design

A Randomized Control Trial

Participant

- Patients: *Sthoulya* (Obesity)
- Gender-Both Male and Female
- Age- From 18 yrs-60 yrs of age.

Sampling Procedure

Comparative, Open, Random sampling

all baseline requirement. Follow-up signs & symptoms were recorded.

Method of Selection of Patients

➤ Inclusion Criteria

- Patients having cardinal signs and symptoms of *Sthoulya*

- Age - 18 to 60 years.
- B.M.I. -25-30kg/m
- Both sexes
- Willing to give written informed consent.

➤ Exclusion Criteria

Diagnosed cases of:

- Diabetes
- Cardiopulmonary disease
- Parkinson's disease
- Pregnant and Lactating women
- Age below 18 and above 60

- BMI below 25 and above 30 kg/m²
- Patients who refuse to participate in study

➤ Investigations

- CBC with ESR
- Lipid profile
- BSL fasting & postprandial
- Urine routine & microscopic

➤ Drug

Contents of *Mustadi Kwath Ghanavati* (cha.su.23/11) (Table 2).

Sr. No.	Name	Latin name	Part
1	<i>Musta</i>	<i>Cyperus rotundus</i> Linn.	1 part
2	<i>Aragvadha</i>	<i>Cassia fistula</i> Linn.	1 part
3	<i>Patha</i>	<i>Cissampelos pareira</i>	1 part
4	<i>Amalki</i>	<i>Phyllanthus emblica</i>	1 part
5	<i>Haritki</i>	<i>Terminalia chebula</i>	1 part
6	<i>Bibhitak</i>	<i>Terminalia bellirica</i>	1 part
7	<i>Devdaru</i>	<i>Cedrus deodara</i>	1 part
8	<i>Gokshur</i>	<i>Tribulus terrestris</i>	1 part
9	<i>Khadir</i>	<i>Senegalia catechu</i>	1 part
10	<i>Nimba</i>	<i>Azadirachta indica</i>	1 part
11	<i>Haridra</i>	<i>Curcuma longa</i>	1 part
12	<i>Daruharidra</i>	<i>Berberis aristata</i>	1 part
13	<i>Tvak</i>	<i>Cinnamomum verum</i> Presl.	1 part
14	<i>Kutaj</i>	<i>Holarrhena antidysenterica</i> wall.	1 part

Table 2: Name/Latin Name.

Method of Preparation

Mustadi kwatha ghanavati (MKG) was prepared in the laboratory by following classical method described in 'Ayurvedic Formulary of India'. In addition, its main ingredients include 9 traditional medicinal herbs. All the ingredients of MKG were procured from the local market. For bahiparimarjan chikista—all the above drugs should be taken in powder form in equal amount.

Diet

All Pathyakar ahar vihar mentioned in Obesity.

Diagnostics Criteria

- Patients with Body Mass Index in between 25-30kg/m² considered as Obese.
- Patients having clinical signs & symptoms of *Sthoulya*.

Follow up

- Symptomatic improvement, after every week.
- Lab Investigations done before and after treatment.

Case Record Form

Record, of all patients included in trial is documented & follow up is mentioned in case record forms.

Clinical Examination

Complete clinical examination from the point of view of obesity to diagnose & assess the condition of patient.

Criteria of Assessment

Symptoms of obesity plus Symptoms of *Sthoulya* mentioned in the text or practically observed are assessed at each follow up. Presence or absence of these symptoms will

be registered. Different symptoms graded into four grade scales (0-3) on the basis of severity to assess the changes in clinical symptoms of *Sthoulya*. Study of changes in gradation

of each symptom was done before and after treatment (Table 3).

Sr. No	Parameters	Symptoms	Scoring
1	<i>Kshudrashwas</i>	<i>Shwas</i> at rest.	3
		<i>Shwas</i> on little exertion	2
		<i>Shwas</i> on more exertion	1
		No <i>kshudrashwas</i>	0
2	<i>Daurgandhya</i>	Severe	3
		Moderate	2
		Mild	1
		No <i>Daurgandhya</i>	0
3	<i>Swedatipravritti</i>	<i>Swedatipravritti</i> at rest.	3
		<i>Swedatipravritti</i> on little exertion	2
		<i>Swedatipravritti</i> on more exertion	1
		No <i>Swedatipravritti</i> .	0
4	<i>Aalasya</i>	Feels good than sleeping than lying.	3
		Feels good while lying than sitting.	2
		Feels good than sitting than standing.	1
		Feels good while walking/standing than sitting	0
5	<i>Daurbalya</i>	Tiredness of the whole day.	3
		Tiredness upto 12hrs.	2
		Tiredness for the 6-8 hrs.	1
		No tiredness.	0
6	Constant Hunger correlated with <i>Kshudhaativridhi</i>	Requires total 2 meals & 4 breakfast still feels hungry.	3
		Requires extra meal / heavy breakfast additional to regular 2 meals to satisfy	2
		Requires 1 extra breakfast with 2 meals & regular/Light breakfast to satisfy.	1
		Two meals a day with light breakfast satisfies hunger	0

Table 3: Parameters/Symptoms.

Total Effects of Therapy

Percentage of relief in symptom & signs with respect to each of patient will be as follows & will be classified as per definition described of Cured, Markedly improved, Improved & Unchanged.

➤ **Cured:** Complete relief in signs and symptoms along with certain lab parameter & maintenance of same condition for about one yr. without medicine will be considered as cured.

➤ **Markedly improved:** 50% & more than 50% relief in sign & symptoms of the patients along with certain definite changes in physical & biochemical parameter will be considered as markedly improved.

➤ **Improved:** 25% to 50% relief in signs & symptoms as mentioned in criteria of assessment will be considered to be improved.

➤ **Unchanged:** Patient who does not have any relief in signs, symptoms & lab investigation will be considered as unchanged. Along with this, the patient exhibiting improvement < 25% is also kept in this group.

Observation and Results (Tables 4-8)

Sr.no	Ahara pattern	No. of patients Gr. A(n=30)	No. of patients Gr. B (n=30)	Total no of patients studied (n=60)	Total %
1	Veg	8	6	14	23.33%
2	Mixed	22	24	46	76.66%
	Total	30	30	60	100

Table 4: Showing Ahara pattern Distribution in 60 patients of *Sthaulya*.

Sr. no	Prakriti	No. of patients Gr. A(n=30)	No. of patients Gr. B(n=30)	Total no of patients studied(n=60)	Total %
1	Kapha-Vata	3	5	8	13.33
2	Kaph -Pitta	15	15	30	50
3	Pitta -Vata	3	1	4	6.66
4	Pitta -Kapha	7	7	14	23.33
5	Vata -Kapha	1	1	2	3.33
6	Vata -Pitta	1	1	2	3.33
	Total	30	30	60	100%

Table 5: Showing Prakriti of 60 patients of *Sthaulya*.

Sr. no	Agni	No. of patients Gr. A(n=30)	No. of patients Gr. B(n=30)	Total no of patients studied (n=60)	Total %
1	Mandagni	8	8	16	26.66%
2	Tikshna	12	13	25	41.66%
3	Visham	10	9	19	31.66%
	Total	30	30	60	100%

Table 6: Showing Agni in 60 patients of *Sthaulya*.

Sr. no.	Koshta	No. of patients Gr. A(n=30)	No. of patients Gr. B(n=30)	Total no of patients studied(n=60)	Total %
1	Krura	8	9	17	28.33
2	Madhyam	12	11	23	38.33
3	Mrudu	5	5	10	16.66
	Total	30	30	60	100%

Table 7: Showing Koshta of 60 patients of *Sthaulya*.

Sr. no.	Symptoms	Group A				Group B			
		BT	AT	Diff.	% Relief	BT	AT	Diff.	% Relief
1	Kshudraswash	53	20	33	62.26%	52	42	10	19.23%
2	Daurgandhya	42	19	23	54.76%	48	24	24	50%
3	Swedatipravritti	58	15	43	73.13%	64	27	37	57.81%
4	Alasya	50	14	36	72%	54	34	20	37.10%
5	Daurgandhya	46	16	30	65.21%	54	36	18	33.33%
6	Atiksudha	36	17	19	52.77%	34	26	8	23.52%
Average score		47.5	16.8	30.7	64.63%	51	31.5	19.5	38.23%

Table 8: Showing effect on Symptoms Score of 60 Patients of *Sthaulya*.

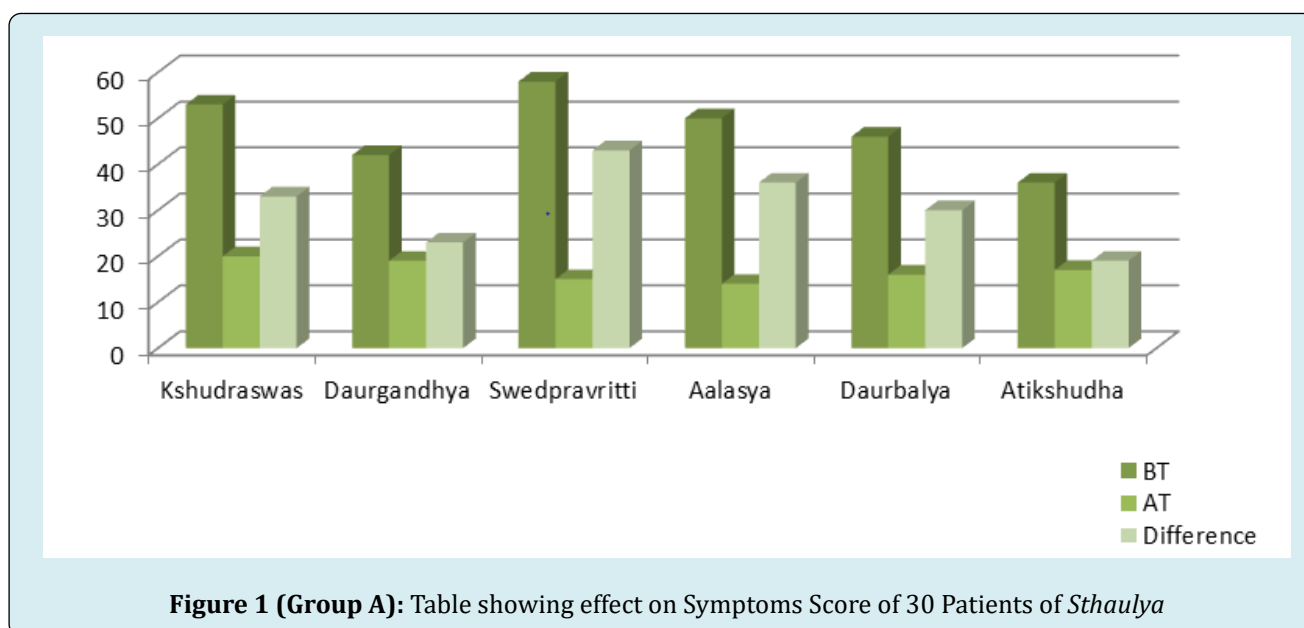
Discussion

A Study entitled Comparative Clinical Study of role of *Mustadi Kwath Ghana vati in Sthaulya (Obesity)* by *Antaparimarjan* and *Mustadi Churna in Bahiparimarjan Chikista* was under taken. At the end of the study, following points can be concluded on the basis of Observations made in the form of Tables & Graphs and minutely discussed in the previous chapters, following conclusion are drawn.

- Majority of Patients were from the age group 30-50yrs.
- There was more number of Females than Males. Females are more prone to obesity due to feminine factor like menopause and aggravating factors like delivery, I.U.C.D., oral contraceptive pills, miscarriage.
- Maximum numbers of Patients were of Hindu religion.
- Most of the Patients were from middle and Upper Middle Class and were educated.
- Incidence of family History of *Sthaulya* was observed in 35%. While no such history was noted 65%.
- Most of the patients (76.66%) have mixed-diet Habit.
- Most of the patients work was of sedentary type causing *Sthaulya*.
- Most of the patients had habits related to *Vihar* like *Asyasukh, Swapnasukh, Chankramandwasha*
- Most of the Patients are of *Kapha prdhan prakriti*.
- Most of the patients having *Madhyam Samhanan, Madhyam Satva & Madhyam vyayam shakti*.
- All patients were residing at *Anup Desha* for a longer

period.

- *Meda, Mamsa&Rasa Dhatudushti* were seen markedly in all the patients.
- *Medovaha, Udakvaha, Mootravaha & Swedavaha Srotodushti* were found remarkably in all the patients.
- A significant improvement was observed in symptoms of patients of group A.
- Comparison between two groups with respect to symptoms score was evaluated by Mann Whitney's test & significant difference was noted in both groups for symptoms like- *ksudraswash, Alasya, Daurbalya*.
- No significant difference was noted in both groups for symptoms like *swedatipravritti, Daurgandhya, Atiksudha*.
- Also parameters of Group A like Weight, Waist circumference, BMI & hematological parameters like T. Cholesterol, showed extremely significant results by unpaired't' test in comparison with *Bahiparimarjan chikista*.
- In *Mustadi ghan Vati* having Highly Significant results were obtained in comparison to *Mustadi Churna Udhavartana*.
- In case of Group A Patients-27(90%) were improved, patients 2(6.66%) were Markedly improved, 1(3.33%) patients remain unchanged & No one patient was cured completely.
- In case of Group B, 11(3.33%) Patients were improved, no patients were markedly improved, and 19 (63.33%) patients remain unchanged.



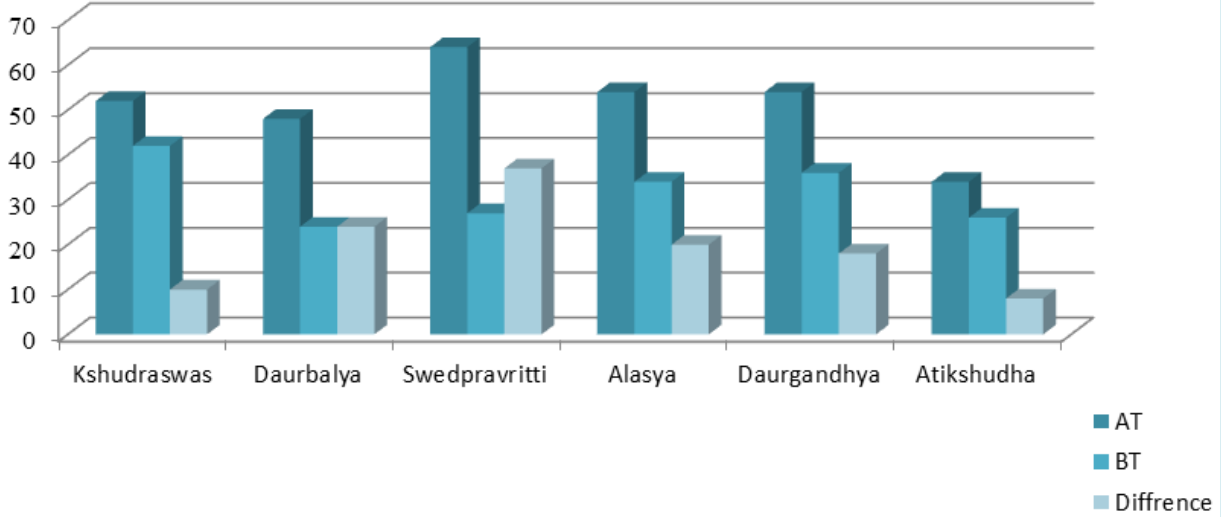


Figure 2 (Group B): Table showing effect on Symptoms Score of 30 Patients of *Sthoulya*

Conclusion

Mustdi Kwath Ghanvati (Antaparimarjan Chikista) has provided better result in almost all the parameters than *Mustadi churna (Udhavartana chikitsa)* because it eliminates *Doshas* from the body and simultaneously absorbed drug perform its action of *SampraptiVighatana* at cellular level. Hence, it is concluded that '*Antaparimarjan chikista*' is effective than '*bahiparimarjan chikista*' in treating symptomatic conditions *Sthoulya* i.e Obesity. Though this is not a detailed study in the field of *Ayurveda* & Obesity, it has been carried out sincerely on its level. The results of this work are encouraging & may become a ray of hope that will split the darkness of ignorance about the concepts of *Ayurveda*. The efficacy of this drug can be evaluated further along both parallel treatments with larger sample size & prolonged duration of treatment in future.

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