International Journal of Ayurveda and Pharma Research

Research Article

COMPARATIVE STUDY OF *MADHU UDAK* AND *KOSHNA JALA* AS *ANUPANA* IN *STHAULYA*

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ABSTRACT

Today, the world is reeling on the verge of an epidemic. This epidemic also termed as the 'New World Syndrome', which houses a cluster of non-communicable diseases is called as 'Obesity'. *Koshna Jala* and *Madhu Udak*, both have *Kaphashamak* activity and predominantly act on *Meda dhatu*. Thus, the need to explore their role as *Anupan* for the '*Yog*' comprising of *Triphala*, *Musta* and *Vidanga*. **Aim of the Study:** To compare the effect of *Madhu Udak* and *Koshna Jala* as *Anupan* along with *Triphala*, *Vidanga* and *Musta* as combination in subjects of *Sthaulya*. **Objective of Study:** To understand and explain precisely the concept of *Anupan*. **Type of Study:** Randomized controlled clinical trial. **Plan of Clinical Trial:** The total number of subjects were 60. **Investigations:** Investigations were done before starting the treatment. **Statistical Analysis**: Paired & unpaired 't'-test & Wilcoxon - matched - pairs Signed - ranks test- were used for statistical analysis. **Conclusion:** *Triphala, Vidanga* and *Musta* given to the *Sthaulya* patients for 12 week which showed significant reduction in weight and other symptoms which is proved highly significant statistically. Both the *Anupan Madhu Udak* & *Koshna Jala* were effective but *Madhu udak* was found to be more effective.

KEYWORDS: *Triphala, Vidanga, Musta, Anupan, Sthaulya.*

INTRODUCTION

The quest of Humans to understand body, mind and soul, their nature, ways to keep them at tranquillity and solutions to get them back to their primitive forms when deranged, led to the origin of the Science of Life or rather happy life called '*Ayurveda'*.

A number of surveys have been carried out in our country as well as all over the world to trace the incidence of Obesity. The results of these surveys are alarming and seek immediate action. Some of the key facts as stated by WHO are as follows. [1]

- Worldwide Obesity has nearly doubled since 1980.
- In 2008, more than 1.4 billion adults, 20 and older, were overweight.
- In 2011, more than 40 million children under the age of 5 were overweight. Once considered a high income country problem, overweight and obesity are now on the rise in low and middle income countries, particularly in urban settings.

Obesity has been like a curse with human race since ancient times. In Ayurveda, the condition called '*Sthaulya'* can be compared with Obesity.

Sthaulya has been mentioned under "*Ashtanindita-purusha*" In *Charak Samhita*. [2]

Anupan is a substance, which is taken along with or after the intake of *Aushadha* or *Aharadravya*.

Anupan enhances the action of *Dravya* with which it is administered and thereby achieves *Tarpana*, *Preenana*, *Brimhana*, *Urja* etc effects quickly. It helps in carrying the *Aushadhadravya* to the target site and increases its bioavailable and facilitates easy absorption. [3]

For causing emaciation use water mixed with honey for those who are obese. [4]

In conditions caused by the aggravation of *Vata*, unctuous & hot post-prandial drinks are useful, in *Pitta* sweet & cold, in *Kapha* unctuous & hot post prandial drinks are useful. [5]

Anupan is a vehicle which is administered internally either with drugs or after the drugs. It may consists of drugs which may have either direct action on particular disease or enhance the effect of the main drug.

In the pathology of *Sthaulya*, *Kapha* is predominant *Dosha* and *Meda* is predominant *Dushya*. *Agnimandya* takes place at *Medodhatvagni* level. So, the drug therapy which has *Kapha* and *Medanashaka* property and which correct the *Medodhatvagnimandya* should be selected.

By virtue of the *Rasapanchaka*, the drugs selected i.e., *Triphala*, *Vidanga* and *Musta* are very well indicated in *Kapha* predominant pathologies.[6]

Due to this property, it breaks the *Samprapti* of *Sthaulya*. As it is *Dipana* and *Pachana* it can act well in certain *Vata-Kapha* condition like *Sthaulya*. Most of the drugs selected have *Guna- Laghu*, *Ruksha Rasa- Katu*, and *Virya- Ushna*, *Vipaka- Katu*, *Vata -Kaphashamaka* may be effective to control *Sthaulya*. Therefore, it was selected as trial drug.

Sthaulya is also the disease of *Medoroga*. So, in the above context, combination of *Katu-Rasa* & *Ushna-Virya Pradhana* drugs -combination of *Triphala*, *Vidanga* and *Musta* was selected for clinical trial.

AIM OF THE STUDY

To compare the effect of *Madhu Udak* and *Koshna Jala* as *Anupan* along with *Triphala*, *Vidanga* and *Musta* as combination in subjects of *Sthaulya*.

OBJECTIVES OF STUDY

- To understand and explain precisely the concept of *Anupan*.

- To study the role of *Anupan* in *Chikitsa*.

- To evaluate the changes in Weight, Waist Hip ratio and Body Mass Index in patients of *Sthaulya* due to oral intake of *Triphala*, *Vidanga* and *Musta* as combination along with *Madhu Udak* and *Koshna Jala* as *Anupan*.

- To review literature of Concept of *Anupan*, *Sthaulya* and drugs *Triphala*, *Vidanga* and *Musta* in details.

TYPE OF STUDY- Randomized controlled clinical trial.

MATERIALS

Materials used for Study

- Digital Weighing machine

- Measuring tape

- Body fat Monitor

- Height Measuring Scale

METHODS: STUDY DESIGN

Ethical clearance from Ethical Committee was taken and approval was received from the University.

Research design: Present study was a two group clinical study with pre and post-test design, conducted in the year 2014 at Dr.D.Y.Patil college of Ayurved & Research Institute, Nerul, Navi Mumbai. **Sample: Grouping:** A total number of 60 samples were selected and randomly allocated into two groups. Group A with 30 samples and Group B with 30 samples.

METHOD OF PREPARATION OF DRUG: Method adopted

- Drug *[Triphala (Amalaki- Embilica officinalis, Haritaki- Terminalia chebula, Bibhitaki- Terminalia bellerica), Vidanga- Embelia ribes, Musta- Cyperus rotundus]* was procured from Authorized source.

Authentification of the drug was done from Certified Research Laboratory. Honey was procured from Phonda Ghat pharmacy. Standardized natural processed Honey was used.

BIOMASS MIXING OF DRUG

WEIGHING OF DRUG

CRITERIA FOR SELECTION OF PATIENTS

- **Inclusion Criteria**

  - The individuals coming under diagnostic criteria of *Sthaulya* were selected.

  - Individuals of either sex in the age group 17-60 years were selected.

  - The individuals willing for the treatment were selected.

- ➢ **Exclusion Criteria**
  - Pregnant and lactating women were excluded.
  - Individuals with other systemic disorders that interfere the course of study were excluded.

Assessment criteria

Subjective parameters

The efficacy of the therapy was assessed on the basis of subjective as well as objective criteria. Score was given according to the severity of symptoms as follows:

Grade1	Assessment of *Chalasphik, Stana & Udara*	Score
A	Absence of *Chalatva*	0
B	*Chalatva* during fast movement	1
C	*Chalatva* during moderate movement	2
D	*Chalatva* during slight movement	3

Grade 2	Assessment of *Ayathaupachaya, Utsahahani* (sluggish movement of body)	Score
A	Unimpaired *Utsaha*	0
B	On desire can work sluggishly but properly	1
C	On desire can work sluggishly but improperly	2
D	Even on desire do not like to work	3

Grade 3	Assessment of *Swedadhikya*	Score
A	No sweating	0
B	Profuse sweating after moderate work	1
C	Profuse sweating after slight work	2
D	Sweating even in resting condition	3

Grade 4	Assessment of *Nidradhiya*	Score
A	Normal sleep of 6-7 hours per day	0
B	Normal sleep of 8 hours per day	1
C	Normal sleep of 10 hours per day	2
D	Normal sleep of more than 10 hours per day	3

Grade 5	Assessment of *Atikshudha*	Score
A	Feels hunger at next *Annakala* only	0
B	Feels hunger for once in between *Annakala*	1
C	Feels hunger for more than twice	2
D	Feels hunger always	3

Grade6	Assessment of *Atipipasa*	Score
A	Normal thirst	0
B	Up to one litter excess intake of water	1
C	Up to two-three litter excess intake of fluids	2
D	More than three litter excess intake of fluids	3

Grade7	Assessment of *Alpavyayam*	Score
A	Can do routine exercise	0
B	Can do moderate exercise with difficulty	1
C	Can do only mild exercise with difficulty	2
D	Cannot even do mild exercise	3

Grade8	Assessment of *Aharamatra*	Score
A	Two large meals a day	0
B	One small meal and two large meals a day	1
C	Three large meals a day	2
D	More than three meals a day	3

Objective parameters

- Weight
- BMI
- Waist-Hip ratio
- BMI>24.9, BMI = (Weight in Kilograms) / (Height in Meters)^2

Waist Hip ratio= Waist circumference (cm)/ Hip circumference (cm)

BMI Classification

- < 18.5 -underweight
- 18.5–24.9 -normal weight
- 25.0–29.9 -overweight
- 30.0–34.9 -class I obesity
- 35.0–39.9 -class II obesity
- ≥ 40.0 -class III obesity

Females (waist/hip ratio)	Estimated health risk
0.80 or below	Low
0.81 to 0.85	Moderate
0.85+	High
Males (waist/hip ratio)	Estimated health risk
0.95 or below	Low
0.96 to 1	Moderate
1.0+	High

Blood Investigations

- Blood sugar analysis (BSL -F)
- Lipid profile

Drug Interventions

- Group A with *Anupan* (post prandial drink) *Madhu Udak* (10 ml honey + 100 ml water) and Group B with *Anupan Koshna jal* (100 ml luke warm water).
- Drug was same for both groups.
- Yog-*Triphala Churna* + *Vidanga Churna* + *Musta Churna*
- *Sevanakal-Pragbhakt kal* (Before Food)
- *Matra*-5 gm. twice a day
- Duration-90 days
- Diet- Patients regular diet.
- Follow up-7 days.
- **Statistical Analysis**: Paired & unpaired 't'-test & Wilcoxon - matched - pairs Signed - ranks test- were used for statistical analysis.

Observations & Result:

Assessment of Subjective parameter

Statistical Analysis of the results by Wilcoxon - matched - pairs Signed - ranks test

General Symptom Score (Non -parametric test)

➤ **Grade I** (Subjective parameter)

Sum of all signed ranks Gr A = 325

No. of Pairs = 25

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 210

No. of Pairs =20

'p' value is <0.001 (Highly Significant)

➤ **Grade II**

Sum of all signed ranks Gr A   = 210

No. of Pairs   = 20

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 153

No. of Pairs =17

'p' value is <0.001 (Highly Significant)

➤ **Grade III**

Sum of all signed ranks Gr A = 231

(Relief on Sitting Posture)

No. of Pairs = 21

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks = 210

(Relief on Sitting Posture)

No. of Pairs = 20

'p' value is <0.001 (Highly Significant)

➤ **Grade IV**

Sum of all signed ranks Gr A   = 276

No. of Pairs   = 23

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B   = 253

No. of Pairs   = 22

'p' value is <0.001 (Highly Significant)

➤ **Grade V**

Sum of all signed ranks Gr A = 253

No. of Pairs = 22

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 231

No. of Pairs = 21

'p' value is <0.001 (Highly Significant)

➤ **Grade VI**

Sum of all signed ranks Gr A = 300

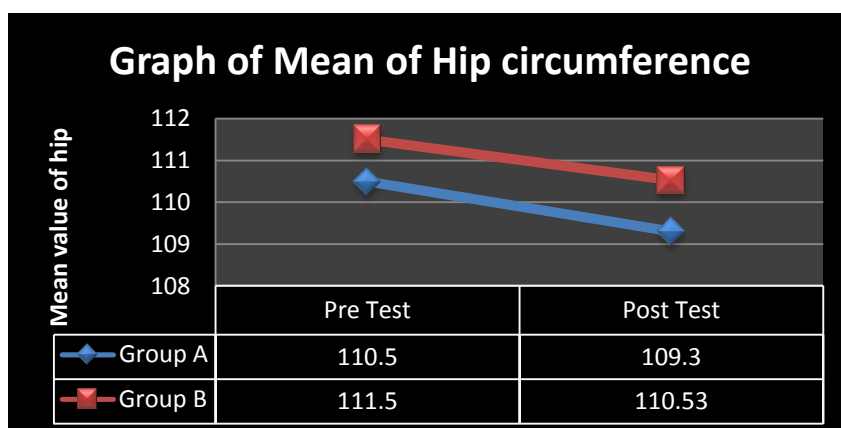No. of Pairs = 24

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 300

No. of Pairs = 24

'p' value is <0.001 (Highly Significant)

➤ **Grade VII**

Sum of all signed ranks Gr A = 171

No. of Pairs = 18

'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 231

No. of Pairs = 21

'p' value is <0.001 (Highly Significant)

➤ **Grade VIII**

Sum of all signed ranks Gr A = 300

No. of Pairs   = 24

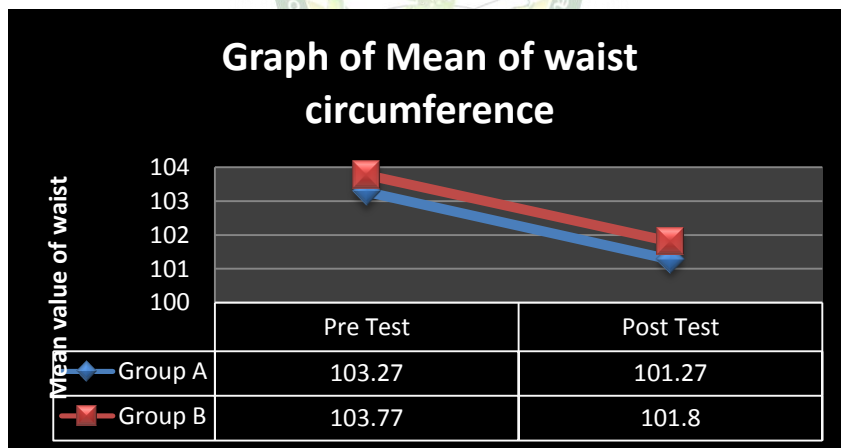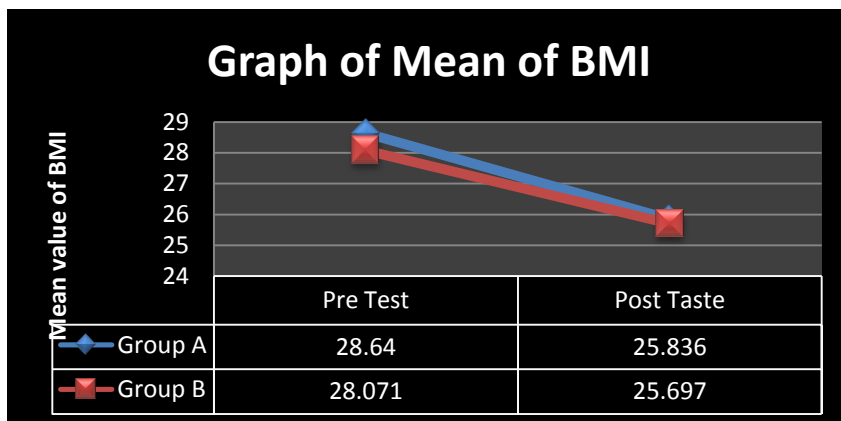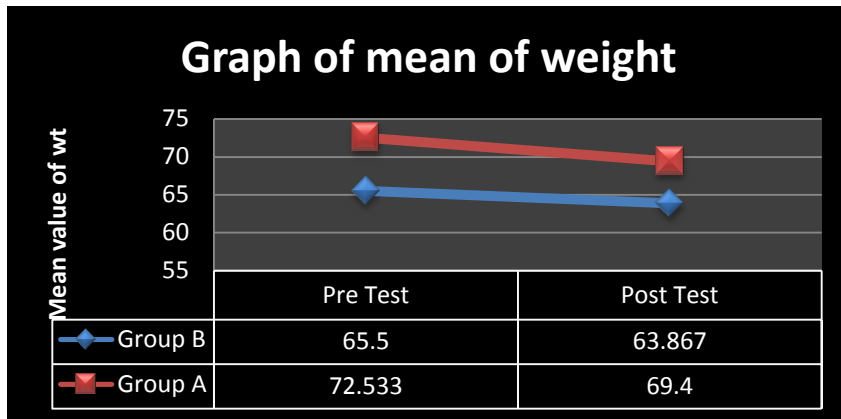'p' value is <0.001 (Highly Significant)

Sum of all signed ranks Gr B = 300

No. of Pairs = 24

'p' value is <0.001 (Highly Significant)

All subjective parameters were found Highly Significant ('p' value is <0.001).

Assessment of Objective parameter

Graph of mean of weight

	Pre Test	Post Test
Group B	65.5	63.867
Group A	72.533	69.4

Graph of Mean of BMI

	Pre Test	Post Taste
Group A	28.64	25.836
Group B	28.071	25.697

Graph of Mean of waist circumference

	Pre Test	Post Test
Group A	103.27	101.27
Group B	103.77	101.8

Graph of Mean of Hip circumference

	Pre Test	Post Test
Group A	110.5	109.3
Group B	111.5	110.53

DISCUSSION

Discussion on Selection of Drugs

By virtue of the *Rasapanchaka*, the drugs selected i.e., *Triphala*, *Vidanga* and *Musta* are very well indicated in *Kapha* predominant pathologies. Due to this property, it breaks the *Samprapti* of *Sthaulya*.

Discussion on Subjective parameters

All the subjects had responded for most of the Subjective parameters.

Discussion on Objective parameters

On weight: Patients of both the groups had decreased weight with an average of 7.06 ± 01.377 in group A with t (paired) value of 27.982, P value is <0.0001, considered extremely significant. 5.533 ± 0.8604 in group B with t (paired) value of 35.226 P value is <0.0001, considered extremely significant.

On comparison in between group A & B t (unpaired) value =5.355, P value is < 0.0001, considered extremely significant. The maximum decrease was 9 kg and 7 kg in group A and B.

On BMI: In group A maximum decrease was 3.78 with average decrease of 2.804 ± 0.5773 with t (paired) value of 26.603. P value is <0.0001, considered extremely significant. In group B maximum decrease was 3.33 with an average of 2.374±+0.6611 with t (paired) value of 19.665. P value is <0.0001, considered extremely significant. On comparison in between group A & B, t (unpaired) value =2.628, P value is <0.0110, considered significant.

On waist circumference: In group A maximum reduction in waist circumference of 4 cm with an average of 2.000 ± 0.6433 with t (paired) value of 17.029. P value is <0.0001, considered extremely significant. In group B maximum reduction in waist circumference of 3 cm with an average of 1.933 ± 0.6915 with t (paired) value of 15.314. P value is <0.0001, considered extremely significant. On comparison in between group A & B, t (unpaired) value = 0.3866, P value is <0.7004, considered not significant.

On Hip Circumference: In group A maximum reduction in Hip circumference of 3 cm with an average of 1.200 ± 0.6103 with t (paired) value of 10.770. P value is <0.0001, considered extremely significant. In group B 2 cm with an average of 0.9667 ± 0.66879 with t (paired) value of 7.918.P value is <0.0001, considered extremely significant.

On comparison in between group A & B, t (unpaired) value =1.412, P value is <0.1634, considered not significant. [7]

SUMMARY

The drug proved beneficial in all the symptoms of *Sthaulya* & values were extremely significant statistically. While considering physical parameters, it was found that there was significant improvement after completion of trial. There was significant effect seen in BMI & Body Weight.

CONCLUSION

Both the groups selected for the study showed significant reduction in the parameters selected. Group A involving use of *Madhu Udak* as *Anupan*, fared better than Group B involving use of *Koshna jala* as *Anupan*, in terms of assessment criteria's selected for *Sthaulya*. Both the *Anupan Madhu Udak* & *Koshna Jala* were effective but *Madhu Udak* was found to be more effective.

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