



# A COMPARATIVE CLINICAL STUDY ON STHOULYA WITH UDVARTHANA AND NAVAKA GUGGULU W.S.R TO OBESITY

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## ABSTRACT

In modern era, the people adopt mechanical type of life style who don't follow the proper regime will suffer from disorder like sthoulya. Shoulya (obesity) is mother all diseases, Sthoulya is described in charaka samhita sutrasthana 21<sup>st</sup> chapter under the heading 'Astaninditeeya'. In Sushruta samhita sutrasthana 15<sup>th</sup> chapter under dosha, dhatu, mala skhaya-vruddhi vijnaneeya adhyaya and in Vagbhata under 'Dwividhopakramaneeya Adhyaya'. As explained in Samhitas i.e "A tree grows well when its roots are free from defects", similarly the body grows properly only if the weight is in normal condition. A major part of global population, a prevalence rate of 10-12% in the adult population of USA has been reported racial and socioeconomic condition also influences the development of obesity. As per the nutrition foundation of India 33% males, 50% females, being obese, added by 40-50 million Indians as overweight, with a prediction foe obesity to emerge ass the biggest public health problem in India and placing the country as the first developing country on the obesity map. The objectives of the study are to evaluate efficacy of udvarthana with Triphala churna in Sthoulya, evaluation of efficacy of Navaka Guggulu in Sthoulya. The study is comparative clinical trial of 30 patients in two groups, 15 patients each group, duration of the treatment 60 days respectively. Patients were assessed for the symptoms subjectively and objectively before, after and at the end of the follow up of the treatment. Data were c collected in the same protocol and statistically analysed.

**Key words:** Sthoulya ; BMI ; obesity ; Navaka Guggulu, Udvartana

## INTRODUCTION

In the present days the man has to run with the time and he is trying to lead mechanical life. Though he knows the ill effects of such mechanical life, he made himself victim to it by suffering with many disorders, among these sthoulya is a global problem and more common in modernized man and in present era. This sthoulya is considered as Santarpanajanyavyadhi and one among the Ashta nindhita purushas and also as Kaphajananatmaja vyadhi.

The obesity is the certainly the mother of dangerous diseases<sup>3</sup> and most burning problem in the present society. Obesity has become an epidemic in 21<sup>st</sup> century,<sup>4</sup> it is a bitter truth to swallow about every 4<sup>th</sup> person on earth is too fat. Obesity is fast becoming one of the world's leading reason why the people die.<sup>5</sup>

According to W.H.O this obesity is considered as secondary in the list of dangerous diseases in the world. And there are so many remedies are put forwarded till now like surgical liposuction, treatments etc. but there are so many complications are observed with those. Due to lack of knowledge about the diet & rules for taking the food this is greatly observed in the developed countries like USA that showing approx one in six or 39.8 million people and over 300 million adults 2 worldwide (WHO world health report, 2003) were suffering from obesity<sup>6</sup>. They are searching for the solutions either by dietary things as well as keeping stress on need of exercise. So by observing these facts & statistics prevalence of overweight and obesity is also more in India. So looking for a better management is needed:

So it is forbidden moral responsible of Ayurvedic scholar to search any effective and curative procedure and drug from the Ayurvedic treasure of therapeutics. In classics so many treatments are said for this sthoulya. The Udvarthana are explained for sthoulya like Udgharshana and Utsadana among these Udgharshana has been taken. So in the present study evaluate the comparative clinical study on Sthoulya and Navaka guggulu in sthoulya is taken.

### Aims and Objectives:

- To evaluate the efficacy of Udvarthana in Sthoulya.
- To evaluate the efficacy of Navaka guggulu in Sthoulya.
- To compare the efficacy of Udvarthana and Navaka guggulu in Sthoulya.

### Review of Literature:

### Methodology:

### Source of data

A). Patients are selected from OPD & IPD of SVPR AMC & Hospital Badami.

**Study design** - A comparative clinical trail

**Sample size** – Minimum of 30 patients, 15 in each group.

Group A- Udvarthana in Sthoulya

Group B- Navaka guggulu in Sthoulya.

**A. Inclusion criteria**

- Patients of either sex between 20- 60 years
- Obesity due to excessive calories
- Obesity due to lack of physical activities.

**B. Exclusion criteria**

- . Obesity due to hormonal imbalance
- Hereditary obesity
- Pregnancy and lactating mothers
- Associated with systemic disorders viz. DM, CVD.
- Endocrine disorders etc.
- **Diet and exercise:** Patients are advised to adhere to the Pathya Ahara and Vihara prepared according to the principals of Ayurveda and caloric value calculations and food items and caloric demand of the individual. Beside this patients are advised to do exercise or yogasana and walking for half and hour daily.
- **Method of Assessment of treatment:** Both subjective and objective assessments were done in all the patients after treatment. Separate grading has been given for subjective assessment parameters that include the following.

**Chala sphik udara stana**

Absence of Chalatra

**Grade**

-- 0

Little visible movement (in the areas) after fast movement

-- 1

Movement (in the areas) after mild movement

-- 2

Movement (in the areas) even after changing posture

-- 3

**Swedaadhikyata****Grade**

Sweating after heavy work and fast movement or in hot season

-- 0

Profuse sweating after moderate work

-- 1

Sweating after little work

-- 2

Profuse sweating after little work

-- 3

**Daurgandhyata****Grade**

- Absence of bad smell -- 0
- Occasional bad smell from the body -- 1
- Persistent bad smell felt from long distance - 2
- Persistent bad smell limited to close area difficulty to suppress with deodorants -- 3

**Kshudra shwasa****Grade**

- Dyspnoea after heavy work but relieved soon and up to tolerance -- 0
- Dyspnoea after little work but relieved later and up to tolerance -- 1
- Dyspnoea after little work but relieved late and beyond tolerance -- 2
- Dyspnoea in resting condition -- 3

**Ati pipasa**

- Normal thirst -- 0
- 1 to 2 ltrs excessive intake of water -- 1
- 2 to 3 ltrs excessive intake of water -- 2
- More than 3 ltrs excessive intake of water - 3

**WEIGHT**

Grade - 0 = no change.

Grade - 1 = 1-5 %

Grade- 2 = 6 -10%

Grade - 3 = 11 to 15% and above

**BMI**

Grade - 0 = no change.

Grade - 1 = 0.01 to 1kg/m<sup>2</sup>

Grade- 2 = 1.01 to 2 kg/m<sup>2</sup>

Grade - 3 = 2.01 and above

### Abdomen circumference

Grade 0= No change

Grade 1= 0.01 to 1.99 cms

Grade 2= 2 to3.99 cms

Grade 3= 4 and above

### Hip circumference

Grade 0= No change

Grade 1= 0.01 to 1.99 cms

Grade 2= 2 to3.99 cms

Grade 3= 4 and above

### OBSERVATIONS & RESULTS:

#### 1. Chala sphik udara stana

Table No. 1– Showing the Effect of treatment on Chala sphik udara stana

Group	Mean score			Median diff.	IQR of diff. Q <sub>3</sub> – Q <sub>1</sub>	Sample size	Wilcoxon signed rank test (T <sup>+</sup> )	P Value
	0th Day	60th Day	diff					
Group A	2.20	1.33	0.87	1.00	0.0 (1.0 - 1.0)	15	91.00	< 0.001
Group B	2.07	1.60	0.47	0.00	1.0 (1.0 - 0.0)	15	28.00	0.005

Table No. 2– Showing the comparative effect of treatment on Chala sphik udara stana

Group	Median difference (bef–aft)	Mean of difference (bef-aft)	S.D. of difference (bef-aft)	Mann-Whitney U statistic	P- Value
Group A	1.00	0.87	0.35		

## 2. Swedaadhikyata

Table No. 3– Showing the Effect of treatment on Swedaadhikyata

Group	Mean score			Median diff.	IQR of diff. Q <sub>3</sub> – Q <sub>1</sub>	Sample size	Wilcoxon signed rank test (T+)	P Value
	0th Day	60th Day	diff					
Group A	2.27	1.20	1.07	1.00	0.0 (1.0 - 1.0)	15	120.00	< 0.001
Group B	2.07	1.13	0.93	1.00	0.0 (1.0 - 1.0)	15	105.00	< 0.001

Table No. 4– Showing the Comparative Effect of treatment on Swedaadhikyata

Group	Median difference (bef–aft)	Mean of difference (bef-aft)	S.D. of difference (bef-aft)	Mann-Whitney U statistic	P- Value
Group A	1.00	1.07	0.26	127.00	0.179
Group B	1.00	0.93	0.26		

## 3. Daurgandhyata

Table No. 5– Showing the Effect of treatment on Daurgandhyata

Group	Mean score			Median diff.	IQR of diff. Q <sub>3</sub> – Q <sub>1</sub>	Sample size	Wilcoxon signed rank test (T+)	P Value
	0th Day	60th Day	diff					
Group A	2.20	1.13	1.07	1.00	0.0 (1.0 - 1.0)	15	120.00	0.000
Group B	2.13	1.40	0.73	1.00	0.5 (1.0 - 0.5)	15	66.00	0.001

**Table No.6 – Showing the Comparative effect of treatment on Daurgandhyata**

Group	Median difference (bef-aft)	Mean of difference (bef-aft)	S.D. of difference (bef-aft)	Mann-Whitney U statistic	P- Value
Group A	1.00	1.07	0.26	148.00	0.025
Group B	1.00	0.73	0.46		

#### 4. Kshudra shwasa

**Table No. 7– Showing the effect of treatment on Kshudra shwasa**

Group	Mean score			Median diff.	IQR of diff. Q <sub>3</sub> – Q <sub>1</sub>	Sample size	Wilcoxon signed rank test (T+)	P Value
	0th Day	60th Day	diff					
Group A	2.13	1.07	1.07	1.00	0.0 (1.0 - 1.0)	15	120.00	< 0.001
Group B	2.13	1.27	0.87	1.00	0.0 (1.0 - 1.0)	15	78.00	< 0.001

**Table No. 8 – Showing the Comparative effect of treatment on Kshudra shwasa**

Group	Median difference (bef-aft)	Mean of difference (bef-aft)	S.D. of difference (bef-aft)	Mann-Whitney U statistic	P- Value
Group A	1.00	1.07	0.26	133.50	0.190
Group B	1.00	0.87	0.52		

## 5. Ati pipasa

Table No. 9– Showing the Effect of treatment on Ati pipasa

Group	Mean score			Median diff.	IQR of diff. Q <sub>3</sub> – Q <sub>1</sub>	Sample size	Wilcoxon signed rank test (T+)	P Value
	0th Day	60th Day	diff					
Group A	2.27	1.20	1.07	1.00	0.0 (1.0 - 1.0)	15	120.00	< 0.001
Group B	2.07	1.13	0.93	1.00	0.0 (1.0 - 1.0)	15	105.00	< 0.001

Table No. 10– Showing the Comparative Effect of treatment on Ati pipasa

Group	Median difference (bef–aft)	Mean of difference (bef-aft)	S.D. of difference (bef-aft)	Mann-Whitney U statistic	P- Value
Group A	1.00	1.07	0.26	127.00	0.179
Group B	1.00	0.93	0.26		

## 6. Weight

Table No. 11– Showing the effect of treatment on Weight

Group	Weight (kg)			Repeated measure ANOVA	
	0th Day	30th Day	60th Day	F-value	P-value
Group A	79.600	77.133	76.733	144.16	< 0.001
Group B	82.933	82.267	82.067	22.63	< 0.001

Table No. 12– Showing the comparative effect of treatment on Weight

Group	Mean diff (D0 - D60)	S.D. diff (D0 - D60)	sample size	Unpaired t statistic	P-value
Group A	2.87	0.83	15	7.37	< 0.001
Group B	0.87	0.64	15		



## 7. BMI

Table No.13 – Showing the effect of treatment on BMI

Group	BMI			Repeated measure ANOVA	
	0 <sup>th</sup> Day	30 <sup>th</sup> Day	60 <sup>th</sup> Day	F-value	P-value
Group A	33.281	32.206	31.995	38.91	< 0.001
Group B	31.690	29.551	31.303	1.23	0.397

Table No. 14– Showing the comparative effect of treatment on BMI

Group	Mean diff (D0 - D60)	S.D. diff (D0 - D60)	sample size	Unpaired t statistic	P-value
Group A	1.29	0.79	15	4.15	0.001
Group B	0.39	0.28	15		

## 8. Abdomen circumference

Table No. 15– Showing the effect of treatment on Abdomen circumference

Group	Abdomen circumference (cm)			Repeated measure ANOVA	
	0 <sup>th</sup> Day	30 <sup>th</sup> Day	60 <sup>th</sup> Day	F-value	P-value
Group A	93.067	90.733	89.933	80.53	< 0.001
Group B	40.600	40.533	40.067	12.67	< 0.001

Table No.16–Showing the comparative effect of treatment on Abdomen circumference

Group	Mean diff (D0 - D60)	S.D. diff (D0 - D60)	sample size	Unpaired t statistic	P-value
Group A	3.13	1.30	15	7.19	< 0.001
Group B	0.53	0.52	15		

## 9. Waist circumference

**Table No. 17– Showing the effect of treatment on Waist circumference**

Group	Waist circumference (cm)			Repeated measure ANOVA	
	0 <sup>th</sup> Day	30 <sup>th</sup> Day	60 <sup>th</sup> Day	F-value	P-value
<b>Group A</b>	84.2	82.733	82.133	37.22	< 0.001
<b>Group B</b>	38.0	37.933	37.400	16.48	< 0.001

**Table No. 18– Showing the comparative effect of treatment on Waist circumference**

Group	Mean diff (D0 - D60)	S.D. diff (D0 - D60)	sample size	Unpaired t statistic	P-value
Group A	2.07	1.22	15	4.29	< 0.001
Group B	0.60	0.51	15		

## DISCUSSION

Sthoulya is one among Santarpanajanyavikara, having unique samprapti, having *Teekshna Jatharagni* and *mandadhatvagni*. Srotorodha caused by kapha and meda will leads to *tiryakgati* of vata which in turn, intensify the Jatharagni. Because of srotorodha there will be medodhatuposhana and anya dhatukshaya. *Vruddhamedodhatu* will cause *daurbalyata* and many other symptoms like kshudrashwasa, kshudha, trushna, atisweda, daurgandhya which will hamper the quality of life. Meanwhile if not treated early in due course of time, it will cause other vyadhies like Prameha, Bhagandara, Vidhradi, Vataroga and lastly end up with mrityu.

**Discussion on Atikshuda:** Udvartana is highly effective on reducing Atikshuda, this may be because of the shodhana of the srotas that lead to the increase of pachakagni, which lead to proper digestion of food leading to samyakjirna of food, and hence patients started taking proper matra of ahara in proper time reducing Atikshudha.

**Discussion on Ati trushna:** Both the groups shown effective result on reducing Atitrushna, this may be due to the fact kshara is known to pacify Kapha and Vata dosas along with that due to decrease in meda (kapha) there was reduction in trushna.

**Discussion on Atisweda:** Both the groups shown effective result on Atisweda, this may be attributed to the kaphahara properties of the Udvartana. Udvartana directly acted on the vikrutakapha due to the chedana properties of Eranda and removing them, from the subcutaneous areas, Sweda is the mala of meda, when the meda was removed the Atisweda also pacified.

**Discussion on Ksudraswasa:** Treatment of Group A can be considered as more effective in reducing Kshudra shwasa as compared to treatment of group B. Kshudraswasa occurs when the pranavahasrotas is obstructed by the excessive vikrutakapha, so vikruta vikara of kapha in the body is meda, hence when the Udvartana was given, it directly acted upon the vikrutakapha and pacified it leading to pranavahasrota shodhana leading to decrease in kshudraswasa.

Both the groups have shown significant results over the Subjective Parameters where as when compared between the groups then, Group A with Udvartana shown significantly better results in Ati Trushna and Kshudra Shwasa

Both the groups have shown significant results over the Objective Parameters where as when compared between the groups then, Group A with Udvartana shown significantly better results in all the parameters except Serum Cholesterol.

#### **Probable action on Dosha:**

Sthoulya is a Kapha–VatajaVyadhi. The Udvartana mainly acts on Kapha–Vata by virtue of its UshnaVirya.

#### **Probable action on Dushya:**

There is Meda and MamsaVridhhi in Sthoulya rogi, along with production of Ama Rasa. The Udvartana breaks the Srotosanga. So the active principle can reach to the cellular level and due to the properties like Usna,Teekshna, Lekhana removes the accumulated Meda.

#### **CONCLUSION:**

Conclusions are the essence of whole study. Following conclusions were drawn after systematic clinical trial on 30 Patients.

- Sthoulya is a very prevalent disease in today's world which is causing physical, mental and social impact on the suffering individual.
- Sthoulya is a santarpanajanya vikara having unique samprapti.
- Sthoulya is common in middle age, females, married women and educated people.
- The incidence of Sthoulya is more amongst the people who are used Madhura and Snigdhaahara.

- Guru and apatarpana is the line of treatment to conquer teekshnagni and medovruddi respectively.
- Treatment modality like Udvartana shows better efficacy in reliving most of subjective features. Karshana and lekshana property of this Udvartana probably responsible for the karshana of meda dhatu, leading to srotoshodhana thus reliving the avarana.
- Over all the percentage of mean reduction in Group A and Group B of Subjective parameters is 46.67% and 35.56% respectively.
- Group A with Udvartana has better results on Subjective Parameters of Sthoulya than Group B with Navaka Guggulu.
- Over all the percentage of mean reduction in Group A and Group B of Objective parameters is 11.68% and 5.6% respectively.
- Group A with Udvartana has better results on Objective Parameters of Sthoulya than Group B with Navaka Guggulu.

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