

Clinical evaluation of Guduchyadi Yoga and its combination with Udvartana by Haritaki in the management of Sthaulya with special reference to obesity

M. A. Pandit^{1*}, S. N. Ojha²,

¹Pad. Dr. D. Y. Patil College of Ayurved and Research Centre, Pimpri, Pune-18, ²College of Ayurved, Kadoli, Kolhapur.

Received on 5th July 2013

Accepted on 8th Aug 2013

Available online from 24th Aug 2013

Abstract

Obesity is a vexatious problem as it opens the door to so many other diseases. Present research work was aimed towards the best management of obesity. Randomized single blind trial was carried out in 60 obese patients of age group 18 to 60 years. Patients were divided into two groups; 30 patients (Group A) were given Guduchyadi yoga and 30 patients (Group B) were posted for Udvartana with dry powder of Haritaki along with the same Guduchyadi yoga used in Group A. It was found that in Group A, weight reduced from 83.12 ± 10.6 to 80.43 ± 10.53 kg. Whereas in Group B, weight reduced from 82.17 ± 10.63 to 77.67 ± 10.24 kg. Similarly in Group A, circumference of abdomen was reduced from 107.4 ± 10 to 105 ± 10.07 cm. Whereas in Group B, it reduced from 103.8 ± 9.192 to 99.23 ± 9 cm. Both Groups have shown significant results at $P < 0.001$. Results of Group B were better than those in group A. Thus it can be concluded that in the management of obesity, Guduchyadi yoga along with Udvartana was better as compared to the use of Guduchyadi yoga alone.

Keywords: Obesity, Udvartana, Sthaulya, Guduchyadi

INTRODUCTION

Obesity is defined as a state of excess adipose tissue mass and person with Body Mass Index (BMI) $>30 \text{ kg/m}^2$ is considered as obese[1]. It is the cumbersome fettle of today's world as in every region of the world, obesity has doubled between 1980 and 2008, and today, half a billion people (12% of the world's population) are considered as obese[2]. According to the National Family Health Survey (NFHS), the percentage of ever-married women aged 15-49 years who are overweight or obese increased from 11% in NFHS- 2 to 15% in NFHS-3[3]. This is indeed a careworn situation because Obesity is such a disease, which provides the platform for so many hazards like Hypertension, Coronary Heart Diseases, Diabetes Mellitus, Infertility, Impotency as well as psychological disorders like, stress, anxiety. Thus mortality and morbidity are more in obese persons. Hence in order to have best management of Obesity present research was carried out. Modern health science system have newly evolved techniques, which are effective but equally expensive and carrying some serious side effects. Here Ayurveda plays vital role as the

process of 'Udvartana' described in Ayurveda is safe and effective to reduce body fat. 'Udvartana' is the procedure of massaging the powders of herbs in direction opposite to the orientation of hair on the body. This process is explained in ancient text of Ayurveda like *Astanga Hruday* by Vagbhatacharya, *Charaka Samhita* by Charakacharya[4][5]. As per Acharya Vagbhata Udvartana normalizes vitiated *Kapha* and liquefies the *Medas* (Fat). It provides firmness to body, smoothness to skin and increases the complexion of the skin.

MATERIALS AND METHODS

Patients were diagnosed on the basis of signs and symptoms of Sthaulya mentioned in Ayurvedic text. Single blind trial was done. Sampling of patients of inclusion criteria was selected by method of simple random sampling. 60 patients of sthauya were selected randomly irrespective of their sex, age, religion and were divided in two groups. Group A: Powder of Guduchi-Musta and Triphala was given to 30 patients. Group B: Powder of Guduchi-Musta-Triphala along with udvartana by Haritaki churna was given 30 patients. Proforma of case paper was prepared. Informed written valid consent was taken. Diet was advised to both the

*Corresponding author E - mail: mohitpandit19@gmail.com

groups. Treatment:- Churna of Guduchi + Musta + Triphala, Udvartana by Haritaki churna. Dose: 5 gm, Time: Before meal two times a day, Anupana: Honey, Route: Oral, Duration: 60 days, Follow up: after every 15 days. Drugs: Combination of dry powder of following herbs: Guduchi (*Tinospora Cordifolia*), Haritaki (*Terminalia chebula*), Bibhitaka (*Terminalia bellirica*), Amalaki (*Embilica officinalis*) and Musta (*Cyperus rotandus*).

Procedure of udvartana: [6]

100gm of powder of Haritaki was used per day per patient for the process of udvartana. Powder of Haritaki was rubbed over body in pratiloma direction. Udvartan procedure was done in following positions: Supine, Left lateral, Right lateral and Dorsal. After procedure patient was advised to relax and to take bath with warm water. 30 patients of Group B were posted for Udvartana. Firstly the procedure was explained to patients and his/her relatives. At first visit patient was taken for udvartana in front of his or her relative who would always accompany him or her. It is for training of that relative in case of any absentee due to extreme reason. Time and duration: Patients were asked to come at morning session for the procedure. Duration of procedure is 30 min for 2 months. In case if patient was unable to come for procedure a packet of udvartan churna was given to the patient a day before.

Inclusion criteria

1. Patient with age group 18 to 60 years.
2. Patient with Body Mass Index (B.M.I.) 30 kg/m² to 40 kg/m².
3. Patient with symptoms of Sthaulya mentioned in ayurveda text.

Exclusion criteria

1. Patient with Body Mass Index (B.M.I.) more than 40 kg/m²
2. Obesity due to certain secondary causes like hypothyroidism, drug induced obesity etc.
3. Patients having cardiovascular complications.
4. Pregnant woman.

Criteria for assessment

Subjective criteria:

A. Atikshudha (Excessive Hunger)

- 0- Feels hunger at next annakala : -
- 1- Feels hunger for once in between annakala : +
- 2- Feels hunger twice between annakala : ++
- 3- Feels hunger more than twice between annakala: +++

B. Kshudrashwasa/ ayasenshwasa (Breathlessness)

- 0- Absent : -
- 1- On accustomed work: +
- 2- Less than accustomed work: ++
- 3- At rest: +++

C. Daurgandhya (Body Odor)

- 0- Absent: -
- 1- Occasional bad smell in body perceived only by patient himself or herself: +
- 2- Occasional bad smell in body perceived by both patient and person near to him or her: ++
- 3- Persistent bad smell in body: +++

D. Swedadhikya (Excessive sweating)

- 0- Absent : -
- 1- Profuse sweating while walking: +
- 2- Profuse sweating while doing routine work: ++
- 3- Sweating even in resting condition: +++

E. Atipipasa (Excessive thirst)

- 0- 2.5 lit. to 3.0 lit. water per day.: -
- 1- More than 3.0 lit. to 4.0 lit. water per day: +
- 2- More than 4.0 lit. to 5.0 lit. water per day: ++
- 3- More than 5.0 lit. water per day.: +++

F. Alasya / utsah hani (Lethargy)

- 0- Absent: -
- 1- Doing work satisfactory but initiation late in time: +
- 2- Doing work unsatisfactory with initiation late in time with lot of mental stress: ++
- 3- Does not have initiation and not want to work even after motivation: +++

G. Nidradhikya (Excessive sleep)

- 0- 6-8 hours /day: -
 1- 8-9 hours /day: +
 2- More than 9 hours to 10 hours/day: ++
 3- More than 10 hours/day: +++

H. Anga gaurav (Heaviness in body)

- 0- Absent:-
 1- Feels heaviness but can perform accustomed work:
 +
 2- Feels heaviness which hampers accustomed work
 slightly: ++
 3- Feels heaviness which restrict routine work
 completely: +++

Objective criteria

1. Body Mass Index(B.M.I.)
2. Waist/Hip ratio
3. Skin fold thickness
4. The girth measurement of certain region using measuring tape
 - Chest: In normal expansion at the level of nipple.
 - Abdomen : At the level of umbilicus
 - Mid arm : – Mid of the arm at triceps
5. Sr. Lipid profile.

Table 1: Effect of treatment of Guduchyadi yoga (Group A) and Guduchyadi yoga along with Udvartan (Group B) on various assessment criteria (symptoms).

Symptoms	Group	Before Treatment		After Treatment		Wilcoxon Signed Ranks Test		
		Mean score	Sd	Mean score	Sd	% of relief	Z	P
Atikshudha	Group-A	1.3	1.02	0.3	0.535	76.92	4.038	<0.001 HS
	Group-B	1.63	1.18	0.43	0.626	73.62	4.035	<0.001 HS
Ayasena	Group-A	1.1	1.029	0.33	0.547	70	3.758	<0.001 HS
	Group-B	0.83	0.966	0.3	0.535	63.86	3.314	0.001 Sig
Atipipasa	Group-A	1.1	1.029	0.3	0.466	72.73	3.619	<0.001 HS
	Group-B	1.33	1.295	0.3	0.466	77.44	3.804	<0.001 HS
Alasya	Group-A	1.27	1.048	0.17	0.379	86.61	4.028	<0.001 HS
	Group-B	1.1	1.029	0.17	0.379	84.55	3.934	<0.001 HS
Anga Gaurav	Group-A	1.63	0.999	0.27	0.521	83.44	4.291	<0.001 HS
	Group-B	1.8	1.095	0.33	0.479	81.67	4.398	<0.001 HS
Daugandhya	Group-A	0.37	0.718	0.23	0.568	37.84	1.633	0.102 NS
	Group-B	0.63	1.033	0.03	0.183	95.24	2.719	0.007 Sig
Swedadhikya	Group-A	1.1	1.125	0.9	1.028	18.18	2.121	0.034 Sig
	Group-B	1.1	1.093	0.1	0.305	90.91	3.796	<0.001 HS
Nidradhikya	Group-A	1.5	1.225	0.57	0.568	62	3.839	<0.001 HS
	Group-B	2	1.017	0.5	0.572	75	4.556	<0.001 HS

RESULTS AND DISCUSSION

It was found that Guduchyadi yoga has shown highly significant results on symptoms like Atikshudha, Ayasena Shwasa, Atipipasa, Alasya, and Anga gaurava [Table: 1]. Statistically there was no difference found between group A and group B for these symptoms. However Guduchyadi yoga didn't show result on daugandhya in

group A. But in group B where Udvartana was the additional treatment along with guduchyadi yoga, effect on daugandhya was significant [Table: 1] and difference found between two groups was also statistically significant proving group B was better than group A. Similarly, effect on Sewdadhikya [Table: 1] was also statistically highly significant in group B whereas it was

merely significant in group A and which again shows that group B was better than group A. The effect on nidradhikya [Table: 1] was highly significant in both groups, but statistically group B was found better than group A. Thus as per as Swedadhikya, Daurganhya and Nidradhikya are concerned Group B has shown better results than Group A. This is because addition of Udvartana in group B. Thus Udvartan acts effectively on Swedadhikya, Daurgandhya and Nidradhikya.

Objective criteria such as Weight, Body Mass Index, Waist/Hip ratio, Circumference of Chest, Abdomen and Mid-arm; Skinfold Thickness [Table: 2] all have highly significant reduction after treatment in both groups. This

is because of Kapha Meda Nashan caused by Guduchyadi yoga. But statistically Group B was found better than Group A. This is because Udvartana apparently reduces subcutaneous fat depots and thus helps in reduction of skinfold thickness and circumference of abdomen, chest and mid-arm. Reduction in subcutaneous fat and also having kapha hara (pacifies Kapha) and Meda-nashak (reduces fat) properties udavrtana has shown good results in weight and BMI reduction and thus Guduchyadi yoga when accompanied with udvartana showed better results in management of Sthaulya.

Table 2: Effect of treatment of Guduchyadi yoga (Group A) and Guduchyadi yoga along with Udvartan (Group B) on various objective criteria.

Objective Criteria	Group	Before Treatment		After Treatment		Paired t-test		
		Mean	Sd	Mean	Sd	% of relief	t	P
Weight in Kg	Group-A	83.12	10.6	80.43	10.53	3.24	16.42	<0.001 HS
	Group-B	82.17	10.63	77.67	10.24	5.48	22.28	<0.001 HS
BMI	Group-A	31.64	1.436	30.62	1.454	3.25	16.05	<0.001 HS
	Group-B	32.17	2.195	30.39	2.244	5.54	23.76	<0.001 HS
Waist / Hip Ratio	Group-A	0.93	0.078	0.923	0.072	0.75	2.942	0.006 Sig
	Group-B	0.95	0.034	0.933	0.032	1.79	8.26	<0.001 HS
Skinfold thickness at Mid-arm (mm)	Group-A	27.36	9.327	25.86	9.186	5.48	4.397	<0.001 HS
	Group-B	23.22	8.38	18.71	8.218	19.42	12.09	<0.001 HS
Chest Circumference (cm)	Group-A	89.72	22.46	88.2	22.17	1.69	8.068	<0.001 HS
	Group-B	100.1	11.43	97.28	11.55	2.8	7.661	<0.001 HS
Abdomen circumference (cm)	Group-A	107.4	10.0	105	10.07	2.23	13.3	<0.001 HS
	Group-B	103.8	9.192	99.23	9.0	4.43	18.09	<0.001 HS
Mid-arm circumference (cm)	Group-A	36.08	8.095	35.33	7.522	2.09	2.283	0.030 Sig
	Group-B	35.23	3.913	32.13	3.968	8.81	11.45	<0.001 HS

Effect on Lipid profile [Table: 3] especially on Sr. Cholesterol and Sr. Tryglycerides were highly significant in both groups. Guduchyadi yoga acts on Medodhagni and thus helps in regulation of metabolism of fat. However Sr. L.D.L. was found non-significant in group A and Sr. V.L.D.L. and Sr. H.D.L. were found non-significant in group B. But statistically group B was better than

group A as per as Sr. Cholesterol and Sr. Tryglycerides are concerned. This may be due to additional effect on udvartana. Udvartan acts at molecular level and by increasing ushma below the skin it absorbs the kleda and removes the obstruction of strotas and thus useful to correct medodhatvagni mandya which in turn helps in regulation of fat metabolism.

Table 3: Effect of treatment of Guduchyadi yoga (Group A) and Guduchyadi yoga along with Udvartan (Group B) on the lipid profile.

Lipid Profile	Group	Before Treatment		After Treatment		Paired t-test		
		Mean	Sd	Mean	Sd	% of relief	t	P
Sr. Cholesterol	Group-A	165.4	20.89	163.1	19.33	1.42	5.112	<0.001 HS
	Group-B	175.4	31.29	168	23.38	4.25	4.11	<0.001 HS
Sr Triglycerides	Group-A	128.5	27.82	126.5	27.38	1.54	5.187	<0.001 HS
	Group-B	129.9	56.1	121.1	44.87	6.8	3.181	0.004 Sig
Sr. L.D.L.	Group-A	102.6	13.57	102	12.27	0.54	1.23	0.229 NS
	Group-B	104.7	25.01	101.4	21.27	3.16	2.218	0.035 Sig
Sr. V.L.D.L.	Group-A	29.94	6.339	29.05	5.296	2.98	2.565	0.016 Sig
	Group-B	26.63	10.71	25.72	9.383	3.41	1.891	0.069 NS
Sr. H.D.L.	Group-A	42.41	5.872	43.31	5.607	-2.14	3.385	0.002 Sig
	Group-B	42.92	7.706	43.4	6.565	-1.12	1.43	0.164 NS

Effect of Udvartana

In process of udvartana friction of drug to the skin occurs. This leads to increase in local temperature due to dilatation of vessels. Thus it opens circulatory channels, facilitates the metabolic activity. Rubbing helps in the absorption of effusion, relief of blood stasis and carrying away the morbid products in the system. Deep pressure massage helps the interchange of tissue fluids by increasing the circulation in the superficial vein and lymphatics. The pressure helps the contents of vessels move towards the heart, if applied strongly and quickly, it has stimulating effect. It increases nutrition in all tissues. As it causes cutaneous vasodilation, it increases elimination of waste products. It improves the condition of the nervous system by stimulating the cutaneous nerve endings. It influences the general metabolism when applied on large areas. It also helps in the reabsorption of inflammatory products and absorption of fat in fatty tissue. Thus Udvartana helps in reduction of subcutaneous fat depots. It reduces the abdomen circumference, waist by reducing the skinfold thickness. As 50% of total body fat is deposited subcutaneously its reduction reduces overall weight of the body.

CONCLUSION

After analyzing all observations and results, it can be concluded that administration of Guduchyadi yaga is effective in Sthaulya or obesity. Udvartana is also an effective treatment in management of Sthaulya. The

effect of Guduchyadi yoga along with Udvartan was better as compared to the use of Guduchyadi yoga alone.

ACKNOWLEDGEMENTS

The authors would like to thank Prof. Dr. S. N. Ojha, and Prof. Dr. Sadhana Babel, Head, Dept. of Kayachikitsa for their guidance and the patients for their co-operation throughout the study.

REFERENCES

1. Braunwald And etal; Harrisons Principles of internal medicines; 17th edition; Mc Graw Hill publication.
2. http://www.who.int/mediacentre/news/releases/2012/world_health_statistics_20120516/en/index.html
3. http://en.wikipedia.org/wiki/Obesity_in_India
4. Chakrapanidatta; Jadavaji Trikamaji Acharya; 2005; Charak samhita; Surbharati prakashan, Varanasi.
5. Hemadri and arundatta; Anna moreswar Kunte Krishna Ramchandra Shastri Navre; 2007; Astang Hridaya; Surbharati prakashan, Varanasi.
6. Kasture; 2006; Panchakarma Vidnyana; Chaukhamba prakashana, Varanasi.