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Original Research Paper

Ayurveda

"ADJUVANT EFFECT OF LIFE STYLE MODIFICATION WITH UDVARTANA IN OBESITY- A RANDOMIZED CLINICAL TRIAL"

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ABSTRACT

Background: Udvartana is the external procedure involves massaging the whole body below the neck with medicated powder in the direction opposite to the hair follicles. In clinical practice mainly we are using this procedure to treat obesity. Further to see the combined effect diet and yoga was advised.

Objectives: To assess the adjuvant effect of life style modification with Udvartana in obesity.

Materials and methods: The subjects of obesity were selected from outpatient department as well as who were admitted in KAHER's ShriB.M.Kankanwadi Ayurveda Hospital Belgavi and divided in two Groups as Group A where to patients Udvartana was advised and in Group B Udvartana fallowed with changes in life style modification.

Results: After the udvartana significant reduction was seen in anthropometry measurements in both groups, further reduction was seen in Group B. Without life style modification patients in Group A regained weight.

Conclusion: Udvartana followed by life style modification is very effective for weight reduction.

KEYWORDS : Udavartana, Lifestyle modification, Diet, Yoga

1.INTRODUCTION:

On the basis of a survey results WHO (2017) predicted an approximate increase of 2.5 billion adults with overweight and above 76700 million obese [1]. India ranks among rank 10 in obese people[2]. Following udwartana method there was a significant mean weight reduction of 2.9kg in 7 days which was significant [3] (Venkatappa, Patil 2014). In this institute on an average 980 cases per year are advisedudvartana[4]. Low fat diets are reducing weight by an average of 5.4 kg in 12 months [5]. Increased physical activity and exercise 330 min per week is also associated with significant weight reduction[6]. Aim of this clinical study on obesity was to evaluate the adjuvant effect of life style modification with udwartana. Several other methods including control on diet, yoga, exercise and modification of life style are in regular practice.

2.MATERIALS AND METHODS:

Subjects were divided in two groups (A and B).20 subjects in each . All patients were advised to undergo Udvartana.

It does the rukshana karma. Kulattachurna (200-300) was used in one day. The total duration of the procedure was 30-40 minutes. Patient in Group B were further advised life style modification in that diet chart was given to the patient along with Yoga advice.Patients were report to us on Day 7,30 and 67.

Lipid profile was investigated before and after udvartana. Sara in both the groups was studied in detail. Signs and symptoms of obesity were recorded as per Ayurveda guidelines those are Dourbalya, Dourgandya, Sweda abhadha,Kshudhatimatraandpipasaatiyoga.Anthropometri c measurements and skin fold thickness were seen at the time of enrollment and on days 7,30,67. Total fat content of Kulattachurna was measured before and after by employing soxalate apparatus.

3.RESULTS :

Considering the life style 35% were house hold workers. 70% is the moderate workers and 1.5% were heavy workers, 45% were with sedentary life style.Out of 40 patients 26 were overweight, 6 belong to class 1 obesity and 8 patient belong to class 2 obesity.

Table 1: The results of sara assessment is given below:

Sara Types	Grp A	Grp B	Total	%
Twaksara	2	1	3	43%
Mamsasara	3	5	8	20%
Medasara	8	15	23	22%
Asti sara	3	3	6	15%

CGI scale was applied for signs and symptoms of obesity. In group B significant changes were observed:

Table 2: Results in subjective parameters observed in patients.

Subjective Parameters	Group	Stddeviation± Std.Error	P Value	Summary
CGI scale	Group A BT	1.468±0.3283	0.9263	NS
	Group A F2	1.531±0.3424		
	Group B BT	0.9119±0.2039	0.0005	S
	Group B F2	0.8127±0.1817		
Dourbalyata	Group A BT	1.027±0.3096	0.4364	NS
	Group A F2	1.027±0.3096		
	Group B BT	0.4472±0.1348	0.0001	S
	Group B F2	0.4671±0.1408		
Dourgandya	Group A BT	1.059±0.3350	0.0482	*
	Group A F2	2.100±0.3786		

	Group B BT	0.9910±0.3504	0.0038	**
	Group B F2	0.3536±0.1250		
Swedaabada	Group A BT	0.9342±0.2817	0.0205	*
	Group A F2	2.182±0.2960	0.0205	***
	Group B BT	0.6742±0.2033	0.0001	*
	Group B F2	0.5455±0.2073	0.0001	***
Kshudatimatra	Group A BT	2.818±0.1220	1.0000	NS
	Group A F2	2.818±0.1220	1.0000	NS
	Group B BT	2.500±0.2950	0.0729	NS
	Group B F2	1.875±0.2950	0.0729	NS
Pipasaatiyoga	Group A BT	2.200±0.4899	1.0000	NS
	Group A F2	2.200±0.4899	1.0000	NS
	Group B BT	1.667±0.6667	0.7371	NS
	Group B F2	1.000±0.0	0.7371	NS

BT – Before treatment
AT – After treatment
F1 - Follow-up 1
F2 – Follow-up 2

Tukeys multiple comparison test was applied for determining weight reduction in both groups. It was found significant weight reduction in case of group B (30th and 67th Day).

Weight reduction was present in both the groups on 7th day which was further significantly reduced in group B. (weight in %).MTC, Abdominal circumference, Difference in total fat, Skin fold thickness reduction in B group members was statistically highly significant.

Total fat content and weight of Udvartanachuena was measured before and after the procedure shows increase in weight and total fat content.Before the procedure total fat content was 0.405 gms/10 gms and after the procedure 2.785/10 gms. This provesthatkulattachurna is absorbing the fat.

Total fat of the body and viscera were studied by using the instrument body composition analyzer before and after the procedure.

Table 3: Results Of Anthropometric Study

Anthropometric Measurements	Tukey's Multiple Comparison Test	Mean Difference	Significant? P < 0.05?
BMI	BT-AT GRP A vs BT-AT GRP B	-0.1180	No
	BT-F1 GRP A vs BT-F1GRP B	-0.8490	Yes
	BT-F2 GRP A vs BT-F2 GRP B	-1.528	Yes
Weight	BT-AT (Grp A) vs BT-AT (Grp B)	0.3955	No
	BT-F1(Grp A) vs BT-F1 (Grp B	-2.166	Yes
	BT-F2(Grp A) vs BT-F2 (Grp B)	-3.771	Yes
MAC Rt	BT-AT Grp A vs BT-AT GRP B	-0.1230	No
	BT-F1 GRP A vs BT-F1 GRP B	-1.218	Yes
	BT-F2 Grp A vs BT-F2 GRP B	-2.134	Yes
MTC Rt	GRP A BT-AT vs GRP B BT-AT	-0.3750	No
	GRP A BT-F1 vs GRP B BT-F1	-1.625	Yes
	GRP A BT-F2 vs GRP B BT-F2	-2.100	Yes
Abdominal Circumference	GRP A BT-AT vs GRP B BT-AT	-0.2000	No
	GRP A BT- F1 vs GRP B BT-FU1	-2.025	Yes
	GRP A BT- F2 vs GRP B BT-FU2	-3.750	Yes
Total Fat	GRP A BT-AT vs GRP B AT-BT	0.1150	No
	GRP A BT- F1 vs GRP B BT-FU1	-0.7850	Yes
	GRP A BT-F2 vs GRP B BT-FU2	-0.7850	Yes
Skin Fold Thickness of Biceps	BT-AT GRp A vs BT-AT GRP B	0.05000	No
	BT-F1 GRP A vs BT-F1 GRP B	-0.7250	Yes
	BT-F2 GRP A vs BT-F2 GRP B	-1.175	Yes
Skin Fold Thickness of Triceps	BT-AT GRP A vs BT-AT GRP B	-0.4365	No
	BT-FU1 GRP A vs BT-FU1 GRP B	-0.7365	Yes
	BT-FU2 GRP A vs BT-FU1 GRP B	-0.7500	Yes
Skin Fold Thickness of Sub Scapular	BT-AT GRP A vs BT-AT GRP B	-0.2000	No
	BT-FU1 GRP A vs BT-FU1 GRP B	-0.6500	Yes
	BT-FU2 GRP A vs BT-FU2 GRP B	-0.9000	Yes
Skin Fold Thickness of Iliac Spine	BT-AT GRP A vs BT-AT GRP B	-0.3000	No
	BT-FU1 GRP A vs BT-FU1 GRP B	-1.450	Yes
	BT-FU2 GRP A vs BT-FU2 GRP B	-2.350	Yes

4.DISCUSSION:

Udvartana is helpful to reduce the fat content of the body[7]. Mode of action is described as which acts on the lymphatic system. Skin is divided into innumerable lymph chamber (diameter of 8-12 mm each). Mode of action of udvartana is described as which acts on the lymphatic system[8]. Which includes the rubbing action which increases the local circulation and eliminates the fluid rapidly. In another way udvartana produces the mechanical and reflex action on peripheral blood vessel or the skin which increases the venous return and further the ejection volume[9].

Kulatta is having ushnaveerya and when enters the body through teeryakdhamanies by the bhrajakagnisamskara and acts on the aggravated kapha and vata[10]. It contains phenol which is having the ability to attack on the fatty tissues[11].

Advised yoga procedure included Ardakatichakrasana, Padahastasana, parshvatrikona asana and these asanas acts on the metabolic rate[12]. In Surya namaskara the pose Ashtanga namaskara acts on the Manipuri Chakra which contains solar flexuses [13]. In pranayama Kaphalabhati and Surya bhedhana were advised to the patients. Surya bhedana pranayama acts on the solar flexuses, these are coined by the term Abdominal brain because it is located in the epigastric region behind the pit of the stomach on either side of spinal column which control main internal organs of man [14].

Looking into the diet , Low fat, high carbohydrate content and slow digestible starch is the ideal obesity. The advised Diet contains Takrawhichpossesdeepana, grahi&laghugunas,

tridoshashamaka. It acts on the Kapha due to kashaya rasa, ushna, ruksha, vikasigunas, Vata due to madhura, amla rasa and Sandra guna. Laja mitigates the kapha. It produces sadyotarpanaeffect in the body. Triphala contains anthraquinones that helps in stimulating peristalsis, rich in one of the powerful antioxidants Polyphenols that reduces the oxidative stress which is more common in the obese patients[15].

Millets was also included in the diet advised to patients which have a low glycemic index compared to most other cereals. They increase satiety by decreasing hunger because they slow the rate of digestion. In the diet tikta and Kashay arasayuktashakas(vegetables with bitter taste)was advised, Tikta being Laghu and Rukshagunayukta reduces the vitiation of Kapha andMedodushti.,Kashaya rasa yuktadravyas due to the association with Ushna and RukshaGuna facilitate the Shoshana (absorption) of Kapha and Medodhatu. Karela is high in water content is 90% suppresses the appetite [16]. It has 2.6 gms of dietary fiber which requires longer time to break down.

Vegetables with bitter taste may modulate fat metabolizing kinases such as AMPKs and nuclear factors like PPARs, LXRs and PGC-1 1 [17]. Turmeric present in diet contains curcumin which helps to keep the fatty tissue at a minimum. Finger millet (Ragi) has low fat content, it is high in PUFA (polyunsaturated fatty acids) with highfibre content which slows down the digestion process.

Jowar(Sorghum)- sorghum is rich in policosanols which helps in reducing the levels of cholesterol [18], foxtail millet is rich in carbohydrates, the kind which doesn't increase the blood sugar levels immediately. It is rich in dietary fibre, and minerals like iron and copper[19]. Due to this, it helps to reduce the levels of bad cholesterol. Kodo millet closely resembles rice. It is easy to digest so instead of rice kodo millet was advised to the patients.Thus the diet which was prescribed to group B patients reduced their MAC as well MTC significantly.

5.CONCLUSION:

In conclusion the study on Udvartana fallowed by life style modification, Udvartana should fallow with life style modification which is the most effective way to achieve the weight loss and sustain the normal weight.

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