

Bruhatpanchamooladi Yogavasti in Medoroga

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Abstract:

Obesity vis-à-vis *Sthoulya* is a metabolic disease with accumulation of fat in body dependent parts and circulation as serum cholesterol (*Sarakta Medas*). Obesity is a leading reason for people death becomes an epidemic in 21st century, where in 75% Indian women in the cities are apple shaped, while 58% of men are as so. Present study evaluate the effect of *Bruhat Panchamuladi Yoga* (Oral and *Yogavasti*) in obesity with reference to weight, BMI and Serum cholesterol. Study is undertaken in 2 groups with study design as Simple random sampling technique clinical trial. Internally 1500mg/ 24hrs in distributed doses of TDS or 25mg/kg body weight /24hrs of *Bruhat Panchamuladi ghanavati* and *Bruhat Panchamuladi yoga Yoga vasti* as per classical text for 8 days. The mean reduction is shown in Ayurveda subjective parameters and the W.H. Ratio has shown significance than any other with 8.04 % of mean reduction against Weight reduction is of only 4.76% and B.M.I. with 4.68% of mean is not significant.

Keywords: Obesity, Medoroga, *Bruhat Panchamuladi Yoga vasti*

Introduction:

Obesity vis-à-vis *Sthoulya* is a chronic disease increasing in prevalence and poses a serious risk for the development of many metabolic diseases such as diabetes mellitus, hypertension, heart diseases etc. The common cause of all of them is accumulation of fat in circulation and in body dependent parts. The fat in circulation is serum cholesterol (*Sarakta Medas*) which could give atherosclerosis in the blood vessels, to prevent these diseases it is very much required to attend the problem of obesity (*Durmedas*).

The word obesity is a noun form originated from Greek root word “Obesus” meaning “having eaten until fat”, Latin “Edo” meaning “eat”, obese is used as an adjective meaning “grossly fat” or “very fat” [1]. “Obesity is defined as an excess of adipose

tissue that imparts health risk; a body weight of 20% excess over ideal weight for age, sex and height is considered a health risk [2].

Obesity can be understood in the following way:

1. Excess of adipose tissue deposition that imparts as obesity.
2. A body weight 20% or more than desirable/normal weight according to age, sex and height is regarded as obese.
3. Recently defined obesity on the basis of BMI is as >25kg/m².
4. Obesity may be defined as an abnormal growth of adipose tissue which is in three ways as; (1) Enlargement of fat cells in size (hypertrophy obesity) (2) Increase in the number of fat cells (hyperplastic obesity) and (3) Combination of the above two.

Fifty years ago overweight and obesity are defined as a nutritional disorders but it continues to be one of the most important yet preventable health hazard [3] The transformation of India into an affluent nation has brought these changes in lifestyle, and junk food diet that have led to an increase in obesity [4]. Accumulated neo-rich and lowered physical activity in the setting of “desk” with white color jobs of more mental activity has created a population who has a net increase in available energy stored as fat [5] and to set a disease called as obesity [6] Obesity is a leading reason for people death become an epidemic in 21st century [7], where in 75% Indian women in the cities are apple shaped, while 58% of men are as so [8].

It is a bitter truth to swallow said by W.H.O. that every 4th person on earth is with the disease of secondary list of dangerous diseases is “too fat” (Obese) which is a *Santarpanajanya vyadhi*. Ayurveda classifies this disease as *Kaphaja nanatmaja vyadhi* [9] generated due to *Agnimandya* [10]. Charaka has considered stout person as one of the *Asta Nindita Purusha* (hypothalamic obesity) [11]. Susruta affirms that the stoutness (*Sthoola*) and emaciation (*Karshya*) are due to *Rasa dhatu* only [12]. *Vagbhata* indicated “*Langhana*” therapy for *Sthoulya* [13] Sharangdhara has not detailed about *Sthoulya* [14] but in management described for *Medodosha* [15]. Bhavamishra insisted upon a symptom; “profuse sweating” which is due to the excess of *Medas*, which can create a media for external germs to seat on the skin to precipitate infection [16] Chakradatta [17] and Yoga Ratnakara [18] views on *Medoroga* are almost similar to Brihatrayi.

Commentators Chakrapani and Dalhana have clarified that the state of *Teekshnagni* leads a person to under go for *Adhyashana* (over eating), *Kalavyateeta Ahara Sevana* (untimely food) again and again, there by the disturbance in *Agni*, consequentially leads to form *Ama*. The formation of *Ama* is due to the decrease of *Medodhatwagni* than *Jatharagni*. Due to the increased intake of opposite *Pitta* qualities viz. *Sheeta*, *Snigdha guna* and *Madhura rasa*, the *Jataragni mandya* establishes and

leads to *Jataragni janita ama* [19]. The *Margavoradha* [20] is resulted due to the accumulated *Ama* in *Medovaha srotas* [21].

Various classifications are found in context of *Sthoulya* in Ayurveda classics. Astanga sangraha [22] and Astanga Hridaya [23] classifies as *Adhika* (massive), *Madhyama* (moderate) and *Heena* (simple obesity) stoutness. Susruta is different and brought out the classification of *Sthoulya* (obesity) and *Medoroga* (adiposity). Where in Sharangadhara: *Medodosha* (malformed fat) [24].

Charaka identifies the similarities of pathogenesis between *Prameha* and *Sthoulya* [25] as *Kapha* and *Meda* are get vitiated. Therefore pre-obesity symptoms are similar to *Prameha* along with *Medovaha Srotodushti Lakshanas* viz. *Atinidra*, *Tandra*, *Alasya*, *Visra sharira gandha*, *Anga gaurava*, *Anga shaithilya* etc. and the diagnostic features of *Sthoulya* [26] are *Medo mamsa ativridhi*, *Chala sphik*, *Chala udara*, *Chala Stana*, *Ayatha Upachaya* and *Anutsaha*. The methods of estimating body fats [27] in different areas distributed are shown (table-1)

Complications of obesity:

Obesity is termed as the storehouse of diseases as well as leading cause of morbidity and mortality due to its manifold complications. Statistics on health shows that a middle aged person who is 10kg over weight can expect to die roughly 4 years earlier then one with normal weight Obese women are more likely than non-obese women to die from cancer of the gall bladder, breast, uterus, cervix or ovaries. We can classify the complication related to obesity according to various systems viz. Hypertension, LVH (CVS), Stroke (CNS), pulmonary embolism (Resp), DM, Fatty Liver, etc. [28,29,30]:

Objectives

Effect of *Bruhat Panchamuladi Yoga* (oral and *Yogavasti*) in *Medoroga* with reference to weight, BMI and Serum cholesterol

Materials

Source of data: Patients suffering from *Sthulata / Medoroga* are selected from O.P.D Dept of

Kayachikitsa, P.G. studies & Research center, D.G.M.A.M.C Gadag by preset inclusion and exclusion criteria.

Composition of trial drug: Bruhat Panchamuladi yoga. Proportion of combination is in equal parts. [Fig-1-7]

S.No	Sanskrit Name	Botanical Name
1	<i>Bilva</i>	<i>Aeyle marmelos</i>
2.	<i>Agnimantha</i>	<i>Premna mucronata</i>
3.	<i>Shyonaka</i>	<i>Oroxylum indicum</i>
4	<i>Gambhari</i>	<i>Gmelina arborea</i>
5	<i>Patala</i>	<i>Sterro spermum suaveolens</i>
6	<i>Pippali</i>	<i>Piper longum</i>
7	<i>Madhuka</i>	<i>Madhuka indica</i>

Preparation of Medicine:

All above said ingredients are well identified and collected from local area. GMP followed preparation methods used to prepare trial drug. Herbal mixture is fortified (*Bhavana*) with *Bruhat panchamula Churna Kwatha* and finally powdered to prepare compressed tablets.

Methods

a) Study design: Simple random sampling technique clinical trial.

b) Sample size & grouping: Single group with 30 patients.

c) Exclusion criteria:

1. Mechanical complications of *Sthula* hip and lumber spine developing osteoarthritic changes
2. Cardiovascular complications of *Sthula* angina pectoris, Hypertension, cardiac failure
3. Metabolic complications of *Sthula* diabetes, gout etc [31]
4. *Sthula* with secondary causes like endocrinal and C.N.S diseases.
5. *Sthula* with any other major systemic pathology

d) Inclusion criteria:

1. All other conditions other than those of exclusive criteria are included.
2. *Sthula* according to classical texts prescribed

symptoms is included.

3. Patients of both the sexes between the age group of 20-50 yr are included.

4. Patients with raised BMI as per the WHO standards and collected data from Gadag province of age groups 20 to 50 are included.

e) Criteria of Diagnosis: The clinical features of *Sthoulya /Medoroga* mentioned in classical texts are the basis of diagnosis and along with deviated standard of BMI.

f) Posology:

Internally: - 1500mg/ 24hrs in distributed doses of TDS or 25mg/kg body weight /24hrs of *Bruhat Panchamuladi ghanavati*.

Yoga vasti:- As presented in the classical text for 8 days with *Bruhat Panchamuladi yoga*.

g) Study duration:

Thirty-two (32) days in total divided protocol as under -

1-8 days *Vasti* (8 days),

9-16 days *Sansarjana Krama* (8 days),

17 - 32 days internal medicine (16 days)

h) Follow up: Fifteen days.

i) Subjective parameters:

1. *Spik Chalatwa*
2. *Udara Chalatwa*
3. *Sthana chalatwa*
4. Irregular development of body (non symmetrical body)
5. *Anutsaha*

j) Objective parameters:

1. Weight
2. B.M.I.
3. Sr. Cholesterol.
4. Sr. Triglycerides

Result of the Bruhatpanchamuladi yoga:

The results are drawn in four categories viz. Good response, Moderate response, Poor response, and No response. Subjective and objective parameters of base line data to after treatment data comparison are undertaken for the assessment of results using the paired-'t' test and non parameter test.

The result of the *Bruhatpanchamuladi yoga* is representing the efficiency of the drug with its embedded qualities. There were no patients in “Good” or “No response” categories. The major portion of samples fall under Poor response (73.33%) and the rest are with moderate response (26.66%).

Age & Gender:

Here in this study an attempt is made to understand the male and female responses to the management with respect to that of the age groups. Obesity is higher among middle age adults, i.e. 11 (36.66%) patients were observed in the age group of seen of 20-30 and the rest are distributed in 6 each in 40-50 and 50-60 ages. It is interested to note that the active age group patients of 30-40 age groups reported only 7 (23.33%) patients. The male female ratio in the study is approximately 3:2 patients. It express that the obesity is more in females (76.66%) when compared with males (23.33%).

Chronicity & Family history:

33.33% were with more than 5yrs history followed by recent history of less than 2 years is in 23.3%. The *Sthoulya* observed as familial as 53.33% have family history. The rest of 46.66% show the instantaneous expression of the disease.

Food Habits:

The vegetarian (46.66%) and mixed diet (53.33%) ratio in the study is approximately 3:4 patients. The percentage of the distribution does not show any diet differentiation to get this *Sthoulya*, a disease in specific, except a small lean towards mixed diet population.

Parameter Analysis:

From the analysis, five of eight parameters have shown significant result (as $P < 0.05$). All the subjective parameters have shown significance (by comparing t-Value). The mean reduction is shown in *Chala Udara* with 68.25%, *Chala Sphik* with 52.02% and *Chala Sthana* with 5.71%. The W.H. Ratio has shown significance than any other with 8.04% of mean reduction. Weight reduction is of only 4.76% and B.M.I. with 4.68% of mean is not significant.

Serum Cholesterol with 3.85% of mean reduction also has shown statistically result as not significant. The detailed statistical analysis is shown in table-2.

Discussion:

Normal functions of *Meda* (fat) are *Sneha* (unction), *Sweda* (swetting), *Drudata* (strengthening body) [32] and *Asthipusti* (strengthens bone). Charaka brings a simile of wild fire as the *Vata* and *Pitta* vitiate and block *Medas* to stimulate digestive fire there by craves for food but subsequently restrain further tissue built in the body in sense is a disease [33]. Bhavamishra mentions that increased proportion of '*Shonita*' at the time of conception, results in to stout but weak body, which is genetic disorder and incurable [34] Apart from that over nutrition during pregnancy is a predisposing factor for the birth of an obese child [35].

Medoroga (Ati-Sthoulya) is enlisted among “*Vamana*” indicated by Sushruta [36] and *Langhana* by Vagbhata [38]. Alleviation of *Vata* and *Kapha* along with depleted *Medo dhatu* by increasing *Medo dhatwagni* is the aim of treatment in *Sthoulya* (*Gadagraha*). Administration of the drugs with *Guru* and *Karshana* results in the alleviation of *Medas*, *Sleshma* and *Vata* [39]. Administration of *Virukshana* and *Chedaniya dravyas* [40] and external purification therapy such as *Ruksha Udavartana* [41] benefits along with *Samshodhana* therapy including *Vamana*, *Virechana*, *Ruksha Niruha* [42], *Raktamokshana* [43] etc. Practices in *Sthoulya* with *Vasti* include - *Vasti* prepared with *Taila*, *Gomutra*, *Kanji* and *Saindhava* [44], *Erandamuladi Niruha* [45], *Kapha nashak Vasti* [46], *Lekhan Vasti* [47] and *Madhutailika Vasti* [48, 49].

Measures commonly used for assessing obesity are B.M.I., Waist circumference (WC) & Waist hip ratio (W.H.Ratio). Unfortunately, B.M.I. is not considered to be a good estimate of obesity in Asian Indians as they have a characteristic obesity phenotype, with relatively lower B.M.I. but with central obesity.

Prior to start this trial, a study of randomly

selected 100 people was conducted in the local area of Gadag province which showed majority of people having lower B.M.I. with relatively higher Waist circumference and W.H. Ratio. Though lot of significance is given to B.M.I. in relation with cerebro-vascular accidents, but in Asian Indian population majority of people have phenotype of obesity with relatively less B.M.I. and still suffering from cerebro-vascular accidents. This study indicate that the threshold for obesity parameter i.e., B.M.I. is relatively low when compared with W.C. and W.H. Ratio in rural. Even some national level studies suggest that for any given B.M.I., Indians tend to have increased waist circumference. Further Indians also tend to have excess body fat, abdominal and truncal adiposity. These features have been referred to as the “Asian Indian phenotype or paradox”. The W.H.O. has revised the B.M.I. cut-off for Asian Indians and suggested a B.M.I. of 25 kg/m² to define obesity against the 30 kg/m² recommended for Europeans. Several studies from India have attempted to modify the threshold for obesity and abdominal obesity, and have suggested cut-off for B.M.I. ranging from 19-22 kg/m², while that of waist circumference ranges from 72-85cm in men and 65.5-80cm in women.

In the present study, though the results are given on the basis of weight reduction (base to decide B.M.I.), but statistically significance is not observed in the reduction of weight. At the same time W.H. Ratio has shown significant result. This is because, almost all the patients were observed with phenotype obesity where weight and B.M.I. are not considered to be a good estimate of obesity. Hence the study being involved with majority of phenotype obese patients, the statistical result was also found significant in W.H. Ratio. The probable mode of action to decide why it affect only WH ratio is difficult to estimate.

Conclusion:

On the basis of the study “*Bruhat panchamuladi Yoga in Medoroga*” the conclusions drawn as - Indians are tend to have excess body fat, abdominal and truncal obesity (pendulous abdomen,

buttocks and breasts) and tend to have increased waist circumference. Obesity produce complications are six times more in women in comparison with men. As Charka's explanation of *Sthoulya* matches with phenotype of obesity, W.H. Ratio and skin fold thickness can be taken as parameters to assess the *Sthoulya*, as W.H. Ratio helps to check the abdominal fat (*Chala udara*) and gluteal fat (*Chala sphik*) & Skin fold thickness helps to measure regional fat (*Chala sthana*). The overall result of *Bruhat panchamuladi Yoga* is representing the efficacy of the drug with its qualities is 26.6% moderate response and 73.3% with poor response. The *Bruhat panchamuladi Yoga* response in all parameters (Table-2) is significant with P < 0.05. “Obesity / *Sthoulya*” is a chronic illness that requires continuous treatment and new interventions to adopt as the obese patients adapts to the circumstances.

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S.No	Method	Easy of use	Accuracy	Measures regional fat
1	Height and Weight (BMI)	Easy	High	No
2	Skin folds	Easy	Low	Yes
3	Circumferences (WH Ratio)	Easy	Moderate	Yes
4	Ultrasound	Moderate	Moderate	Yes
5	Density Immersion	Moderate difficult	High	No
6	Heavy water Tritiated Deuterium oxide or heavy oxygen	Moderate Moderate	High High	No No
7	Potassium isotope (40K)	Difficult	High	No
8	Total-body electric moderate Conductivity	Moderate	High	No
9	Bio- electric impedance	Easy	High	No
10	Fat-soluble Gas absorptiometry	Difficult	High	No
11	Computed tomography	Difficult	High	Yes
12	Magnetic resonance imaging	Difficult	High	Yes
13	Neutron activation	Difficult	High	No

Table-1, showing Methods of Estimating Body fat and its distribution

	Mean difference	S.D.	S.E.	t-Value	P-Value	Result
Weight	3.56	5.21	0.95	2.02	>0.05	NS
B.M.I.	1.5	0.9	0.16	9.3	>0.05	NS
W.H. Ratio	0.04	1.59	0.29	0.13	<0.05	HS
Sr. Cholesterol	7.38	8.33	1.52	4.85	>0.05	NS
Sr. Triglyceride	6.3	22.16	4.05	1.55	<0.05	HS
Chala Sthana	0.03	0.14	0.02	1.5	<0.05	HS
Chala Udara	2	2	0.36	1.5	<0.05	HS
Chala Sphik	0.9	1.5	0.27	1.33	<0.05	HS

Table -2. Statistical analysis of Bruhatpanchamuladi Yoga