



A CLINICAL STUDY OF GUGGULU W.S.R. TO MEDOHAR EFFECT ON OBESITY (STHAULYA)

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ABSTRACT

Obesity is defined as an abnormal or excessive accumulation of fat. A person with a body mass index (BMI) equal to or more than 30 is considered Obese. In *Ayurveda* Obesity is described as *Sthaulya* (*Medoroga*). A clinical study was conducted at IPGT&RA Jamnagar, Gujarat in Ras Shastra and Bhaisajya Kalpana department to evaluate the efficacy of *Triphala Shodhita Guggulu* and *Gomutra Shodhita Guggulu* in *Sthoulya* patients. In this study total of 35 patients were registered, out of which 25 patients completed the course. They were randomly divided into 2 groups; 12 patients were given *Triphala Shodhita Guggulu* (TSG) and 13 patients were given *Gomutra Shodhita Guggulu* (GSG) for 30 days in the dose of 1gm twice a day with lukewarm water.

Keywords: Obesity, *Sthaulya*, *Guggulu*, *Meda*.

INTRODUCTION

Nowadays sedentary lifestyle and changing environment and unwholesome dietary habits have made man a victim of numerous ailments “Obesity” is one of them. *Sthaulya* (Obesity) is a global problem that has wreaked havoc on the health of a whole generation and has become a major health issue in India as well. Obesity (*Sthaulya*) is a disease that can lead to a variety of illnesses, including Hypertension, Ischemic Heart Disease, Diabetes, Osteoarthritis, Infertility, Impotency, and psychological problems such as stress, anxiety, and depression. As a result, Obesity can be considered a substantial contributor to health decline. In recent years, Obesity attracted the attention of the medical fraternity. It is the most common and adverse nutritional problem in the industrialized world. Overweight and Obesity are defined as abnormal or excessive fat accumulation that presents a health risk. A person with a body mass index (BMI) equal to or more than 25 is considered overweight and equal to or more than 30 is considered obese.^[1]

In *Ayurveda* Obesity (*Sthaulya*) is described as “*Medoroga*”. *Acharya Charka* has described eight *Nindniya Prakriti's* according to the body constitution and *Atisthauyaya* (Obesity) is one of them, which is *Medopradoshajavikara*.^[2] The term *Medoroga* was first used by *Acharya Madhava* to define Obesity and lipid-related complications.^[3]

Acharya Charaka has described *Sthaulya* as an excessive increase in the quantity of *Meda* and *Mamsa Dhatu* leading to pendulous movement of *Sphik*, *Udara*, and *Stana* with morphological disproportion.^[4] *Acharya Charaka* has described *Sthaulya* under *Santarpanotha* diseases.^[7] Lack of physical exercise and indulging in *Kaphavardhaka Ahara* leads to *Medovridhi* and hence causes “*Medoroga*”.^[5]

In the context of the present study, the *Guggulu* is selected, which is exudates of the plant *Commiphora Mukul*. Right from the *Vedic* period, *Guggulu* is a well-known drug in the Indigenous System of Medicine. Many properties of *Guggulu* are described in our classics. Our ancient seers like *Shushruta* explicitly describe in our classics, the utility and usefulness

of *Guggulu* in the treatment of Obesity and other complications (*Su. 15/32*).

Material And Methods

Aim and objective:

To assess the role of *Triphala Shodhita Guggulu* and *Gomutra Shodhita Guggulu* in *Sthaulya* (Obesity)

Study Design:

A single-blind Clinical Study with pre-test and post-test design where 35 patients suffering from *Sthaulya* (Obesity) were selected randomly, irrespective of gender or religion from the outpatients and inpatients department of *Roga Nidan* and *Kayachikitsa*, *IPGT&RA*, *Jamnagar*.

Intervention Drug: *Triphala Shodhita Guggulu* and *Gomutra Shodhita Guggulu*

Dose: 1gm BD given before lunch and dinner with Lukewarm water

All patients selected for the study were given 2 *Vati* (each 500mg) BD for 30 days.

Diet And Physical Exercise:

Do's

- 1) To take a normal diet with an increased amount of salad (green vegetables)
- 2) To do some exercise like walking or at least a little walk after a meal.

Don'ts

- 1) Avoid fatty drinks i.e., fried spicy substances, etc.
- 2) Cold drinks, ice creams, chocolates, etc.
- 3) *Diwaswapna* is strictly avoided.

Follow up: Starting from the day of the treatment follow-up will be done after the end of the study (on the 30th day).

TOTAL DURATION OF THE STUDY: 30 Days

Eligibility Criteria

Criteria For Diagnosis:

A proforma incorporating all the signs and symptoms of *Medoroga* (Obesity) was prepared. A detailed history was taken, and a complete systemic examination was carried out according to the research proforma.

Exclusion Criteria:

1. Patients having CHD.
2. IHD and the highly obese person above 65yrs.

Criteria For Assessment:

To assess the changes patients were examined weekly, and the suitable scoring pattern and objective signs were recorded. After completion of one-month treatment, the efficacy of the therapy was assessed based on the following subjective as well as objective criteria.

Subjective Criteria:

Most of the symptoms and signs of *Sthaulya*, described in *Ayurveda*, are subjective. To give results objectively and for statistical analysis, a multidimensional scoring pattern was adopted. This score was obtained before and after the treatment through statistical analysis and percentage relief was taken out to assess the efficacy of the therapy. the score was given according to the severity of the symptoms.

Absence of symptoms 0

A mild degree of symptoms 1

A moderate degree of symptoms 2

Severe degree of symptoms 3

Objective Criteria:

It was assessed based on body wt. BMI and biochemical investigation are done before starting the treatment and after completion of treatment in terms of percentage relief and statistical evaluations.

For the present study, the girth measurement of certain regions using measuring tape before and after the treatment was also carried out. The girth measurement of the following areas where generally the adiposity is found more was taken: -

1. Chest – in normal expansion at the level of the nipple.
2. Abdomen – at the level of the umbilicus
3. Hip – at the level of the highest point of distension of buttock.
4. Mid-high – mid of the arm between shoulder joint and elbow joint.

In the case of all circumference measurements, the mean values were taken before and after treatment. The body weight was also taken before and after treatment.

Biochemical investigations of S. triglycerides, Random blood sugar, S.HDL, S. LDL, and S. Cholesterol were done before and after treatment.

Overall Effect of The Therapy:

The effect of therapy was marked as follows:

1. Cured: 100% relief in signs and symptoms
2. Markedly improved: 75 to 99 % relief in signs and symptoms
3. Moderately improved: 50 to 74 % relief in signs and symptoms
4. Improved: 25 to 49 % relief in signs and symptoms
5. Unchanged/stable: less than 25 % relief in signs and symptoms

Result:

Overall Effect of Therapies

The present study shows the overall effect in the TSG group 41.65% of patients were observed to moderately improved, while 24.99% of patients were found to improve. Markedly improved and unchanged each was found in 16.66% of patients. However, in the GSG group, 46.20% of patients were observed moderately improved. Markedly improved and improved each was found in 23.10% of the patients, while 7.77% of patients remained unchanged. None of the patients was found cured in the present study in both groups.

DISCUSSION

Description of patients in relation to-

Age (Vaya): It was observed that most of the patients belonged to the age group of 21-30 yrs i.e., 34.32% followed by 25.74% in 31-40 yrs group 20.02% of patients from the age group of 41-50 yrs and 62.92% of patients from *Madhya Vaya Awastha*. 30-50 yrs of age are referred to as *Madhyama Kaal*, which is the state of *Paripurnata* of all *Sharir Dhatus*. Nowadays it is a fact that Obesity is more prevalent in adolescents.

Sex: 57.20% of patients were females followed by 42.9% of males, which supports the study that *Sthaulya* is more prevalent in the female community.

Religion: in the present study, 94.38% of patients were found Hindu, it may be suggested that this geographic area is Hindu populated.

Marital status: Maximum of 80% of patients were found to be married; this may be due to the fact most of the patients were of middle age.

Occupation: In the present study, 45.76% of patients were housewives, while 8.06% of patients were businessmen, which shows that a sedentary lifestyle plays an important role in the disease process.

Education: Maximum of 40% of patients were graduates followed by higher secondary 28.57% and middle education 20%. 8.57% of patients were having post graduate level of education. It suggests that *Sthaulya* is common in all educational status.

Socioeconomic status: Maximum numbers of patients i.e., 40% were from the middle class followed by 31.46% from the upper-middle class and 17.16% patients from the rich class. It suggests that it is common in a financially stable population

Family history: Maximum number of patients i.e., 60% were having a positive family history of *Sthaulya*. *Beeja Swabhavata* has been mentioned as one of the important causative factors of *Sthaulya*, data supports this view.

History: Maximum numbers of patients i.e., 22.85% of patients were suffering from Hypertension, while 11.42% of patients were having Hypothyroidism. It suggests that Hypertension is common in obese people and Hypothyroidism may be one of the causes of Obesity. Also, 8.57% were of Bronchial asthma and were on continuous steroid therapy, which is a known cause of Obesity.

Sleep: Most of the patients i.e., 57.20% were having good sleep which reflects the role of *Nidra* in the prevalence of Obesity.

Vyayama Shakti: In the present study maximum no. of patients i.e., 62.92% had *Madhyama Vyayama Shakti*, while 31.46% had *Avara Vyayama Shakti*. It represents that *Vyayama Shakti* is reduced by *Sthaulya*, as said by *Acharya Charaka*, this reduced *Vyayama Shakti* further aggravates *Sthaulya*.

Pramana (height and weight): In the present study maximum no. of patients was from the 1.551-1.575-

meter height range i.e., 28.60% followed by 14.30% of patients found in each 1.451- 1.475mtr and 1.476-1.500mtr height range. This shows that *Sthaulya* can affect any person irrespective of their height.

The majority of 48.62% of the patients were in the 81-90kg category and 25.74% were from the 71-80kg category. It suggests that the majority of the patients of *Sthaulya* weighed more than 70kg.

Agni and Abhyavaharana Shakti: In the present study, the maximum no. of patients had 45.76% *Madhyama Abhyavaharana Shakti* followed by 40.04% of patients who had *Pravara Abhyavaharana Shakti* as well as 62.92% of patients were having *Tikshnagni*. It suggests that increased *Abhyavaharana Shakti* and *Tikshnagni* were found in *Sthaulya*. Viti-ation of *Vata* by the obstruction of the path by *Meda* leads to *Tikshnagni* in *Koshtha*.

Dietetic Habit: In the present study maximum no. of patients i.e., 57.20% were having the habit of *Adhyashana* and 42.90% of *Atyashana*. This *Adhyashana* and *Atyashana* provide extra calories, which are accumulated in the form of fat in the body, resulting in Obesity. It also supports the view of *Sushruta* who quoted that *Ama* formation due to *Adhyasana* and *Kalavyatikrama* of *Bhojana* indulged in the pathogenesis of *Sthaulya* (Su. Su. 15/32).

Emotional Make-up: most of the patients in the present study were jovial (74.36%), while 37.18% were angry and others were suffering from different psychological conditions like irritation 40.04%, tension 31.46%, anxiety 28.60%. *Acharya Charaka* has quoted that *Harshanitytva* (jolly nature) is one of the important causative factors for *Sthaulya*.

Bowel Habits and Micturition: Maximum of 51.48% of patients were having regular bowel habits while a maximum of 80.08% of patients were having a history of *Madhyama Mutra Pravritti* (micturition).

Aggravating factors: In the present study, delivery and tubectomy were reported in 60% and 30% respectively by the female patients, as aggravating factors for the disease, which supports the view of a present allopathic system that hormonal imbalance is one of the causes of Obesity. However sedentary life

was found an aggravating factor in 28.60% of patients.

Menstrual and Contraception history: Most of the patients were female i.e., 57.20%, and in female patients menstrual and contraception factors are related to Obesity. In maximum no. i.e., 50% of female patients were having regular menstrual history, while 30% were irregular. It was found that 25 % of female patients had crossed the menopausal stage, while 40% of the female were not having any contraceptive history.

The sequence of Meda Sanchaya: In the present study, the maximum no. of patients i.e., 57.20% complained that the sequence of *Meda Sanchaya* was found in *Udara-Sphika-Stana*. *Udara-Sphika* and *Stana* are sites of fat deposition. The commonest site is *Udara*, which was found in all patients.

Dosha and Srotodushti: In the present study, *Kapha Dosha* was found predominant in all patients, because the *Sthaulya* is the *Nanatmaja Vyadhi* of *Kapha Dosha*. While regarding the *Srotodushti*, in all patients *Medovaha Srotodushti* was found. Followed by 68.34% in *Swedovaha*, 60.06% in *Mamsavaha*, and 54.34% *Rasavaha Srotodushti* were found, which are the *Samprapti Ghataka* of *Sthaulya*.

BMI: Maximum no. of patients i.e., 42.90% were having 36-40 BMI range, while 28.60% were having 31-35. It means most of the patients were suffering from a grade-2 type of Obesity.

Biochemical Parameters: Maximum no. of patients i.e., 37.18% were having S. cholesterol levels ranging from 180.210 mg/dl and 28.60% were from 150-180mg/dl. While maximum no. of patients i.e., 42.80% was having S. triglyceride level 51-100 mg/dl. Almost all patients were having a normal range of S. cholesterol and S. triglyceride level. It suggests that hypercholesterolemia and hypertriglyceridemia are the complications of the *Sthaulya* rather than the cause. They may be associated with the *Sthaulya*.

Chronicity: Maximum no. of patients i.e., 51.48% were having chronicity of 5 years while 37.18% were having 5-10 yrs. It suggests that *Sthaulya* is a chronic type of disorder.

Nidana: In *Aharatmaka Nidana* most of the patients were taking *Atiguru* i.e., 91.52% *Atisingdha* i.e., 88.66% *Atimadhura* i.e., 82.94% *Dahisewan* i.e., 74.36% *Atisleshmala* diet. Among *Viharatmaka Nidana*, *Avyayama*, and *Asansukha* each in 68.64%, *Diwaswapna* in 74.36% *Cheshtadwesha* in 60.06%, and *Atinidra* in 51.48% of patients were found. Among the *Mansika Nidana* 60% of patients had the tendency 57.20 % of *Harshnityatvam* while *Achinta* was found in 40.04% of patients.

All the above factors are *Kapha* and *Medovridhhi kara*. Therefore, they cause *Sthaulya*. The *Nidana Beeja Doshata* was found in 60.06%, which is also an important factor for the disease *Sthaulya*.

Chief complaints: The characteristic feature of *Sthaulya* is *Bhar Vridhhi*, which was found in all patients followed by *Kshudrashwasa* in 88.66%, *Swedadhikya* and *Utsahani* each in 74.36%, *Atikshudha* in 51.48%, while *Daurbalya* and *Gatradurgandhya* each in 40.04% of patients were found as chief complaints. Associated complaints: Among the other symptoms maximum *Chalatva* was reported by 88.66% of patients, *Gatrasada* and *Angashaithlya* each in 71.50%, *Snighdagatrata* in 65.78%, while *Angagaurava* and *Alasya* each in 60.06% were found as associated complaints, above all chief and associated complaints are found in *Sthaulya* because all these are produced by the extra accumulation of *Meda* in the body. The disease *Sthoulya* originates due to the consumption of *Kapha Vriddhikar Vihara* and *Anyā Nidana*. These factors derange *Jatharagni* causing *Ama*, *Annarasa* which results in *Medodhatu Agnimandya*. This condition leads to excessive growth and accumulation of *Medo Dhatu* causing the disease *Sthaulya*. In *Ayurveda*, the action of drugs is executed in the body through its pharmacodynamics properties like *Rasa*, *Guna*, *Veerya*, *Vipaka* along with these *Prabhava* is the specific property inherited by the drug which cannot be explained, and the principle of treatment in *Ayurveda* is based on *Samprapti Vighatana* which is achieved by relieving *Dosha Dushya Sammurchana*. In the pathology of *Sthaulya*, *Kapha* is the main *Dosha* and *Meda* is the main *Dushya*, while *Agnimandya* takes place at the *Medo-*

dhatvagni level. In the present study, *Guggulu* is taken for Clinical trial. Ultimately keeping one's weight under control is a challenge that has to be taken up individually. Management of *Sthaulya* continues to be a challenging problem; the present study is an effort to find a solution for the management of *Sthaulya* by *Gugglu* because due to its properties it helps in the scrapping of excessive *Meda* and *Kapha* and helps in the breakage of the pathogenesis of Disease.

Probable Mode of Action:

The disease *Sthaulya* originates due to the consumption of *Kapha Meda Vriddhika Vihar* and *Manas Nidan*. These factors derange different *Agni* levels in the body, especially at the level of *Medodhatvagni*, which results in the production of *Ama* and leads to *Upchaya* (increase) in *Meda Dhatu*. As *Guggulu* is having all pharmacodynamic properties against the *Kapha* and *Meda Dhatu* like *Rasa Katu-Tikta*, *Guna Ruksha-Laghu- Tikshna- Sukshma*, etc, *Virya Ushna* and *Vipak Katu* due to its properties it is *Pitta Vardhak* in nature.

First of all, by the virtue of its property *Guggulu* enhances the level of *Agni* (metabolic activity) in the body and digests the produced *Ama*. Due to the *Ama Pachan*, associated symptoms of *Sthaulya* like *Angagaurav*, *Alsya*, *Atindira*, *Tandra*, *Shrama*, *Daurbalya*, etc subsides. Further, after the *Pachan* of *Amadosha* it turns to the increased *Ama Meda Dhatu* and produces *Lekhan* in the body, which leads to the *Upshamana* of *Sthaulya*.

Guggulu is found quite effective in obese people rather than overweight (upto 20% more weight than ideal). It also suggests that *Guggulu* reduces the *Ama Meda Dhatu* because; obese patients have *Ama Meda Dhatu*.

GSG is found more effective on biochemical parameters like S. cholesterol, S. triglyceride, and random blood sugar than TSG. It is probably because *Gomutra* itself consists of a lot of *Kshariya* substances *Katu*, *Tikta Ras*, *Tikshna* and *Laghu Guna*, *Ushna Virya*, and *Katu Vipaka*. By the virtue of these properties, it enhances the *Ama Medohara* action of *Guggulu* and reduces the various lipid content in the body (these elevated lipids can be referred to as *Ama Mada*

Dhatu). However, *Triphala Kwatha Lekhana* property due to which TSG has better result in weight reduction. It suggests that gain in weight in a hyperlipidemic stage in the body may have different pathological factors. However, it was noticed that patients who were obese but not overweight drugs exhibits their action soon suggesting that in diseases condition of *Sthaulya Gugglu* shows its *Med Ohara* action.

CONCLUSION:

1. *Sthaulya* is a predominant metabolic disorder, which is described by *Charaka* in *Ashtaunindita Purusha*. now a day's WHO has undertaken Obesity in 10 selected risks to the health in "The World Health Report-2002"
2. Faulty dietary habits and sedentary lifestyle in day-to-day life are the main factors in the pathogenesis of Obesity.
3. According to modern science excessive adipose deposition in the body is the prime reason for the manifestation of disease and natural products can play a safe and effective role in Obesity.
4. In *Ayurveda*, as the equilibrium of *Doshas* is the main aim of treatment of disease So, *Guggulu* is considered to be a safe *Ayurvedic* drug for the treatment of *Sthaulya* and its associated disorders mentioned in *Ayurveda* Classics.

Results obtained after the study were highly encouraging and free from adverse effects. *Gugglu* therapy shows moderate improvement in the subjective symptoms of Obesity and significant results in weight and BMI reduction.

After completion of the study, it is concluded that *Gomutra Shodhita Guggulu* has better results than *Triphala Shodhita Guggulu* in a clinical study on patients of *Sthaulya*. So, GSG should be used for better hypolipidemic in the patient Hyperlipidemia. *Triphala Shodhita Guggulu* showed better results in reducing body weight than *Gomutra Shodhita Guggulu*. No adverse effects were found during and after the study.

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