

A CLINICAL STUDY OF GOMUTRA BHAVITA LEKHANIYA MAHAKASHAYA IN THE MANAGEMENT OF OBESITY

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ABSTRACT

Obesity is the world's oldest metabolic disorder. The WHO now considers obesity to be a global epidemic and public health problem. Globally an estimated 300 million adults are now obese and many are overweight. Overweight and obesity are defined as abnormal or excessive fat accumulation of body that presents a risk to health. A person with a BMI of 30 or more is generally considered obese. The problem is due to calorie imbalance resulting from an excessive food intake coupled with inadequate exercise. Prominent health risks associated with obesity are hypertension, DM type2, dyslipidemia, stroke, gallbladder stone, and O.A. respiratory problems. As per Ayurveda, *acharyacharaka* has counted *sthoulya* under the eight varieties of impediments which are designated as *Ninditapurusha*. According to Chikitsa sutra of the disease, *lekhnika* therapy is an important therapeutic measure in *sthoulyas* said by Acharya Charaka. Moreover, drugs of *lekhaniamahakashaya* are most effective in the management of *sthoulya*. To assess the effect of *lekhan* therapy 20 patients were selected for this study from the OPD of Chirayu Ayurveda and Panchkarma hospital, Ajmer, Rajasthan. The effect of the therapy was assessed statically based on the performance prepared.

Key words: *lekhaniamahakashya*, *sthoulya*, obesity

INTRODUCTION

Obesity is defined as body weight above a desirable standard as a result of lack of physical activity with increased intake of food. A BMI of 25 to 29.9 kg per m² is defined as overweight. A BMI of 30 kg per m² or more is defined as obesity. These conditions result from a problem of imbalance between energy intake and expenditure. Obesity is not a new problem it

is also described in Ayurvedic literature as well. [1] [2] [3].

Causative factors of obesity are lack of exercise, sleeping day time (*Diwa swapa*), excessive eating of *madhura* (sweet), *snigdha* (oily), *sheeta* (cold) food, *bijadosha* (genetic causes) [2]. Due to these factors fat metabolism of human body get disturbed i.e. *Medo dhat-*

wagni mandya, leads to excessive deposition of fat in body leads to obesity. In the past few years there has been a dramatic increase in obesity and obesity related health hazards. At present in India about 30 million Indians are obese. It is predicted to double in the next 5 years. Easy access to high-calorie packaged foods, consumption of more calories than one can burn out by exercise, lack of exercise, sedentary lifestyles have resulted in almost 70% Indians in megacities such as Mumbai, Delhi, Bangalore or Chennai being overweight or obese. Obese individuals are at increased risk of morbidity/mortality from type 2 diabetes, hypertension, coronary artery disease (CAD), cancer (particularly colon, prostate, and breast cancer), sleep apnoea, degenerative joint disease, thromboembolic disorders, and dermatologic disorders [4].

In modern medicine Pharmacological treatment for obesity are having side effects [5] [6] like drug interfere with the absorption of fat soluble vitamins like A, D, E, K. Other treatment such as Liposuction, Bariatric surgery, which are costly and with many risk factors [6]. Clinically Ayurvedic medicines are found to be useful in weight reduction. Patients suffering from obesity blindly use Ayurvedic tablets, Herbal tea like products marketed on TV sky shops, News paper and magazine advertisements, without doctor's consultation. These medicines may prove harmful for their health. *Lekhaniya kashaya* [7] is collection of Herbs having properties which are useful for reduction of fat without interfering digestion and absorption of vitamins. *Lekhaniya Kashaya* also improves overall digestion as well as fat metabolism of patient due to its penetrating hot properties (*ushna tikshna guna*).

AIMS AND OBJECTIVES

- To study the proper etiopathogenesis of *sthoulya* according to ayurveda and modern medicine.
- To assess the effect of *gomutra bhavita lekhananiya mahakashaya* in the management of *sthoulya*.

STUDY DESIGN-

Total 20 patients were enrolled in this trial. Freshly prepared *Gomutra bhavita Lekhaniya mahakashaya* was given in *churna* form twice a day before food for 2 months. Clinical and statistical assessment of enrolled patients was done monthly, for two months.

INCLUSION CRITERIA:

- (1) Men and Women of 18 year to 65 year of age were enrolled in the project.
- (2) Patients with BMI more than 30 were enrolled in the project
BMI values can categorize patients into three classes of obesity:
BMI is calculated by using formula = $\text{Body Weight (kg) / Height (m)}^2$
Overweight BMI = 25 - 29.9
Class I (mild obesity) BMI = 30.0 to 34.9 kg/m²
Class II (moderate obesity) BMI = 35.0 to 39.9 kg/m²
Class III (severe obesity) BMI = 40 kg/m²
- (3) Measurement of waist circumference = waist circumference >40 inches
(>102 cm) in men and >35 inches (>88 cm) in women were enrolled in this project.
- (4) In this trial apple shaped as well as pear shaped obese patients were enrolled. To decide patient was having which type of obesity following formula was used.

Measurement of waist at narrowest point

Waist to Hip ratio = -----

Measurement of Hip
circumference at widest point

Hip waist ratio more than 0.90 in male and more than 0.80 in females is associated with increased risk of heart disease, Diabetes Mellitus. So health risks of overweight and obesity are associated with excess abdominal fat i.e. apple shaped obesity.

(5) Patients who had obesity associated with Hypothyroidism were in inclusion of the project with required dose of thyroxin.

(6) Patients who had obesity associated with both weight bearing joint pain were also included in the project.

(7) Patients who had obesity with k/c/o Hyperlipidemia were also included in the project.

(8) Patients who had obesity with k/c/o Non-Insulin dependent Diabetes Mellitus were in inclusion of the project with required dose of hypoglycemic drugs.

Exclusion Criteria:

- 1) Patients with k/c/o Cushing's syndrome
- 2) Patients on corticosteroids
- 3) Bedridden or wheelchair confined patients
- 4) History of gastrointestinal bleeding.
- 5) Patients with history of gastric and Duodenal ulcer
- 6) Patients with acid peptic disease
- 7) Pregnant or nursing women

ASSESSMENT CRITERIA: In this project enrolled patients were assessed on the basis of pre and post observations.

OBJECTIVE CRITERIA:

- BMI of the patient before and after treatment.
- Patient's weight before and after treatment.
- Waist circumference of patients before and after treatment.
- Waist to Hip ratio of patients.

DRUG PROFILE-

The *lekhaniya mahakashaya* is described in Charak Samhita. This *mahakashaya* contain 10 drugs namely-*mustak, kustha, haridra, daru-haridra, vacha, ativisha, kutki, chitrak, chirbilva* and *hemvati*. Due to unavailability of *hemvati*, *shuddh guggulu* is taken in place of *hemvati* in this trial. Fresh *gomutra* was taken from a nearby dairy for the *bhavna* process. All 10 drugs of the *lekhaniya mahakashaya* were taken in equal quantity as *churna* form. *Bhavna* of fresh *gomutra* in this *churna* was given for three times. After preparing the homogenous mixture the paste was dried to make fine powder.

ADMINISTRATION OF THE DRUG-

Gomuta bhavita lekhaniya mahakashaya churna was given in the dose of 2gms BD with the *anupan* of luke warm water for two months.

OBSERVATION

Statistical Analysis:

H01: No significant effect of the treatment i.e. LEKHANIYA KASHAYA in weight reduction
H11: Significant effect of the treatment in weight reduction.

Decision Criterion: Reject H01 if $t_{cal} > t_{tab}$ at 5% l.o.s.

As $t_{cal} = 10.60 > t_{tab} = 2.26$, we reject H01 and say that the treatment is effective in weight reduction.

H02: No significant effect of the treatment i.e. LEKHANIYA KASHAYA in BMI reduction
 H12: Significant effect of the treatment in BMI reduction. Decision Criterion: Reject H02 if $t_{cal} > t_{tab}$ at 5% l.o.s. As $t_{cal} = 10.77 > t_{tab} = 2.26$, we reject H02 and say that the treatment is effective in BMI Reduction.

H03: No significant effect of the treatment i.e. LEKHANIYA KASHAYA in WAIST CIRCUMFERENCE reduction
 H13: Significant effect of the treatment in WAIST CIRCUMFERENCE reduction. Decision Criterion: Reject H03 if $t_{cal} > t_{tab}$ at 5% l.o.s.

As $t_{cal} = 6.38 > t_{tab} = 2.26$, we reject H03 and say that the treatment is effective in BMI reduction.

STATICAL OBSERVATION-

Total 20 numbers of patients (16 female and 4 male patients) were enrolled in the project. Male patient had Hip waist ratio more than 0.90. Out of 9 enrolled females, 10 had Hip waist ratio more than 0.80 (60% females had Hip waist ratio more than 0.80) and 6 females had Hip waist ratio less than 0.80. (30% females had Hip waist ratio less than 0.80)

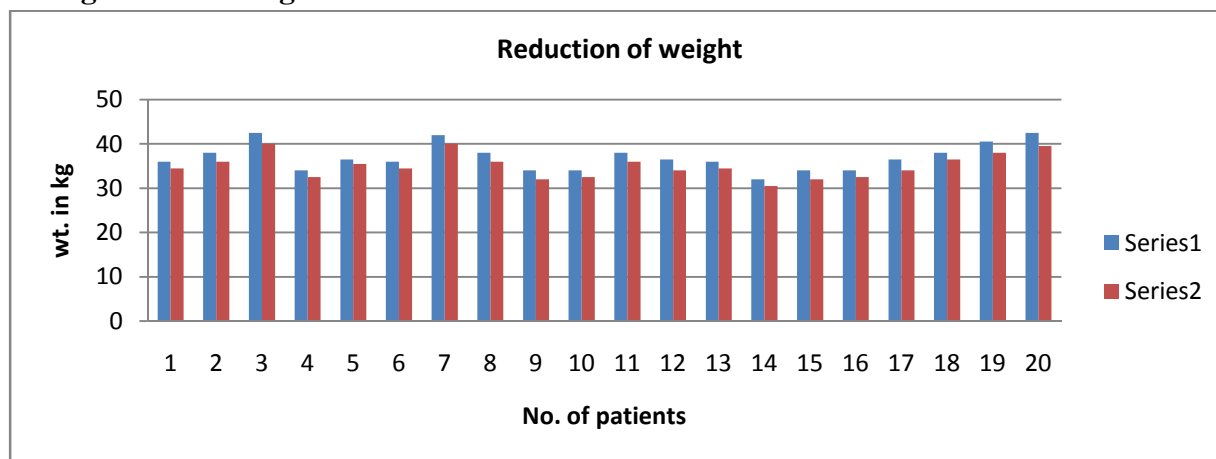
	Mean	SD	SE	T	Remark
Weight	3.5	1.49	0.47	10.6	Significant 5% level of significance ($p < 0.05$)
BMI	1.64	0.6	0.19	10.77	Significant 5% level of significance ($p < 0.05$)
Waist circumference	1.35	0.67	0.21	6.38	Significant 5% level of significance ($p < 0.05$)

BMI of enrolled patients

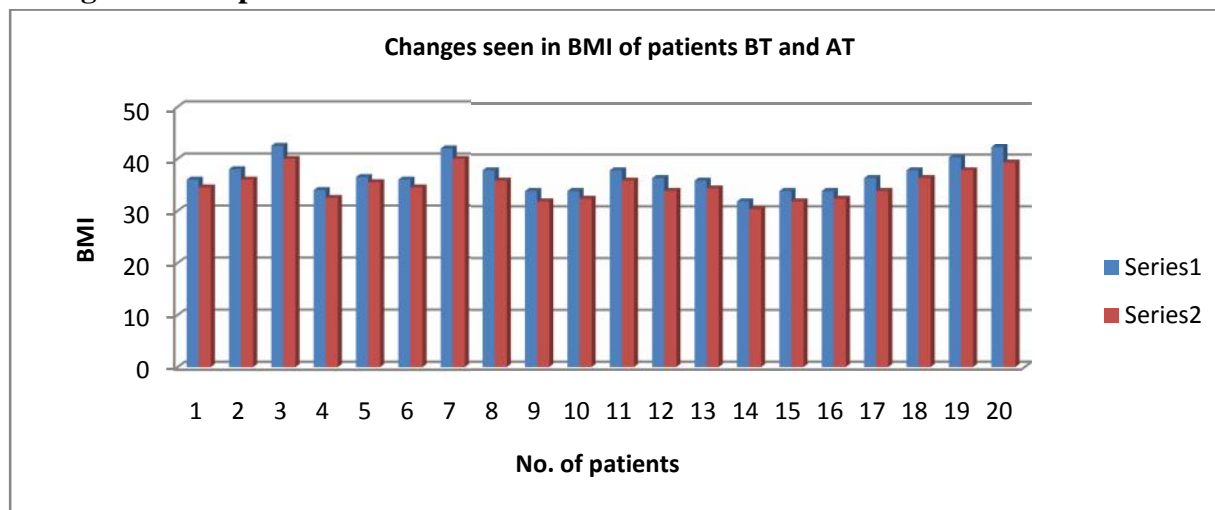
Among 20 enrolled patients 12 patients had BMI between 30.0 to 34.9 kg/m^2 , 6 patients had

BMI between 35.0 to 39.9 kg/m^2 and 2 patients had BMI 40 kg/m^2 .

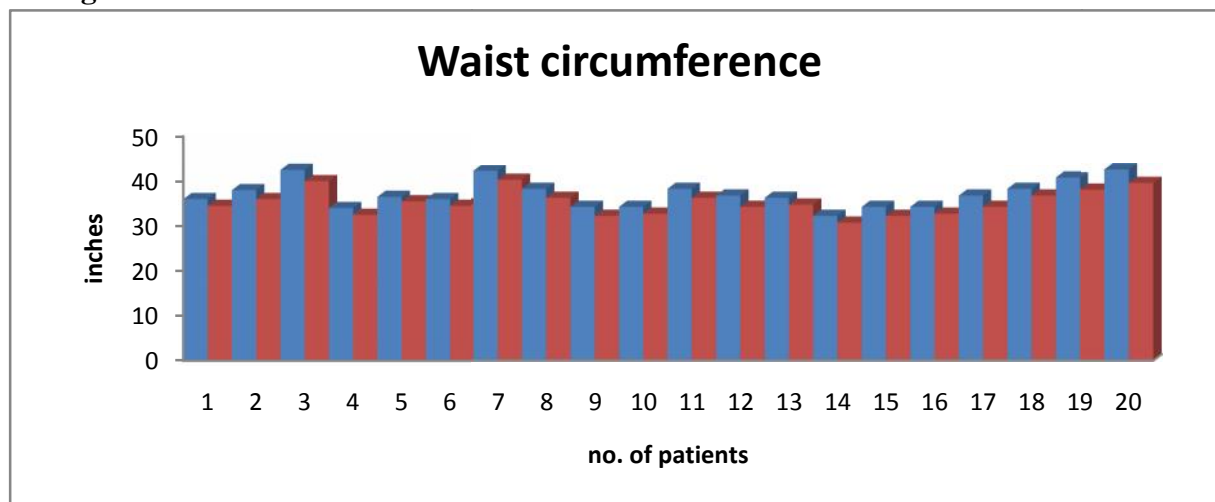
Changes seen in weight before and after treatment



Changes in BMI patients before and after treatment



Changes seen in waist circumference before and after treatment



Other Observations:

- All 100% patients enrolled in the trail were consuming vegetarian diet.
- 20% of total enrolled patients were having obesity with Hypothyroidism.
- 70% of total enrolled patients were having obesity with both knee joint pain (weight bearing joint pain due to excessive weight)
- 20% of total enrolled patients were having obesity with Hyperlipidemia.
- Total 50% of all enrolled patients were having symptom Dyspnoea on exertion.

Observation of Other benefits after 2 months of therapy:

- Lightness in body
- Reduction in lethargy
- Reduction in edema
- Reduction in LDL, VLDL total Cholesterol levels (20% of total enrolled patients who was k/c/o obesity with Hyperlipidemia reduced their LDL, VLDL, Triglaeceride level up to 25% in 2 months)
- Improvement in HDL cholesterol level (20% of total enrolled patients who was k/c/o obe-

sity with Hyperlipidemia improved their HDL cholesterol level up to 30% in 2 months)

- Reduction in weight bearing joint (Knee joint) pain-70 % of total enrolled patients who was having obesity with both knee joint pain (weight bearing joint pain due to excessive weight) showed 50% improvement in knee joint pain and 30% improvement after 2 months of treatment.
- Patients with known cases of obesity with hypothyroidism showed 25% improvement in levels of thyroid hormone. Also showed 50% improvement in reduction of symptoms like facial puffiness, agnimandya (loss of appetite), and menstrual disturbances, lethargy.

PROBABLE MODE OF ACTION OF LEKHANIYA MAHAKASHAYA

- The properties of *lekhanīya mahakashaya* are *katu, tikta, ras* and having *laghu, ruksha, tikshana, lekhan guna, katu vipak* and *ushana veerya, kaphavatashamak*. By this *lekhan* and *medohara* action, the quantity of *abadha meda* reduced from the dependable parts of the body, which brought *laghuta*, and relief in *chalatva*. Though the *udipta jatharagni* get pacified, so *ksudhadhikya* diminished. *Sweda* is the mala of the *meda*, so reduction of the *meda* inhibits excess sweating. Due to *deepan pachan* properties of *lekhanīya mahakashaya*, nutrients get digested and *dhatu poshakansha* can easily reach to respective *dhatu*s enhancing the proper nutrition to all *dhatu*s.
- So it seems that the above combination not only acts on symptomatology of the disease but also checks its progression by hitting the

basic pathological process i.e. *medovaha strotosang* and *meda Sanchaya*.

CONCLUSION

Lekhanīya mahakashaya is doing *lekhan* of excessive fat (reducing excessive fat) due to its *ushna, tikshna, lekhan* (penetrating hot) properties. So it is useful in obesity. *Lekhanīya-kashaya* is significantly reducing weight, BMI and waist circumference at 5% level of significance ($p < 0.05$). *Lekhanīya Kashaya* didn't develop any major side effects in patients after 2 months of therapy. In this project only 2 months therapy was given, but we can continue *Lekhanīya Kashaya* for extra period for more weight reduction, which is the further scope of study. During trial it was observed that *Lekhanīya Kashaya* was beneficial in reducing total cholesterol level, LDL levels, and VLDL levels. It also showed benefits like improvement in thyroid hormone levels and reduction in symptoms of Hypothyroidism. It showed good improvement in menstrual disturbances.

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