

A Clinical Study on Effect of *Khadiradi Yoga* with *Madhu* in *Sthaulya*

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Abstract

Obesity is one of the main public health problems in the world, being considering a disease which worries due to social, psychological and metabolic issues. Even increases the risk of developing cardiovascular diseases, diabetes, some cancers, high blood pressure, breathing difficulties, disorders on the locomotor system and dyslipidemia beyond psychopathological disorders such as depression and binge eating. To treat such is very difficult as it require prolonged period of medicine to reduce its effect in such cases Ayurvedic medicine helps in reducing the complaints along with the life style modification in another hand here an attempt is made to evaluate effect of *Khadiradi Yoga* with *Madhu* in the patients of *Sthaulya* with 30 patients of *Sthaulya* and were treated with *Khadiradi Yoga* compound administered orally in the dose of 1 *karsha* (12 gm) once a day with *madhu* early morning on empty stomach for the duration of 90 days with follow-up for 3 months & analysis was done in that effects of *khadiradi yoga* showed markedly better reduction in weight, BMI and other signs and symptoms in the patients of *Sthaulya*.

Keywords: *Khadiradi Yoga* compound; *Madhu* Obesity; *Sthaulya*.

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Intorduction

The disease *Sthaulya* is a well recognized disease from the *Samhita* period. It has been mentioned by *Acharya Charaka* in *Ashtaunindita purushadhyaya*. *Sthaulya* is another term, which is used for the disease *Medoroga*. *Madhavakara* has described *Medoroga* under the individual entity in 34th Chapter of *Madhava nidana* and used *Medosvina*, *Atisthula* and *Sthula* words as synonym. Regarding causative factors, it is observed that most of the exogenous type *nidana* are mentioned by *Acharya Charaka*, while endogenous

type *nidana* are mentioned by *Sushruta*. *Beejadasha Swabhava* is only mentioned by *Acharya Charaka*. In the *Sthaulya* etiological factors mainly vitiate the *Meda-Kapha*. This vitiated *Meda* obstruct the path of *Vata*, which results in to provocation of *Vata*. In the *samprapti* two factors are of prime importance, *Tikshna Jatharagni* and *Medodhatoagnimandya*. In person having hereditary predisposition disease becomes difficult to cure. Most of the symptoms of *Sthaulya* occur due to excessive accumulation of *Meda* in fat depots leading to *Chalatva* of the various organs, *Kshudra shwasa*, *Anga gauravata* and other various signs and symptoms.

“*Khadiradi Yoga*” having such properties decreases *Meda* by its *Lekhana*, *Shoshana* and *Kaphanashaka* action.

Objective

1. To evaluate the efficacy of *Khadiradi Yoga* compound with *Madhu* in the management of *Sthaulya* (Obesity).

Materials and Methods

The 35 patients of *Sthaulya* (obesity) attending the OPD and IPD of PG Hospital KVG Ayurveda College, Sullia (Karnataka) were registered for this study. Out of these, 5 patients were dropped out and 30 patients completed the prescribed course of the treatment. Criteria of diagnosis. The diagnosis was mainly based on the clinical presentation as mentioned in the *Ayurveda* texts as well as Allopathic texts along with body mass index (BMI). A detailed proforma incorporating all the clinical aspects mentioned for *Sthaulya*/obesity was prepared accordingly, detailed clinical history was taken and physical examination was done.

Inclusive criteria

- Patients irrespective of age and sex presenting with the classical features of *Sthaulya*

Exclusive criteria

- Patients with complications of *Sthaulya roga*
- *Sthaulya* and Obesity patients with any other systemic diseases

Intervention

- Patients registered for the study is administered with *Khadiradi yoga churna* along with *Madhu* as *anupana*.
- Dose – 1 *karsha*, morning in empty stomach
- *Anupana- Madhu*
- Duration- 90 days

Observation period

- Initially on the first day before treatment.

- 90th day for the last assessment.

Method of preparation of drug

Khadiradi yoga compound comprises of three drugs namely *Khadira*, *Asana* and *Triphala*. First of all, *Khadira* and *Asana kwatha* is prepared by adding 4 parts of Heart wood of *Khadira* and *Asana* each to 32 parts of water. *Triphala churna* is given *bhavana* with prepared *kwatha*, then dried and made into *churna* form. Thus prepared *Khadiradi yoga churna* is administered with *Madhu*

Assessment criteria

Abiding with the standard scoring methods, scoring is for subjective and objective parameters. Data is recorded in a specially prepared proforma. Patients are evaluated for the severity of illness as per the scoring methods before and after the study period. Recorded scores are subjected for statistical analysis to confirm the effect of *Khadiradi yoga with madhu*.

Subjective criteria

A multidimensional scoring pattern was adopted for the sign and symptoms of *Sthaulya* mentioned in *Ayurvedic* texts. The score of symptom was assessed before and after the treatment and statistical analysis was undertaken. Apart from cardinal sign and symptom other signs and symptoms were also assessed. This assessment was done before starting the treatment. The paired ‘t’ test was applied for the statistical analysis of the results.

Objective criteria

For objective criteria BMI, height, weight, girth measurements of chest, abdomen, hip, mid arm and mid thigh were taken into consideration

Observation and Results

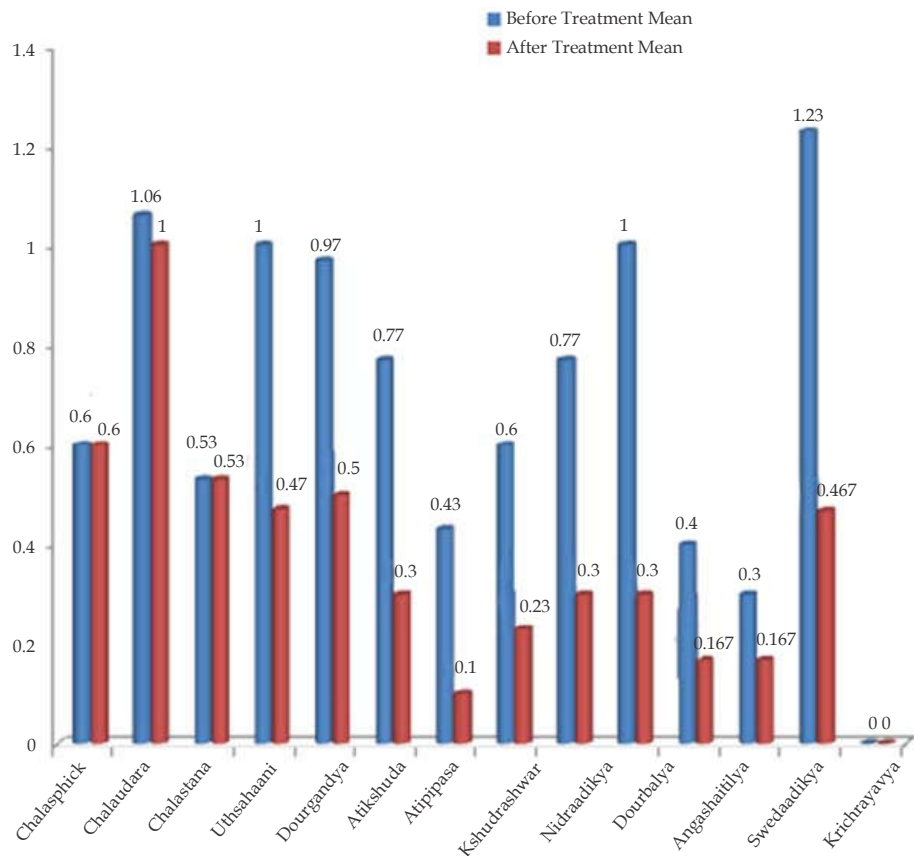
Statistical results of *Khadiradi Yoga with madhu* in 30 Patients before and after treatment.

- Total 30 patients were registered and studied in this project. Each patient was observed thoroughly and noted neatly. The observations are recorded and necessary charts and graphs were made.

Table 1: Comparison of Subjective Variables with Before and after the Treatment

Subjective variables	Before treatment Mean ± SD	After treatment Mean ± SD	Paired t test	p value and significance
<i>Chalaspahik</i>	0.6 ± 0.49	0.6 ± 0.49	t = 0.0	p > 0.05 Not significant

Subjective variables	Before treatment Mean ± SD	After treatment Mean ± SD	Paired t test	p value and significance
Chalaudara	1.06 ± 0.57	1.0 ± 0.52	t = 1.488	p > 0.05 Not significant
Chalastana	0.53 ± 0.56	0.53 ± 0.56	t = 0.0	p > 0.05 Not significant
Uthsahaani	1 ± 0.68	0.47 ± 0.498	t = 5.757	p < 0.001 Very highly significant
Dourgandya	0.97 ± 0.95	0.50 ± 0.62	t = 5.037	p < 0.001 Very highly significant
Atikshuda	0.77 ± 0.76	0.30 ± 0.58	t = 5.04	p < 0.001 Very highly significant
Atipipasa	0.43 ± 0.615	0.10 ± 0.30	t = 3.808	p < 0.01 Highly significant
Kshudrashwasa	0.60 ± 0.80	0.23 ± 0.49	t = 4.236	p < 0.001 Very highly significant
Nidraadikya	0.77 ± 0.80	0.30 ± 0.53	t = 5.037	p < 0.001 Very highly significant
Dourbalya	1.0 ± 0.81	0.30 ± 0.53	t = 7.167	p < 0.001 Very highly significant
Angashaitilya	0.4 ± 0.66	0.167 ± 0.45	t = 2.971	p < 0.05 Significant
Snigdhangata	0.30 ± 0.58	0.167 ± 0.45	t = 2.12	p < 0.05 Significant
Svedaadikya	1.23 ± 0.84	0.467 ± 0.56	t = 6.182	p < 0.001 Very highly significant
Krichrayavya	0.0 ± 0.0	0.0 ± 0.0	t = 0.0	p > 0.05 Not dignificant



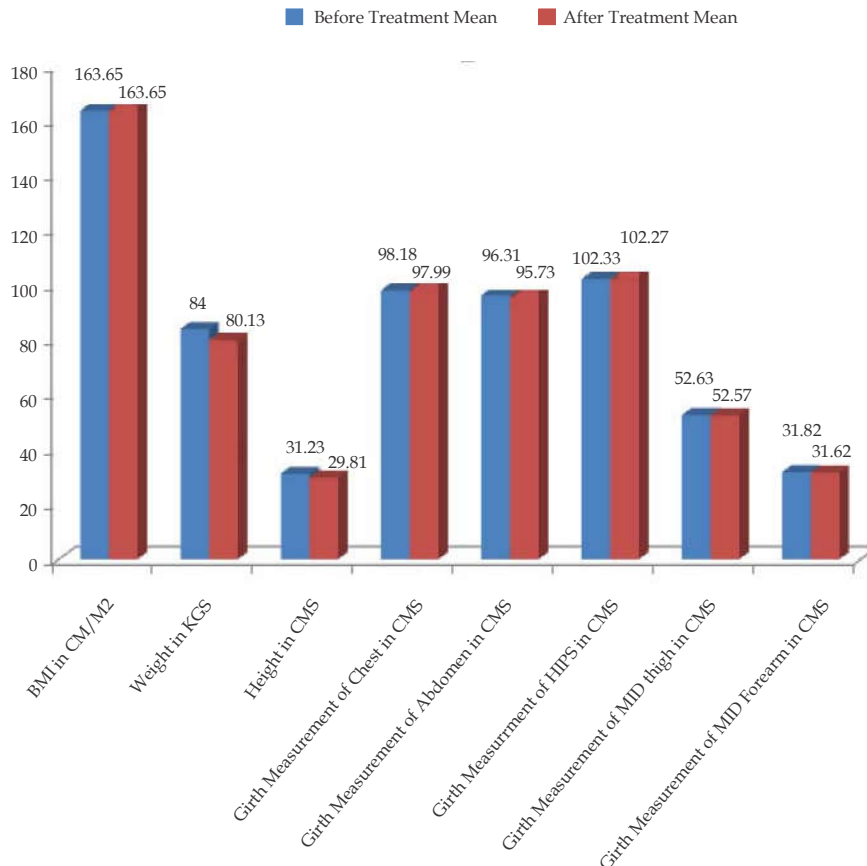
Graph 1: Multiple bar diagram represents comparis on of means of subjective variables with before and after the treatment.

In this work of 30 patients studied in *Sthaulya* on Subjective Variables, Statistical analysis showed that the mean score before the treatment were reduced w.r.t. after the treatment and there is a statistically

Very Highly Significant change ($p < 0.001$), Highly significant change ($p < 0.01$), Significant change ($p < 0.001$) and Not Significant change ($p > 0.05$) results are seen (Table 1 and Graph 1).

Table 2: Comparison of Objective Variables with before and after the Treatment

Objective variables	Before treatment Mean \pm Sd	After treatment Mean \pm Sd	Paired <i>t</i> test	<i>p</i> value and significance
Height in CMS	163.65 \pm 5.45	163.65 \pm 5.45	$t = 0.0$	$p > 0.05$ Not significant
Weight in KGS	84.0 \pm 16.11	80.13 \pm 15.46	$t = 6.547$	$p < 0.001$ Very Highly Significant
BMI in CM/M2	31.26 \pm 5.14	29.81 \pm 4.82	$t = 6.49$	$p < 0.001$ Very highly significant
Girth Measurement of Chest in CMS	98.15 \pm 5.79	97.99 \pm 5.72	$t = 3.45$	$p < 0.01$ Highly significant
Girth Measurement of Abdomen in CMS	96.31 \pm 7.53	95.73 \pm 7.45	$t = 8.599$	$p < 0.001$ Very highly significant
Girth Measurement of Hips in CMS	102.33 \pm 4.07	102.27 \pm 4.11	$t = 2.112$	$p < 0.05$ Significant
Girth Measurement of Mid Thigh in CMS	52.63 \pm 3.28	52.57 \pm 3.57	$t = 2.071$	$p < 0.05$ Significant
Girth Measurement of Mid Forearm in CMS	31.82 \pm 1.71	31.62 \pm 1.70	$t = 3.829$	$p < 0.01$ Highly significant



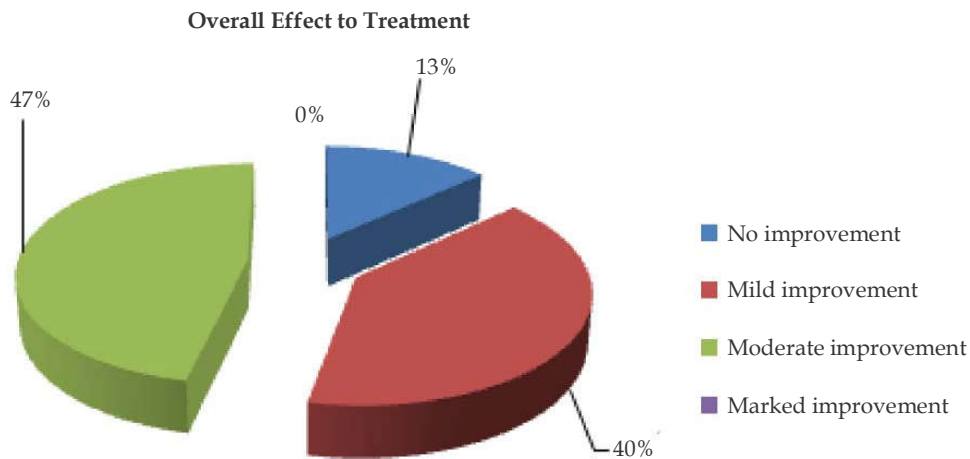
Graph 2: Multiple bar diagram represents comparison of means of objective variables with before and after the treatment.

In this work of 30 patients studied in *Sthaulya* on Objective, statistical analysis showed that the mean score before the treatment were reduced w.r.t. after the treatment and there is a statistically

Very Highly Significant change ($p < 0.001$), Highly significant change ($p < 0.01$), Significant change ($p < 0.001$) and Not Significant change ($p > 0.05$) results are seen (Table 2 and Graph 2).

Table 3: Assessment of Total Effect of Therapy

Effect of Treatment		
Class	Grading	No of patients
0-25%	No improvement	4
26-50 %	Mild improvement	12
51-75%	Moderate improvement	14
76-100 %	Marked improvement	0



Graph 3: Overall effect of treatment is 46.07%.

Discussion

In the disease *Sthaulya*, *Tikshmagni* is occurs. Here, *Jatharagni* is found in excessive condition whereas *Medodhatvagni* is found in *Manda* condition. It is due to *Avarana* of *Vayu* in *Kostha*. So person indulges more food, which produce excessive *Meda* and vitiated cycle go on. This cycle is broken (*Samprapti Vighatana*) by *Katu-Rasa & Ushna-Virya Pradhana* drugs - "*Khadiradi Yoga*" having such properties decreases *Meda* by its *Lekhana, Shoshana* and *Kaphanashaka* action. *Kaphanashaka* properties due to *Agni* and *Vayu Mahabhuta* dominance in them. So, it was thought at that time that being a *Visesa* for *Medhodhatu*, *Khadiradi Yoga* will cause *Hrasa* of increased *Medodhatu* in *Sthula* patients. *Khadiradi Yoga* containing *Khadira, Asana* and *Triphala* possess properties of *Laghu* and *Ruksha guna, Kapha-Medho hara* mentioned by various *acharyas*.

Probable mode of action

According to *rasadi properties*

According to *Vagbhata*, a Drug acts by its *Rasa, Vipaka, Virya, Guna* and *Prabhava*. The probable effects of *Khadiradi yoga (Khadira, Asana and Triphala)* produced by its various properties are summarized below:

Khadiradi yoga is mainly having *Tikta* and *Kashaya rasa* with *Laghu* and *Ruksha guna*.

Tikta rasa does *Ama pachana*, reduces *agnimandya* and thus relieving the *srotoavarodha*.

It does *Lekhana* and *shoshana* of *kapha, meda, pitta* and *kleda*. Thus relieving the *sanga* in *medovahasrotas*.

It is *Sthulahara* having *ruksha* and *laghu guna*.

Kashaya rasa also does *shoshana* of *kapha, pitta* and *kleda* thereby reducing the *sanga* in *medovahasrotas*. At the same time its *guru* and *sheetha guna* decreases

thikshnagni caused by *avritha vata* in *koshtha*.

Laghu guna causes *Lekhana*, *Karshana* and decreases *Kapha dosha*.

Rooksha guna also reducing *kapha* and causes *kharatva* which helps in reducing *meda*. *Khadiradi Yoga* also does *anulomana* as *Triphala* being one of its ingredient which is *Tridosha shamaka*. Thus bringing normalcy of three *dosha* as well.

Madhu being *Anupana* also having *kashaya rasa*, *rooksha guna*. It is having *medhohara* and *lekhana karma*.

Effect of Treatment

The assessment was made by adopting the standard methods of scoring the parameters which were made for the study. It included the assessment of *Chalaspik*, *Chalaudara*, *Chalasthana*, *Uthsaha haani*, *Dourgandhya*, *Athikshudha*, *Athhipipasa*, *Kshudrashwasa*, *Nidhraadikhya*, *Dourbalya*, *Angashaitilya*, *Snigdhagata*, *Swedaadikya*, *Krichravayavaya*, *Weight*, *B.M.I*, *Girth Measurements of Chest*, *Abdomen*, *Hip*, *Mid-Thigh*, and *Mid-Forearm*

Effect on Chalaspik: Percentage of effect on *Chalaspik* is 0% and is statistically not significant.

Chalaudara: Percentage of effect on *Chalaudara* is 6.7% and is statistically not significant.

Chalasthana: Percentage of effect on *Chalasthana* is 0% and is statistically not significant.

Uthsaha haani: Percentage of effect on *Uthsaha haani* is 53.40% and is statistically very highly significant.

Dourgandhya: Percentage of effect on *Dourdandhya* is 48.24% and is statistically very highly significant.

Athikshudha: Percentage of effect on *Athikshudha* is 60.91% and is statistically very highly significant.

Athhipipasa: Percentage of effect on *Athhipipasa* is 76.21% and is statistically highly significant.

Kshudrashwasa: Percentage of effect on *Kshudrashwasa* is 61.16% and is statistically very highly significant.

Nidhraadikhya: Percentage of effect on *Nidhraadikhya* is 60.88% and is statistically very highly significant.

Dourbalya: Percentage of effect on *Dourbalya* is 70% and is statistically very highly significant

Angashaitilya: Percentage of effect on *Angashaitilya* is 58.50% and is statistically significant.

Snigdhagata: Percentage of effect on *Snigdhagata* is 44.67% and is statistically significant.

Swedaadikya: Percentage of effect on *Swedaadikya* is 62.03% and is statistically very highly significant.

Krichravayavaya: Percentage of effect on *Krichravayavaya* is 0% and is statistically not significant.

Weight: Percentage of effect on *Weight* is 4.60% and is statistically very highly significant.

B.M.I: Percentage of effect on *B.M.I* is 4.64% and is statistically very highly significant.

Girth Measurements of Chest: Percentage of effect on *Girth measurements of Chest* is 0.25% and is statistically highly significant.

Girth Measurements of Abdomen: Percentage of effect on *Girth measurements of Abdomen* is 0.61% and is statistically very highly significant.

Girth Measurements of Hip: Percentage of effect on *Girth measurements of Hip* is 0.05% and is statistically significant.

Girth Measurements of Mid-Thigh: Percentage of effect on *Girth measurements of Mid-Thigh* is 0.11% and is statistically significant.

Girth Measurements of Mid-Forearm: Percentage of effect on *Girth measurements of Mid-Forearm* is 0.63% and is statistically highly significant.

Treatment Results:

In case of *Sthaulya*, Overall Effect of treatment is 46.07%.

Conclusion

It is found that the trial drug *Khadiradi yoga* with *madhu* is having remarkable action against *Sthaulya* with all parameters & Overall effect of treatment was 46.07% even after *stholya* been said as *krichrasadhya*

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