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Journal of Preventive Medicine and Holistic Health

Journal homepage: <https://www.jpmmh.org/>

## Case Report

# Efficacy of *Abhaya* (*Terminalia chebula*) and exercise in management of obesity (*Sthaulya*) — A case report

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### ARTICLE INFO

#### Article history:

Received 07-07-2021

Accepted 11-08-2021

Available online 29-11-2021

#### Keywords:

Obesity

*Sthaulya*

Santarpanjanyaavikar

Medoroga

Lifestyle disorder

### ABSTRACT

Obesity or *Sthaulya* is one of the lifestyle disorders rapidly increasing in the community; due to rigorously changing dietary habits and behavioural pattern. *Sthaulya* is a state of increased *vikrutvrudhi* of *medodhatu* i.e. abnormal and/or excessive fat accumulation that may impair health of an individual. A married woman aged 29 years, presented to the clinic with complaint of infertility, loss of appetite and increased body weight. Regular walking exercise, *Abhaya choorna* as medicine along with counseling for diet restrictions made her lose 7.15% of her body weight with BMI reduction up to 2.94 units. Obesity is a public health problem with multiple risk factors and so its management is also very complex.

**Key Message:** Essential calorie intake coupled with appropriate adequate physical exercise and proper adherence to Ayurved guidelines for *Dinacharya* (daily regimen) can reduce rising problem of obesity in society.

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## 1. Introduction

*Sthaulya* (obesity) is a state of the increased *medodhatu* (fatty tissue).<sup>1</sup> India is currently witnessing rising number of people who are obese. Many among the Indian population have started relying on processed food that contain a huge percentage of trans-fat, sugar and other unhealthy and artificial ingredients. *Sthaulya* is one such lifestyle disorder. Sedentary lifestyles are leading people to silent self-destruction, making one in every five Indian men and women obese. It has reached epidemic properties globally. 39% of adults in the world are overweight. One-in-five children and adolescents, globally, are overweight. In Ayurveda, obesity has been described as *Sthoulya* or *Medoroga* in *Santarpanotha* Vikara. i.e the disease caused by over nourishment.<sup>2</sup> *Kapha* which is heavy and dense in

nature abnormally accumulates in weaker channels of the body, causing their blockage.<sup>3</sup> Metabolic disturbances in an obese individual is *Medodhatu* caused mainly due to excess intake of *Madhura* and *Snigdha Ahara*.<sup>4</sup> *Nidana* (causative factors) of *Sthoulya* can be classified as *Aharatmaka Nidana*, *Viharatmaka Nidana*, *Manasika Nidana* and *Anyana Nidana*.<sup>5</sup> Acharya Charaka has mentioned *Guru* (heavy to digest) and *Apatarpana* (with no or less nutrition value) diet as treatment for *Medoroga*.<sup>6</sup>

## 2. Case History

Research methodology- This case report is the part of clinical study conducted for post graduate study. Approval for clinical trial was obtained from the scientific committee and Institutional Ethics committee (No: DPU/455-21/2019) and was also registered for CTRI in Feb 2021. There is no conflict of interest with respect to present work.

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**Table 1:** Classification of overweight and obesity by BMI, waist circumference, and associated disease risk.<sup>7</sup>

Terminology	BMI Kg/m <sup>2</sup>	Disease Risk* (Relative to Normal Weight and Waist Circumference)	
Under Weight	<18.5	Men ≤40 inches (≤ 102 cm) Women ≤ 35 inches (≤ 88 cm)	> 40 in (> 102 cm) > 35 in (> 88 cm)
Normal Weight	18.5-24.9	-	-
Over Weight	25-29.9	-	-
Obesity (class I)	30-34.9	Increased	Increased
Obesity (Class II)	35-39.9	High Very High	Very High Very High
Morbid Obesity (Class III)	>40	Extremely High	Extremely High

**Table 2:** Personal history general examination of patient before starting the treatment.<sup>8</sup>

Sr. No.	Parameter	Observed Values
1	B. P	120/80 mm of hg
2	Pulse	78 /min
3	Ht. (Height)	143 cm
4	Wt. (Weight)	84 kg
5	BMI (Body Mass Index)	41.08 kg/m <sup>2</sup>
6	C.C (Chest Circumference)	110 cms
7	A.C (Arm Circumference)	112 cms
8	M.A.C (Mid Arm Circumference)	Rt hand – 33 cm, Lt hand – 34 cm
9	M.T.C (Maximum Thigh Circumference)	Rt leg – 60 cm, Lt leg – 58 cm
10	W.C (Waist Circumference)	110 cm
11	H.C (Hip Circumference)	132 cm
12	Ahara	Mixed diet, Bakery products
13	Vihara	Avyayam, Diwaswap, Sedentary lifestyle
14	Appetite	Less
15	Bowels	Regular, Normal consistency, twice per day
16	Micturition	Normal, 5-6 times in a day,
17	Sleep	Good sound sleep
18	Habits	Fond of bakery items, junk food and curried items

(Ht- Height, Wt- Weight, BMI- Body mass index, C.C- Chest circumference, A.C- Arm circumference, M.A.C -Mid arm circumference, M.T.C- Maximum thigh circumference, W.C- Waist circumference, H.C-Hip circumference)

**Table 3:** History of biochemical laboratory investigation

Sr. No.	Parameter	Observed Values
1	HB	13.2 gm%
2	W.B.C	9000 cells/cu mm
3	E.S.R	20 mm/hr
4	Neutrophils	59%
5	Lymphocytes	42%
6	Monocytes	38%
7	Eosinophils	01%
8	Platelets	2.84 lakh cells/cu mm
9	Total RBC Count	4.50 millions/cu mm
10	Blood urea	15.3 mg/dl
11	Serum Creatinine	0.8 mg/dl

**Table 4:** Lipid profile

Sr. No.	Parameter	Observed Values
1.	Total Cholesterol	168.0 mg/dl
2.	H.D.L Cholesterol	48 mg/dl
3.	L.D.L Cholesterol	85.0 mg/dl
4.	Triglycerides	145 mg/dl
5.	V.L.D.L Cholesterol	24.8 mg/dl

**Table 5:** Scheduled diet and daily routine during treatment

Aahar and Vihara	Do's	Don't's
Ahara	1. Chapatti prepared with Yava (barley), 2. MoongaDaal (green gram) with or without husk or sprouted or TuarDaal in food. 3. Use of fruits like papaya, orange, sweet lemon, coconut water etc.	Heavy fried food, Refined foods such as white flour, Potatoes, Curd, milk Fermented and bakery items.
Vihara	1.Waking up early morning, Regular 2.exercise- 30 min. Walking	1.excess sleep 2.sedentary life style

**Table 6:** Assessment of anthropometry changes before and after treatment

Observation	Before Treatment	After Treatment
WT. (Weight)	84 kg	78 kg
BMI (Body Mass Index)	41.08 kg/m <sup>2</sup>	38.14 kg/m <sup>2</sup>
A.C (Arm Circumference)	122 cm	115 cm
M.A.C (Mid Arm Circumference)	Rt hand – 33 cm Lt hand – 34 cm	Rt hand – 30 cm Lt hand -32 cm
M.T.C (Maximum Thigh Circumference)	Rt leg – 58 cms Lt leg – 56 cms	Rt leg – 55 cm Lt leg – 57 cm
W.C (Waist Circumference)	123cms	116 cms
H.C (Hip Circumference)	132 cms	128 cms
W/H (Waist Hip Ratio)	0.93	0.91

(Wt- Weight, BMI- Body mass index, A.C- Arm Circumference, M.A.C -Mid arm circumference, M.T.C - Maximum thigh circumference, W.C- Waist circumference, H.C- Hip circumference, W/H-Waist Hip ratio)

A 29-year-old female patient attended the OPD of the hospital with complaint of Infertility along with *Bharavruddhi* (increase in weight) in the last 5 years and symptoms of *Kshudrashwas* (difficulty in breathing while doing normal day to day chores), *Daurbalya* (general weakness), *kshudhaalpata* (loss of appetite) but cravings for fast food, bakery items etc. Also, she had complaints about the menstrual cycle like- regular but with scanty menstrual flow since last 1.5 years. Patient had no history of hypertension, diabetes mellitus, bronchial asthma, hypothyroidism or PCOS. But she had a family history of increased weight and obesity from her maternal side.

### 2.1. Assessment

*Ashtavidh Pariksha*, *Dashvidha Pariksha* (Ayurvedic methods for patient examination), Systemic and general physical examinations with anthropometry of the patient was done. Biochemical investigations showed normal Haematological report. Considering the Clinical examination, BMI and body girth measurements at defined parts, patient was diagnosed as obese class III.

The assessment was planned on weekly basis for three weeks.

### 2.2. Goal settings

1. Medicine — Abhayachurna 3gm dose given two times before meal with anupana of Honey
2. Behavioral modification — as walking exercise for 30 minutes daily; as a part of treatment
3. Dietary modification -as minor changes in diet explained in table no 5
4. The patient was followed every week, up to 21 days. The goals set for assessment were specific, measurable, and achievable.

### 3. Result

1. *Bharavruddhi* (increase in weight)-On the very first day, 11-02-2021 when the treatment started the weight of the patient was 84kg, which got reduced to 78 kg. That means there was a reduction of weight by 6 kg (7.15%) after 21 days. Considerable reduction in BMI from 41.08 kg/m<sup>2</sup> to 38.14 kg/m<sup>2</sup> was noted. M.A.C. and M.T.C. showed average reduction by 2-3 cm. There was considerable reduction of 7 cm in waist circumference.
2. *Kshudrashwas* (breathlessness due to exertion)- There was a considerable reduction in *Kshudrashwas* from

difficulty in breathing while doing normal day to day chores to only while doing strenuous work.

3. *Daurbalya* (general weakness)- This complaint also reduced within 21 days. Gradually patient started feeling fresh and energetic.
4. *Kshudhaalpata* (loss of appetite)-appetite increased along with decreased cravings for fast food and bakery items.
5. Menstrual problems- patient had her menstrual period during the course of treatment. This month's menstrual flow was improved as compared to her last 1.5 years menstrual cycles, and she was feeling relaxed and fresh after her periods.

All the parameters showed appreciable reduction after following the treatment protocol, which underlines the efficacy of ayurvedic management of Obesity.

#### 4. Discussion

In this case, patient was consuming diet predominant in sweet taste, oily, junk food and bakery items. Sedentary lifestyle along with day-sleep was major factors in her daily routine. All these Aaharaj (guru, snigdha and abhishyandi), Viharaja (external causes) and Manasa (mental) factors are associated with *kaphadoshavridhi* which ultimately resulted in *srotorodha* and *medodhatvagnimandya* and thereby into excessive increase in *medadhatu*. *Srotorodh* results in confinement of *vaat* dosh to *koshta* and causes *jatharagnivridhi*. This again contributes to *medovruddhi*.<sup>9</sup> Initially there was *angagaurav* as *purvaroop* (*prodromal symptom*), but then there was gradual enlargement of *sphik* (*gluteal region*) and *udar*(*abdomen*) started, along with *alasya* (lethargy) *atikshudha* (*excess of hunger*), *ati-pipasa* (*excess of thirst*) etc. These symptoms increased gradually due to continuous consumption of *santarpanjanya* (over nourishing) aahar and vihar.

In this case *Samprapti* (*pathogenesis*) of the disease was found to be as follows- *Udbhavasthana* of *sthaulyaroga* was *aamashaya* while *vyaktasthana* was *sarvasharir* and *adhishthana* was *Medodhatu*. This disease is *Bahya*-*rogamargagata*. Here condition of *jatharagni* was *tikshna* while that of *dhatwagniwasmada*. predominance was there and *rasa*, *mamsa*, *meda* wereinvolvedas *dushyas*. *Rasavaha* and *medovahasrotas* are in volved in this case and *sanga* type of *srotodushti* is noted. Considering all these points *Acharyas* have enlisted this disease in *krucchrasadhya* (*difficult to treat*) type.

After conducting trial and studying results it can be concluded that administration of *Abhayachorna* in 3 gms dose, two times before meal with *anupana* (*adjuvant*) of

honey and *vyayam* as a daily walking exercise minimum 30 minutes as a part of treatment gave expected outcome of weight reduction.p.<sup>10</sup> The drug *abhayachorna* has *laghu* and *rukshaproperties* which are opposite to the *gunas* of *Sthaulya* and *Vyayam* brings about lightness in the body and alleviation of *kapha* dominant *doshas*. Regular walking exercise, *Abhayachorna* as medicine along with counselling for diet restrictions made her lose 6 kg of her body weight with BMI reduction from 41.08 kg/m<sup>2</sup> to 38.14 kg/m<sup>2</sup>. Appropriate adequate physical exercise and proper adherence to *Ayurved* guidelines for *Dinacharya* (daily regimen) can reduce rising problem of obesity in society.

#### 5. Source of Funding

None.

#### 6. Conflict of Interest

None.

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**Cite this article:** Kedar SS, Joshi MV, Prabhudesai TR. Efficacy of *Abhaya* (*Terminalia chebula*) and exercise in management of obesity (Sthaulya) — A case report. *J Prev Med Holistic Health* 2021;7(2):137-140.