

# Journal of Ayurveda and Integrated Medical Sciences

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### Obesity management through Ayurveda - A Case Study

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#### ABSTRACT

Lifestyle disorders are one of the biggest threats for the population living unhealthy lifestyle. Sthoulya (Obesity) is one such disorder which creates lot of physical as well as mental disorder to the sufferer. Due to changing lifestyle, comforts and dietary habit lots of individuals changed their life totally. Obesity is a growing disease in developed and developing countries. Prevalence is drastically hike in past few years. Ayurveda, the science of life with which we can manage and control lots of lifestyle disorders. Focusing on dietary and lifestyle management along with treatment, we can overcome the hazards of obesity which is growing in a uncontrolled manner. The available data is based on the clinical findings only. Aim and objective: To assess the effect of "Guru Cha Atarpanam Chikitsa" in the management of Sthoulya. Setting: Swastharakshana evam Yoga, OPD and IPD, SDMCAH, Hassan. Method: Udwarthana, Parisheka, Shamana Aushadhis, Ahara, and Vihara was followed within the treatment duration and effect of treatment was assessed before and after treatment, advised for follow up. Results: The treatment adopted is effective in the management of Sthoulya and to improve the quality of life.

Key words: Obesity, Sthoulya, Atarpanam Chikitsa, Udwarthana, Parisheka.

#### **INTRODUCTION**

Obesity may be defined as an abnormal growth of the adipose tissue due to an enlargement of fat cell size or an increase in fat cell number or a combination of both.<sup>[1]</sup> Obesity is often expressed in terms of body mass index (BMI).

Prevalence of obesity is perhaps the most prevalent form of malnutrition. As a chronic disease, prevalent in both developed and developing countries, and affecting children as well as adults, it is now so common that it is replacing the more traditional

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Submission Date: 12/08/2017 Accepted Date: 25/08/2017

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.v2i4.9377

public health concerns including under nutrition. It is one of the most significant contributors to ill health. For industrialized countries, it has been suggested that such increase in body weight have been caused primarily by reduced levels of physical activity rather than by change in food intake or by other factors. It is extremely difficult to assess the size of the problem and compare the prevalence rates in different countries as no exact figures are available and also the definitions of obesity are not standardized. [2]

Overweight and obesity are the fifth leading risk of global deaths. Worldwide, obesity has more than doubled since 1980. In 2008, more than 1.4 billion adults, 20 years and older, were overweight. Of theses over 200 million men and nearly 300 million women were obese. In 2012, more than 40 million children under 5 years of age were overweight. Close to 30 million overweight children are living in developing and 10 million in developed countries. [3]

Overweight prevalence was higher among females than males and in urban areas than in rural areas. Low prevalence was recorded among lower level of education and in people whose occupation was connected with agriculture or manual work.<sup>[4]</sup>

In India, 1.3 percent males and 2.5 percent females aged more than 20 years were obese in the year 2008. [5]

Obesity is a key risk factor in natural history of other chronic and non communicable disease, the typical time sequence of emergence of chronic disease following the increased prevalence of obesity is important in public health planning. The first adverse effect of obesity to emerge population in transition are hypertension, hyperlipidaemia, and glucose intolerance, while coronary heart disease and the long-term complication of diabetes, such as renal failure begin to emerge several years later. [6]

It is matter of time before same mortality rates for such diseases will be seen in developing countries as those prevailing 30 years ago in industrialized countries.<sup>[7]</sup>

In Ayurveda, a person having heaviness and bulkiness of the body due to extensive growth especially in Udaradi region is termed as "Sthoola" and this Bhava (state) of Sthoolata is called as Sthoulya. [8] Atishtoola has been defined as a person who on account of the inordinate increase of fat and flesh is distinguished with pendulous buttocks, belly and breasts and whose increased bulk is not matched by a corresponding increase in energy. [9] Sthoulya is the disease of Medodhatvagni Vikriti. The good and potent Dhatvagni is responsible for the maintenance of healthy Dhatus through proper metabolism at Dhatu level. Due to specific Dhatvagni Vikruti (Mandya) there will be improper formation and accumulation of respective Dhatus. Medovriddhi manifesting as Sthoulya is one such disorder. [10] Management with Ayurvedic principle of "Guru Cha Atarpanam Chikitsa" provides a good result in Sthoulya.

#### **CASE STUDY**

A 59 year old female patient came to OPD of *Swastharakshana evam Yoga* with complaints of increased body weight since 8 years, associated with fatigue and pain in bilateral knee joints. Past history revealed that patient was a known case of hypertension since 5 years under medication (Telma H). No history of Diabetes Mellitus, Bronchial Asthma,

Hypothyroidism. There is a family history of increased weight and obesity from her maternal side. *Astavidha Pariksha*, *Dashavidha Pariksha*, systemic and general physical examinations with anthropometry of the patient was done. Investigations showed normal Hematological report but changes were seen in the biochemical tests with special reference to lipid profile. Considering the examinations, BMI (>29.99Kg/m2), lab investigation findings, patient was diagnosed as obese Class III.

### International Classification of Adult Underweight, Overweight and Obesity according to BMI<sup>[11]</sup>

Classification	BMI (kg/m²)	
	Principle cut-off point	Additional cut-off points
Underweight	< 18.50	< 18.50
Severe Thinness	< 16.00	< 16.00
Moderate Thinness	16.00 - 16.99	16.00 - 16.99
Mild Thinness	17.00 - 18.49	17.00 - 18.49
Normal Range	18.50 - 24.99	18.50 - 22.99 23.00 - 24.99
Overweight	>= 25.00	>= 25.00
Pre Obese	25.00 - 29.00	25.00 - 27.49 25.50 - 29.99
Obese	>= 30.00	>= 30.00
Obese Class I	30.00 - 34.99	30.00 - 32.49 32.50 - 34.49
Obese Class II	35.00 - 39.99	35.00 - 37.49 37.50 - 39.99
Obese Class III	>= 40	>= 40

#### **Setting**

OPD (Swastharakshana evam Yoga) and IPD of Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka.

#### Method

Atarpanam Chikitsa was followed and assessment was done before and after treatment of the patient.

#### ISSN: 2456-3110

#### **CASE REPORT**

### July-Aug 2017

#### Ashtavidha Pareeksha

Naadi	Prakruta
Mala	Niraama Mala, Prakruta
Mootra	Prakruta
Jihwa	Alipta
Shabda	Prakruta
Sparsha	Anushna Sheetha
Drik	Prakruta
Aakruthi	Sthoola

#### Dashavidha Rogi Pareeksha

Prakrithi	Dwandaja (Kapha pitta)
Vikrithi	Kapha vata
Dushya	Rasa, Mamsa, Meda
Sara	Madhyam
Samhanana	Madhyam
Satva	Avara
Ahara Shakti	Pravara
Vyayama Shakti	Madhyam
Satmya	Sarvrasa
Vaya	Madhyam

#### Nidana Panchaka

Nidana	
Ahara	Madhura, Snigdha, Sheetahara like Payasam, Shaali, Yava, Godhuma, Sharkara,
Vihara	Avyayama, Divaswapna

Porvaroopa	Nothing significant
Roopa	Increased body weight
	Atitrishna
	Atikshudha
	Swedadhikya
	Alasya
Upshaya	Nothing significant
Anupshaya	Santarpana ahara

## Personal history and Anthropometry measurement of the patient before treatment.

Appetite	Good
Bowel	Regular once Sometimes Constipated
Micturition	Adequate (5-6 times/day, 1-2 times/night)
Sleep	Sound but disturbed since 3 months due to knee joint pain
Habits	Sleeping, sitting for long hours, drink more water after food, eating fried items in more quantity.
Ahara	Vegetarian
Vihara	Sedentary, Avyayama, Divaswapna (1-2 hours)
Blood Pressure	130/90 mmHg
Pulse	80/minute
Height	150 cm
Weight	94 kgs
вмі	42 kg/m <sup>2</sup>
Chest Circumference	113 cm

#### ISSN: 2456-3110

#### **CASE REPORT**

#### July-Aug 2017

Abdomen Circumference	119 cm
Mid Arm Circumference	Right hand – 36 cm Left Hand – 35 cm
Mid Thigh Circumference	Right Leg – 62 cm, Left Leg – 60 cm
Waist Circumference	118 cm
Hip Circumference	127 cm

#### **Physical Examination**

Appearance	Bulky
Built	Endomorphic
Nourishment	Over nourished
Gait	Normal
Pallor	Absent
Icterus	Absent
Clubbing	Absent
Cyanosis	Absent
Edema	Absent
Lymphadenopathy	Absent

#### **Systemic Examination**

Central Nervous System	Conscious to time, person and place. Oriented
Respiratory System	NVBS Heard Bilaterally
Cardio Vascular System	S1S2 Heard
Per Abdomen	Soft NAD

#### **Laboratory Investigation**

НВ	12.4 gm%
W.B.C.	6,400 Cells/CMM
E.S.R.	38 mm/hour

52%
44%
01%
03%
2.48 Lakhs/CMM
4.51 Millions/CMM
99.8 mg/dl
23.9 mg/dl
1.0 mg/dl

#### **Haemogram Report**

P.C.V.	39.6%
M.C.V.	87.8%
M.C.H.	29.9%
M.C.H.C.	34.1%
R.D.W.	44.0 fL

#### **Lipid Profile**

Total Cholesterol	203.1 mg/dl
H.D.L. Cholesterol	58.6 mg/dl
L.D.L. Cholesterol	114.6 mg/dl
Triglycerides	148.0 mg/dl
V.L.D.L. Cholesterol	29.6 mg/dl

**Ultrasound (abdomen and pelvis) and ECG** reports showed Normal study, there were no significant changes noted.

#### Samprapti of Sthoulya

Due to the *Nidana Sevana* specially *Madhura Rasa, Snigdha Ahara, Avyayama, Divaswapna, Kevala Medo Dhatu Vriddhi* takes place, which leads to *Sroto Avarodha* by *Medas* and *Vayu* restricted to *Koshta* and *Jatharagni Vriddhi* takes place (due to which

consumption of food increases) and *Sthoulya* (*Atitrishna*, *Atikshudha*, *Swedadhikya*, *Alasya*) occurs.

#### Samprapti Ghataka

Udbhava Sthana	Amashaya
Vyakta Sthana	Sarva Shareera
Adhisthana	Medo Dhatu
Roga Marga	Abhyantara
Agni	Teekshagni
Dhatwagni	Manda
Dosha	Kapha and Vata
Dushya	Rasa, Mamsa and Meda
Srotas	Medovaha, Rasavaha
Sroto Dushti	Sanga
Sadhya Asadhyata	Krichrasadhya

Considering all the examinations done and reported as in the above mentioned tables the disease was understood and diagnosed as *Sthoulya*. After assessing all the parameters of the patient with *Satva*, *Agni* and *Bala*, *Sarvanga Udwartana* was started with *Udwartana Choorna* which contains *Kulatha*, *Yava*, *Triphala*, *Mudga*, *Methi* and *Sarshapa*. *Sarvanga Parisheka* with *Dashmoola Qwatha*. *Janu basti* with *Murveena Taila*. Along with therapy *Shamana Ayushadhi* was given.

### Treatment schedule adopted from 10-07-2017 to 19-07-2017.

Day	Treatment	Observation
10-07- 2017	Sarvanga Udwartana Sarvanga Parisheka Janu Basti Cap Decrine Plus 2 – 0 – 2 [B/F]	Appetite - Good Bowel - Regular Passed Micturition - Normal

	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of	Sleep - Disturbed
	warm water after food	Weight - 94 kgs
	Yoga & Pranayama	Height - 150 cm
	Physiotherapy	BMI - 42 kg/m <sup>2</sup>
	Walking	
	Pathyahara	
11-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
		Micturition -
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Normal
	Rasnaeranda Kashaya 15	Sleep - Disturbed
	ml [BD] with 30 ml of	
	warm water after food	
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
12-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Disturbed
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
13-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	<u> </u>	

	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
14-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka Janu Basti	Bowel - Regular Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
15-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
16-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition- Normal

	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
17-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka Janu Basti	Bowel - Regular Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
18-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal
	Rasnaeranda Kashaya 15 ml [BD] with 30 ml of warm water after food	Sleep - Sound
	Yoga & Pranayama	
	Physiotherapy	
	Walking	
	Pathyahara	
19-07-	Sarvanga Udwartana	Appetite - Good
2017	Sarvanga Parisheka	Bowel - Regular
	Janu Basti	Passed
	Cap Decrine Plus 2 – 0 – 2 [B/F]	Micturition - Normal

Rasnaeranda Kashaya 15	Sleep - Sound
ml [BD] with 30 ml of	Weight - 88 kg
warm water after food	Weight ooks
Yoga & Pranayama	Height - 150 cm
roga arranayama	BMI - 39 kg/m <sup>2</sup>
Physiotherapy	_
Walking	
Pathyahara	

Dose of *Rasnaeranda Kashaya* was 15 ml with 30 ml of hot water twice daily after meal. Diet also recommended from hospital *Pathyahara* for patient which is totally based on her *Agni* and *Bala* and follows the principle of *Guru Ahara* and *Atarpaka* in nature.

### Scheduled diet for patient during treatment as follows

10-07-2017 to 12-07-2017	Amahara Kashaya 50 ml Mudgamlaka Yusha 200 ml Methika Sidha Takra 100 ml Dashmoola Yavagu 250 ml Vegetable Soup 100 ml Khichadi 300 gm
13-07-2017 to 15-07-2017	Jeeraka Jala 100 ml Peya 200ml Methika Sidha Takra 100 ml Dashamoola Yavagu 250 ml Fruit Papaya 100 gm 2 Yava Rotika and Boiled Vegetable 300 gm
16-07-2017 to 19-07-2017	Amahara Kashaya 50 ml Mudgamlaka Yusha 200 ml Methika Sidha Takra 100 ml Dashamoola Yavagu 250 ml Vegetable Soup 100 ml Khichadi 300 gm

#### Yogasana, Pranayama and Physiotherapy

Yogasana advised	Description	
Warm Up Exercise	Loosening exercise :	
	Neck rotation clock and anti clockwise	
	Eyeball rotation clock and anti clockwise	
	Shoulder joint forward and backward rotation	
	Wrist joint clock and anticlockwise rotation	
	Chest twisting towards right and left side	
	Hip joint rotation clock and anticlockwise	
	Knee joint rotation clock and anticlockwise	
	Ankle joint rotation clock and anticlockwise	
Surya Namaskar	11 times	
Standing Series Yogasana	Tadasna, Vrikshasana, Ardha Katichakrasana, Trikonasana (5 times each)	
Sitting Series Yogasana	Bhadrasana, Gomukhasana, Ardha Matsyendriyasana (5 times each)	
Supine Series Yogasana	Pavanmuktasana, Naukasana (5 times each)	
Prone Series <i>Yogasana</i>	Bhujangasana, Shalabhasana, Makarasana (5 times each)	
<i>Pranayama</i> Advised	Om Chanting (5 times)	
	Anuloma Viloma (10 times)	
	Rhastrika (10 times)	
	Bhastrika (10 times) Bhramari (10 times)	
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ISSN: 2456-3110

	Sheetakari (5 times)	
Physiotherapy	Tummy Twister - 10 Minutes	
	Cycling Stationary - 15 Minutes	
	Walking - 20 Minutes	

On the completion of above prescribed treatment for 10 days, once again anthropometric measurements were taken to assess the changes in the parameters.

### Anthropometric measurement before and after treatment.

Observation	Before Treatment	After Treatment
Weight	94 kg	88 kg
вмі	42 kg	39 kg
Chest Circumference	113 cm	107 cm
Abdomen Circumference	119 cm	112 cm
Mid Arm Circumference	Right Hand- 36 cm, Left Hand- 35 cm	Right- 34 cm, Left- 33 cm
Mid Thigh Circumference	Right Leg- 62cm, Left Leg- 60cm	Right- 59 cm, Left- 59cm
Waist Circumference	118 cm	113 cm
Hip Circumference	127 cm	121 cm

#### **RESULTS**

10-07-2017 patient was admitted with a weight of 94 kilograms and BMI of 42 kg/m² which got reduced to 88 kilograms on date of discharge 19-07-2017. The result showed that total 6kg of weight reduction takes place within 10 days of treatment. Patient was discharged on 20-07-2017 with advised to continue shamana aushadhis, diet chart, yogasana, pranayama

CASE REPORT July-Aug 2017

and brisk walk for 30 days. Follow up done after 30 days.

#### Medicines adviced on dicharge

- 1. Capsule Decrin plus 2-0-2 [b/f],
- 2. Tablet Simhanada Guggulu 2-0-2 [after food]
- 3. Rasnaeranda kashaya 15 ml with 30 ml of warm water twice daily after food.
- 4. *Sandhilin* Liniment External Application on Bilateral Knee joints twice daily.

#### **DISCUSSION**

According to Ayurveda the patient was diagnosed as a case of Sthoulya, predominantly Kapha Vata as Vikrita Doshas and Rasa, Mamsa, Medha as Vikrita Dushyas. Patient adopted sedentary life style, lack of exercises and day sleep with excess intake of Madhura Snigdha Ahara with improper dietary practices. Clinically patient presented with signs and symptoms such as increased body weight, fatigue and joint pains. Considering Sthoulya to be the Santarpana Janya Vyadhi and following the principle of "Guru Cha Atarpanam Chikitsa" the line of treatment mainly includes Udwarthana (lekhan karma). Udwarthana is indicated in Vata and Kapha disorders by causing liquefaction of Kapha and Meda (fat), promotes the metabolism and removes Gourava, Tandra, Kandu, Malanashaka, Arochaka and Swedabibhatsata Hanti (excessive sweat). [12]. Parisheka it is a type of Sagni Sweda and Drava Sweda which is indicated in Vata or Vata-Kapha disorders, [13] decoction of Dashmoola Qwath was used here, as Dashmoola have property to pacify Vata Dosha and normalizes Kapha Dosha. Janu Basti was used due to its property of reducing the painful condition of knee joints like osteoarthritis, ligament injuries, etc. Shamana Aushadis helps in normalize *Tridoshas*<sup>[14]</sup> and also help in reduces Medas. Yogasanas and Pranayama with other physical exercises provide lightness in body, energy expenditure and normalize the fat metabolism. Ahara based on Guru and Atarpaka properties was given to the patient. Significant changes was observed, patient was advised to continue the oral medications for a month and was asked to continue the healthy diet

and *Yogasana-Pranayama* regularly and informed to come for follow up.

#### **CONCLUSION**

Sthoulya (obesity) is a disease where continuous lifestyle and dietary habits should be observed and change for prolong results along with treatment modalities. Based on the signs and symptoms of disease selection of treatment procedure was selected and scheduled diet with physical exercises should be recommended to the patient. Regular follow up and physical activity should be maintained once optimum weight should be maintained.

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**How to cite this article:** Dheeraj Kumar Tyagi, Shivakumar. Obesity management through Ayurveda - A Case Study. J Ayurveda Integr Med Sci 2017;4:320-328.

http://dx.doi.org/10.21760/jaims.v2i4.9377

**Source of Support:** Nil, **Conflict of Interest:** None declared.

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