



CASE STUDY ON HERBAL FORMULA IN THE MANAGEMENT OF *STHAULYA* (OVER WEIGHT AND OBESITY)

S. L. G. Sewwandi^{1*}, S. A. M. R. Rupasinghe² and A. A. J. P. Kumara³

¹Graduated (BAMS), Gampaha Wickramarachchi University of Indigenous Medicine, Faculty of Indigenous Medicine, Yakkala, Sri Lanka.

²Graduated (BAMS), Gampaha Wickramarachchi University of Indigenous Medicine, Faculty of Indigenous Medicine, Yakkala, Sri Lanka.

³Professor, Department of Shalya Shalakyas, Gampaha Wickramarachchi University of Indigenous Medicine, Faculty of Indigenous Medicine, Yakkala, Sri Lanka.

***Corresponding Author: S. L. G. Sewwandi**

Graduated (BAMS), Gampaha Wickramarachchi University of Indigenous Medicine, Faculty of Indigenous Medicine, Yakkala, Sri Lanka.

Article Received on 04/02/2023

Article Revised on 25/02/2023

Article Accepted on 15/03/2023

ABSTRACT

Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. Obesity consists a major nutritional health problem in developed and developing countries, which has reached epidemic proportions. Obesity is life threatening disease and obese people are more likely than others to develop risky conditions such as cardiovascular disease, gallbladder disease and certain cancers. Obesity is a leading preventable cause of death worldwide, with increasing rates in adults and children. More than 1 billion people worldwide are obese-650 million adults, 340 million adolescents and 39 million children. This number is still increasing. WHO estimates that by 2025, approximately 167 million people-adults and children will become less healthy because they are overweight and obese. In present research article a case of obesity was taken. The patient was suffering from obesity since 11 years, overweight causing hindrance in day today life activities. *Ayurvedic* treatment employed by us has shown superior result comprising *aushadha*, *vyayama* and restricted diet.

KEYWORDS: over weight, obesity, *Sthaulya*.

INTRODUCTION

According to World Health Organization (WHO) obesity is a condition of abnormal or excessive fat accumulation in adipose tissue to the extent that the health may be impaired. The medical community defined excess weight and its associated health consequences using population based anthropometric measurements like sex specific body weight and height. But clinicians eventually abandoned these in favor of body mass index (BMI), which is a measure of body weight adjusted for height [weight(kg)/ height (m²)]. This measurement is based on the observation that body weight is proportional to the squared height in adults with normal body frames. According to the classification system and obesity guidelines healthy body weight is a BMI between 18.5 and 24.9 kg/m², overweight is between 25.0 and 29.9 kg/m² and obesity ≥ 30 kg/m²^[1].

Both *Ayurveda* and modern aspects defined the disease obesity or *sthaulya*. When waist circumference greater than 102cm in men and 88cm in women it is called central obesity. Life style advice, weight loss diets,

drugs and surgeries are the main focuses of modern Management^[2]. The Modern view describes obesity as abnormal or extensive fat accumulation that negatively affects health^[3].

There is an increased risk for the overweight range for associated medical disorders such as type 2 diabetes mellitus, cardiovascular disease and different types of cancers. The reports estimated that risks of obesity have been shown to range from 5 to 15% for all cause mortality, from -0.2 to 8% for all cancer incidence, from 7 to 44% for cardiovascular disease incidence and from 3 to 83% for type 2 diabetes mellitus incidence^[4].

Since year 1970, adults' global obesity prevalence has nearly tripled and has risen more dramatically in children and adolescents^[5]. Obesity is considered as a pandemic of the present century by the World Health Organization (WHO) and other international organizations. Clinicians can distinguish between metabolically healthy obese (MHO) and metabolically unhealthy obese (MOHO) subjects within the obese population. In MOHO subjects reported in increased blood pressure, hyperlipidemia,

hyperglycemia and hyperuricemia^[6].

According to *Ayurveda* excessive deposition of *medho dhatu* in the body is known as obesity or *athisthaulya*. Different *acharyas* described the state of *sthula* or *sthaulya* in their own way. Obesity which is caused due to *medodhatvagnimandya* is described as *medho roga* or *sthaulya roga*. In the field of *Ayurveda* *ayurvedic* drugs which consists of the property of *medhohara* and *lekhaneya* have been used in the management of obesity. *Thriphala*, *Asana* and *Chitraka* are the herbs that selected from an authentic text, *Rasaratna Samuccaya*, *kshudrarogadi Chikitsithaya* page number 268. The combination of *Haritaki*, *Vibhitaki* and *Amalaki* is known as *Triphala*. Excessive *medha* and serum cholesterol are reduced or decreased by it. *Asana* and *Chitraka* also reduces fat, cholesterol or *medha* in the body^[7].

According to *Ayurveda* *Vruddatraya* and *Laghutraya* described obesity. *Charaka samhita*, *Susruta samhita* and *Ashtanga hrdaya samhita* are included in *Vruddatraya*. According to *Acharya Charaka* the main reasons for obesity are over intake of food, intake of heavy, sweet, cooling, unctuous food, lack of physical exercises, abstinence from sexual intercourse, day sleep, and hereditary^[8]. Successive *dhatu*s are not nourished leading to low vitality and lastly dies being victim of one of the seven diseases like carbuncle, fever, fistula in an abscesses and *vatika* diseases as mentioned in *Susruta samhita*^[9]. *Ashtanga samgraha* described that derangement of *agni* or digestive power lead to production of *ama*. *Agni* of *medha dhatu* is disturbed and blocked the formation of further tissue. Obesity is caused by the accumulation of improperly formed fatty tissue in the body^[10]. *Madhava nidana*, *Sarangadhara samhita* and *Bhavaprakasha* are included in *Laghutraya*. According to *Madhava nidana* when a person's buttocks, abdomen and breasts are beginning to movements during activities due to accumulation of fat in those places in the body is known as obesity^[11]. According to *Acharya Sarangadhara shleshma prakruti* is the characteristic feature of *sthaulya*^[12]. Risk factors, morbidity and other additional behavioral therapies are emphasized more by *Acharya Bhavamishra*^[13].

MATERIALS AND METHOD

The treatment was planned as;

1. *Thriphala churna*-3g *Chitraka churna*-1g *Asana churna*-1g 5g (combination) twice a day with lukewarm water before meal.
2. 5km walking in the morning time
3. *Pathya* (wholesome)- *Yava* (Barley), *Mineri* (Millet), *Bada inguru* (Maize), *Thiringu piti* (Wheat flour) *Apathya* (Unwholesome)- *Dadhi* (curd), tea, fast food, Ghee, Salt and heavy foods.

CASE REPORT

Religion- Buddhism, Education-higher, Occupation-IMO
Marital status-not married, Complains of the patient- A

female patient of age 29 yrs with OPD no 1359 B dated 02.02.2023 in noon time, visited the *Gampaha Wickramarachchi Ayurveda Teaching Hospital*, with the complaint of *sthaulya* (obesity *yakkala*), *Duarbalya* (debility), *Swasa kricha* (shortness of breath), *Ati-kshudha* (excessive eating), *Ati-pipasa* (excessive thirst).

History of present illness- A 29 yrs old female patient who had obesity for 11yrs had used many ideas to reduce weight loss but did not get any relief. For further and better treatment patient approached to *ayurvedic* hospital.

History of past illness- No history of past illness.

Family history-Mother had hyperlipidemia and father has hypertension, Personal history - The patient was non vegetarian in diet. Takes 2 tea cups per day. Normal micturition. *Samyak nidra* (normal sleep)

Dasha vidha pariksha: *Prakruti* (constitution) is *pitta kaphaja*, *Vikruti vata kapha* (imbalanced *vata kapha*), *Meda Sara* (fatty elemental tissue)-*pravara*. *Samhanana* (good compactness of body)-*pravara*, *Pramana* – *madhyama*, *Satmya-madhayama*, *Satva* (good mental constitution)-*pravara*, *Ahara Shakti* (good power of digestion)-*pravara*, *Vyayama Shakti* (less power of exercise)-*avara*, *Yuva* (young age)-29 yrs. *Ashta vidha pariksha*: *nadi*-normal, *mutra*- normal, *mala*-constipated, *jihva*- coated tongue, *shabdha*- adequate, *sparsha*-normal, *druk*- normal, *akruti*- obese built.

Vital examination-pulse rate 80 beats per minute, regular, medium strength, blood pressure 120 systolic and 90 diastolic, body temperature 98.6 F with respiratory rate 28 times per minute in the day time in OPD. Body weight 64kg, height-151cm, so BMI-28.06kg/m².

Systemic examination: consciousness- conscious, Nervous system, cardio vascular system, respiratory system are normal.

Assessment criteria; The assessment criteria of *sthaulya* (obesity) which has described in the different *Ayurvedic* text and applied after some adaptations. A grading scale was used to record the therapeutic effects external dysphonia, excessive perspiration, weakness, polyphagia, polydipsia was graded 0,1,2 and 3 based on severity which is showing in table 1. These parameters assessed by asking questions from the patient and *dharshana pariksha*(inspection).

Table 1: Subjective parameters assessment in *sthaulya*.

Symptoms	0	1	2	3
External dysphonia	No dysphonia	Mild	Moderate	Severe
Excessive perspiration	No perspiration	Mild	Moderate	Severe
Weakness	No weakness	Mild	Moderate	Severe
Polyphagia	No polyphagia	Mild	Moderate	Severe
Polydipsia	No polydipsia	Mild	Moderate	Severe

Treatment plan

The patient was visited on 02.02.2023. The duration of treatment is 30 days. It was finished on the 2nd of march

2023. Internal (oral) medicine and exercise were given which have been shown in table 2.

Table 2: Drugs included in treatment protocol.

Drug	Botanical name
<i>Thriphala</i>	<i>Terminalia chebula (Aralu)</i> <i>Terminalia bellerica (Bulu)</i> <i>Emblica officinalis (Nelli)</i>
<i>Chitraka</i>	<i>Plumbago indica (Rathnitul)</i>
<i>Asana</i>	<i>Pterocarpus marsupium (Gammalu)</i>

RESULTS

The effect of *Ayurvedic* medicine on the subjective parameter of *Sthaulya* changes from zero to seven days, fourteen days and finally thirty days was 15 to 10 to 6 to 3. Total points were 15 and before treatment it was 100% and after treatment it became lower side 66.67% after 7 days, 40% after 14 days and 20% after 30 days.

The effect of *Ayurvedic* medicine on the objective parameter of *Sthaulya* (obesity) changes from 64kg weight to 63.7kg to 63.5kg to 63kg in 7 days, 14 days and finally 30 days and BMI changes from 28.06 to 27.93 to 27.84 to 27.63 in 7 days, 14 days and finally 30 day. The measurements are also reduced slightly.

Table 3: The effect of *ayurvedic* drugs on the subjective parameter.

symptoms	Before treatment	During treatment		After treatment 30 days
		7 days	14 days	
External dysphonia	3	1	0	0
Excessive perspiration	3	2	2	1
Weakness	3	2	1	0
Polyphagia	3	3	2	1
Polydipsia	3	2	1	1

Table 4: The effect of *ayurvedic* drugs on objective parameter of *sthaulya*.

Symptoms and measurements	Before treatment	During treatment		After treatment 30 days
		7 days	14 days	
Weight	64kg	63.7kg	63.5kg	63kg
BMI	28.06	27.93	27.84	27.63
Right mid arm circumference	28cm	28cm	27.5cm	27cm
Chest circumference	99cm	99cm	99cm	99cm
Abdomen circumference	96cm	96cm	95.5cm	95cm
Midhigh circumference	46cm	46cm	46cm	46cm
Leg circumference	30cm	30cm	29cm	29cm
Hip circumference	95cm	95cm	95cm	94.5cm
Waist circumference	93cm	93cm	93cm	93cm

DISCUSSION

According to analysis (Table 6) of *Rasa*, most prominent *rasa* is *kashaya rasa*. So have *lekhana guna* that scrapes out excessive *kapha* and *meda* from *srotas*. Also has *shoshana guna* which absorbs the excessive fluids and

lipid substances. According to analysis of *Guna* most prominent *gunas* are *laghu* and *ruksha*. These *gunas* help to reduce *meda* and *kapha* in obesity. According to analysis of *Veerya ushna* is most prominent *veerya*. *Ushna veerya* helps to reduce obesity. According to

analysis of *Vipaka*, *katu vipaka* is most prominent. It removes the obstruction and normalizes the blood flow. (*sroto vivarana*, *kapha hara*). According to *dosha karma* *Thridosha hara*, *kapha hara* and *vata hara karma* are beneficial in the management of obesity. So according to analysis of *Pancha Padartha* five herbs which were selected are effective in the management of obesity.

Exercise and walking normalize the fat metabolism and increase the *dhatavagni*, mobilize the *medo dhatu* and gives fitness to the body. Weight reduction and relief in various symptoms indicates that the given treatment was so effective.

Table 5: List of ayurvedic utility.

Serial number	Name of drug	Utility
1	<i>Haritaki</i>	Hypolipidemic, Anti diabetic, <i>Medohara</i> , <i>Lekhana</i> , <i>Agni vardhaka</i> , <i>Rasayana</i> , <i>Bhedaka</i>
2	<i>Vibhitaki</i>	Anti oxidant, Purgative, <i>Bhedaka</i> , <i>Agni vardhaka</i> , <i>Medo hara</i> , <i>Lekhana</i> , <i>Rasayana</i>
3	<i>Amalaki</i>	Hypolipidemic, <i>Medo hara</i> , <i>Lekhana</i> , <i>Bhedana</i> , <i>Agni vardhaka</i>
4	<i>Chitraka</i>	Anti microbial, Anti aging, Abortifient
5	<i>Asana</i>	Hypolipidemic, Laxative

Table 6: Ayurveda properties of herbs.

Herb	Rasa	Guna	Veerya	Vipaka	Dosha karma
<i>Haritaki</i>	<i>Pancharasa</i>	<i>Laghu</i> , <i>Ruksha</i>	<i>Ushana</i>	<i>Madhura</i>	<i>Thridosha hara</i>
<i>Vibhitaki</i>	<i>Kashaya</i>	<i>Laghu</i> , <i>Ruksha</i>	<i>Ushana</i>	<i>Madhura</i>	-
<i>Amalaki</i>	<i>Pancharasa</i>	<i>Laghu</i> , <i>Ruksha</i>	<i>Sheetha</i>	<i>Madhura</i>	-
<i>Chitraka</i>	<i>Katu</i>	<i>Laghu</i> , <i>Ruksha</i> <i>Theekshana</i>	<i>Ushana</i>	<i>Katu</i>	-
<i>Asana</i>	<i>Kashaya</i>	<i>Laghu</i> , <i>Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	-

CONCLUSION

Sthaulya can be correlated with obesity. As various methods are described above are very helpful to reduce fat and to overcome the problem of obesity. In fact the body nature of everyone is different from each other so the effects of treatment may vary. *Ayurvedic* medicine along with exercise, walking and follow the *pathya apanya* (wholesome and unwholesome) have a potential to reduce *Sthaulya* or obesity. However due to small sample size and short duration further studies need to be done to confirm these findings.

REFERENCES

- Bray GA, Heisel WE, Afshin A, et al. The Science of Obesity Management: An Endocrine Society Scientific Statement. *Endocr Rev*, 2018; 39(2): 79-132. doi:10.1210/er.2017-00253.
- Davidson S. Davidson principles & Practice of Medicine. 21st ed, 2010; 20-116.
- Kumar P, Clark M. Clinical medicine. 7th ed, 2009; 233-288.
- Hebebrand J, Holm JC, Woodward E, et al. A Proposal of the European Association for the Study of Obesity to Improve the ICD-11 Diagnostic Criteria for Obesity Based on the Three Dimensions Etiology, Degree of Adiposity and Health Risk. *Obes Facts*, 2017; 10(4): 284-307. doi:10.1159/000479208.
- Blüher M. Metabolically Healthy Obesity. *Endocr Rev*, 2020; 41(3): bnaa004. doi:10.1210/endrev/bnaa004.
- Rangel-Huerta OD, Pastor-Villaescusa B, Gil A. Are we close to defining a metabolomic signature of human obesity? A systematic review of metabolomics studies. *Metabolomics*. 2019 Jun;15:1-31.
- Buddhadasa R. Rasaratna Samuchchya sinhalanuwadaya, Anulamudranalaya, Colombo, 1962; 10: pp. 268.
- Sharma RK. Charakasmhita, Volume I, Chaukhamba Orientalis, Sanskrit series office, 2005; pp. 375.
- Sharma PV. Susrutasmhita, Volume I, Chaukhamba Orientalis, Varanasi, 2010; pp.4-170.
- Murthy KR. Ashtangahridayam, Chowkhambhakrinadas Academy, Varanasi, India, 2009; pp. 123
- Murthy KR. Madhavanidana, Chaukhamba Orientalis. 7th ed, 2005; pp. 121.
- Murthy KR. Sarangadharasamhita, Chaukhamba Orientalis. 6th ed., Varanasi, 1984; pp. 37.
- Murthy KR. Bhavaprakasha, Volume II, Chowkhambhakrinadas Academy. 1st ed., India; Varanasi, 2009; pp. 12-502