

## EFFECT OF *GOMUTRA HARITAKI* AS A FAT METABOLIZER IN *STHAULYA* WITH SPECIAL REFERENCE TO OBESITY- A SINGLE CASE REPORT

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### ABSTRACT

**Objective:** *Sthaulya* (obesity) can be defined as abnormal growth of the adipose tissue due to the enlargement of fat cell size (hypertrophic) or fat cell number (hyperplastic) in human body. The distribution of fat in obese individuals is uneven and disproportionate giving rise to a number of several complications like diabetes, hyperlipidemia, cardiovascular disorders and many more. It is one the *Santarpanjanya Vikaras* (i.e diseases due to excessive nutrition) in an individual. Obesity ranks fifth in the risk of the global deaths and its prevalence is still increasing markedly in the recent years due to faulty dietary habits and miss-managed lifestyle. Hence, it is quite essential to control and prevent the disease to avoid further complications. **Material and**

**Methods:** This is a case of a 40 years male presenting with the complaint of sudden increase in weight, dyspnea, fatigue, bulging of abdomen and thighs since 1 year. No history of hypertension, diabetes or any other medical condition was noted. On proper anthropometric examination, it was revealed the person was obese with weight 90 kgs & BMI 31.98kg/m<sup>2</sup>(as per WHO Criteria for obesity).In Ayurveda, *Gomutra Haritaki* is a classical and unique combination of the two authentic herbs, Gomutra, a very holy Rasayan working at the tissue level capable of balancing bio-active substances and a very good Fat metabolizer, along with *Haritaki* (*Terminalia Chebula*), a well known rejuvenating agent holding the properties of *Deepan, Pachan, anuloman* etc. The unique combination of the two drugs was administered to the patient in the powdered form into two divided doses of 5 gms per day for three consecutive months without any other conventional medicines and dietary regime. The

patient was assessed objectively for weight, BMI, and other anthropometric measurements along with his lipid profile essay. Subjective criteria included the *lakshanas* of *sthaulya* as per the ayurvedic literature at regular intervals. **Results:** Results were interpreted on the basis of the data analyzed, and conclusion was drawn. Objective parameters showed significant reduction in the weight of 3.5 kgs with BMI reduction by 1.5kg/m<sup>2</sup>. Patient showed improvement in his systemic symptoms of hunger, fatigue, dyspnea etc. Improvement in his lipid profile essay was also noted. Overall, a considerable effect of the formulation was observed after the therapy. **Conclusion:** This case study was a genuine attempt to observe the effect of the classical ayurvedic formulation, *Gomutra haritaki* on metabolism of fat in an *sthula* (obese) person and eventually preventing the risk of obesity and its further complications.

**KEYWORDS:** *Sthaulya*(Obesity), *Gomutra haritaki*, Fat metabolism.

## INTRODUCTION

*Sthaulya* (Obesity) can be defined as an abnormal growth of the adipose tissues due to the enlargement of fat cell size (hypertrophic) or fat cell number (hyperplastic) in human body. Obesity ranks fifth in the risks of global deaths and its prevalence is still increasing markedly in the recent years.<sup>[1]</sup> The Gravity of Obesity menace can be understood from the fact that about two-third of the American adults suffer from obesity.<sup>[2]</sup> The Indian scenario is currently witnessing rising number in the middle class who are obese. A lot of Indian population has started relying on the processed foods that contain a huge percentage of trans-fat sugars and other unhealthy ingredients. Obesity is considered as the core reason of many lifestyle disorders. Increased weight due to excess fat accumulation carries significant health risks making one in every five men or women either overweight or obese, leading to silent self destruction.<sup>[3]</sup>

In Ayurveda, *Sthaulya* can be considered as a state of increased *Medo Dhatu*(fat). It is one of the *Santarpanjanya Vikaras*(diseases of excessive nourishment). Acharya charak clearly mentions *Sthul purush* as one of the *Ninditpurusha* among the *Ashtaunindita*. Also, Acharya Sushrut and Acharya Vagbhat adds medicinal and behavioral management of *Sthaulya*. *Sthaulya*(Obesity) is a sign that the bodily humors(Vata, Pitta and Kapha) and systems related to them are out of balance. This can happen irrespective of how much or how little food a person eats. Weight control problems happen when our food intake is not balanced by a proper digestion or metabolism.<sup>[3]</sup>

Overweight or Obesity is mostly found in people with predominantly kapha-type constitutions. This dosha is composed of water and earth. When it is imbalanced, the heavy characteristics of these elements become exaggerated. However, obesity can be found with the other two doshas also. In pitta vitiated conditions, there is improper digestion due to low digestive fire (Agni vaishamya). As a result, food isn't processed properly, and that in turn can result in weight gain or obesity. In case of vata dosha, problem is generally that of underweight than overweight. However, they become obese when they attempt to eat sweet, oily foods in order to calm their imbalanced Vata dosha.<sup>[2]</sup> Hence, Sthaulya (obesity) can be considered as a tridoshakmat vikar vitiating the dhatus with predominant Kapha and Medo dushti. Thus, it is quite important to rule out the condition in its early phase and seek proper remedy for the same.

As per ayurvedic classical texts, Gomutra Haritaki is a classical and authentic combination of the two holy and traditional drugs. Gomutra, being a holy rasayana is capable of working at the tissue level and balancing bio-active substances. Along with it, Haritaki is a well known Rasayana dravya (Rejuvenating agent) holding properties of Deepan, Pachan etc. Since, both the drugs bear the same pharmacological properties (Rasa, veerya, vipaak and karma), the combination is effective in scrapping the excess accumulated fat and helps in relieving kapha and medogat vikaras. This short case report is a genuine attempt to observe the effect of the formulation on the metabolism of fat in an Sthula purush (obese person) and eventually prevent him/her from its long term complications.<sup>[4]</sup>

### **Why Gomutra Haritaki**

Gomutra Haritaki is a Holy and Sacred medicine. As the name indicates, Gomutra i.e cow's urine and Haritaki are the two ingredients of this medicine. It is a broad spectrum medicine and is useful in treating various ailments. It is a classical medicine described in ancient ayurvedic texts such as Charak samhita, Sushrut samhita, Ashtanga Hridayama etc. Gomutra consists of urea, uric acid along with vitamins and minerals and other wastes. These wastes are not digested by the cow but are useful in human physiological digestive mechanism of humans. Also, Haritaki is a well known and authentic herb bearing Deepana, Pachana, Anulomana etc. Since, both the medicines are hot (Ushna veerya) in nature, the combination effectively metabolises excessive fat gives relief in kapha and meda related ailments.<sup>[4]</sup>

## CASE REPORT

Hereby presenting a case of 40 year male who visited our institute presenting with complaints of Medovruddhi at the sites of Buttock, thighs, arms and joints with Shwaas (shortness of breath) on exertion. Atikshudhapipasa (Excessive hunger and thirst), Swedadhikya (excessive sweating) with unable to perform daily routine activities was also noted. The person was suffering from the problem since past few years and have seeked a couple of other conventional therapies for the same. On proper clinical and anthropometric examinations, the person was found to be systemically alright. However, the remarkable thing noted was the person was found to be in the category of Obese Category 2 II (WHO classification of obesity)<sup>[5]</sup> with weight 90 kgs and B.M.I 31.98kg/m<sup>2</sup>. Also, abdominal circumference 108 cm, chest circumference 104 cm was observed and documented.

Meanwhile, initial and routine blood investigations were sent to the laboratory. These reports include Lipid Profile Essay and the Blood sugar level (BSL). On the basis of clinical and anthropometric examinations, the patient was diagnosed to be suffering from Sthaulya (Obesity). Her treatment protocol was decided after assessing all the pathological reports which showed raised cholesterol levels with increase in the levels of triglycerides. Considering him as Obese due to excessive accumulation of fat in the periphery of the body, the patient was selected for the study.

### Ingredients of the Drug- Gomutra Haritaki and its properties.<sup>[6]</sup>

Sr No	Drug Name	Latin name	Guna	Rasa	Veerya	Vipaak	Karma
1	Haritaki	Terminalia Chebula	Laghu, Ruksha	<i>Panchrasa (lawan varjit)</i>	Ushna	Katu	Anulomak, Deepaniya
2	Gomutra		Laghu, Ruksha	<i>Kinchit madhur, katu, tikta, kashay</i>	Ushna	Katu	<i>Kshaar, agnideepan, Shothahar</i>

## MATERIALS AND METHODS

### A] Plan of work

This was a single case Report. Written consent of the patient was taken in the best understandable language. The study duration was of 2 months and was carried out in in the Outdoor Patient Department of Swasthyarakshan & Yoga, Government. Ayurved College.

Initially, looking to the pattern of symptoms, the patient was thoroughly examined and investigated on “Day 0”, both clinically and anthropometrically, which showed raised values

(Subjective and Objective parameters) with underlying abnormal pathologies. The first report, showed increased levels of Triglycerides, Total serum cholesterol and LDL with decreased level of HDL. So he has been diagnosed as a case of Sthaulya due to inadequate/impaired fat metabolism. According to Ayurvedic classics *Shleshma & Meda* are involved in this disease so; the treatment recommended was *Agnideepana, Pachana & Shleshma Medohar* as per the principle of management for this case.<sup>[7]</sup>

### B] Method of Preparation of Drug (Standard Operating Procedure)

The Standard Operating Procedure for the preparation of Gomutra Haritaki is derived from the reference of *Ashtanga Hridayam(15/19-20)*. Both ingredients required for the preparation of the Gomutra Haritaki were taken. Dry crude Haritaki was powdered finely The fine powder of Haritaki was given Bhavana of purely extracted *Gomutra Arka*.<sup>[8]</sup> This *Bhavita Haritaki* powder was allowed to dry thoroughly in sunlight for sometime and then dried in indirect light and finally, the drug was made ready for preparation of tablets. Tablets of 500 mg each were prepared. The procedure was carried out under the supervision of the Head of the department of *Rasa-Shastra and Bhaishajya Kalpana* of the institute.

### C] Drug Dosage

Patients of this group were treated with 500 mg tablets of *Gomutra Haritaki*. The drug was administered in a dose of 3g per day (3 tablets twice a day) with luke warm water during *Abhakta* (early morning) and *Prakbhakta Kala* (before lunch and dinner) for eight weeks.

### D] Diet Regimen

No extra diet regimen and any other kind of pathyapathya was followed.

### OBSERVATIONS<sup>[9,10]</sup>

Sr. no	Symptoms	Intervention during Treatment		
		DAY 0	DAY 30	DAY 60
1	<i>Chala SphikUdara -Stana</i>	++	+	+
2	<i>Utsaha Hani</i>	++	+	--
3	<i>Kshudra Shwasa</i>	++	+	--
4	<i>Swedadhikya</i>	+++	++	+
5	<i>Anga Daurgandhya</i>	++	+	+
6	<i>Anga Gauravata</i>	+++	++	+
7	<i>Ati Pipasa</i>	+++	++	+
8	<i>Ati Ksudha</i>	++	++	+
	Mild + , Moderate ++ , Severe +++			

Sr no	Parameters	Before treatment(Day0)	After treatment(Day 60)
1	Weight(in Kg)	90kg	86.5kg
2	B.M.I(in Kg/m <sup>2</sup> )	31.98kg/m <sup>2</sup>	30.4kg/m <sup>2</sup>
3	Fat %(visceral)	42.5%	41.7%

Sr no	Bio-chemical Parameters	Before treatment(Day 0)	After treatment(Day 60)
1	RBS(mg/dl)	92mg/dl	98mg/dl
2	Sr. Total cholesterol(mg/dl)	220mg/dl	199.56mg/dl
3	Sr. Triglycerides	191.81mg/dl	129.96mg/dl
4	Sr.LDL	4mg/dl	43.7mg/dl
5	Sr. VLDL	38.36mg/dl	25.99mg/dl
6	Sr.HDL	51.92mg/dl	38.41mg/dl

Sr. No	Anthropometric Parameters	Before treatment(Day 0)	After treatment(Day 60)
1	Chest circumference	104cm	103cm
2	Waist circumference	108cm	104cm
3	Neck region	37cm	37cm
4	Mid-arm circumference	34cm	33cm

## DISCUSSION

Sthaulya is a well recognized disease from the Samhita period. Acharya Charak has described this disease in the eight most unwanted diseases (Ashtaunindita Ch. Su 21). Dalhana specified that Dhatu Agnimandya is mainly involved in the pathogenesis of disease. As per Charaka in case of Medasvi Purusha, other Dhatus are not nourished properly.

This study was conducted to find the solution for normalizing the metabolic functions of fats & treating Obesity, without any therapeutic medicines. In this present study, patient was given a traditional combination of two holy and authentic herbs with the primary outcome of achieving normal lipid levels along with secondary outcomes such as reduction in weight, waist circumference, BMI etc. ultimately reducing the risk of various lifestyle disorders which emerge as a complication of long term Obesity.

Secondly in this case, no immediate side effects of the formulation reported but one cannot comment of long term side effect at this time at the same time. These formulations are time tested and safe as per several Ayurvedic researches. Ayurvedic principles of diet and Living pattern (Ahara- Vihara, dincharya, Ritucharya) and Codes of conduct (Achara-Rasayana) that are very effective in prevention of non-communicable diseases. Ayurvedic texts described a number of drugs of different groups like Lekhana (Hypolipemic), Deepana (digestive stimulants), Amapachana (Bitter tonics & Digestives), Rasayana(Antioxidants) etc.<sup>[11]</sup> which are promisingly effective in various as mentioned above in detail. Various researches have



shown the hypolipidemic and fat-metabolising activities of drugs used individually, However, both the drugs used in the formulation are selected on the basis of their homogenous Rasa, veerya and vipaak properties also considering their hypolipidemic activity. As mentioned earlier in the introductory part, Sthaulya (Obesity) can be considered as the shleshma-medogat vikaar and hence, the management recommended is Deepan, Paachan and Agnivruddhikar.<sup>[12]</sup> Both the ingredients used in the study are well established and contains various distinct characteristics which are quite beneficial in shleshma- medojanyavikaar.

### **Pharmacological action of Gomutra Haritaki<sup>[3]</sup>**

Gomutra and Haritaki, both the drugs have got the predominance of Agni and Vayu Mahabhuta. One can see the predominance of laghu (light), Ushna, Tikshna, and Ruksha (unctous) Gunas in both of them. Where as in case of Sthaulya, there is abundant increase of medodhatu and this medodhatu has the predominance of Prithvi and Jala Mahabhuta. In case of Sthaulya, one can see the saturation of Guru (heavy), Sheeta (cold in potency) and snigdha (unctous) Gunas in the body. Due to the opposite properties, Gomutra Haritaki might have reduced the increased Medodhatu in case of Sthaulya. Also, as Sthaulya is Medogat dhatwagni janya vikaar, and both the ingredients of the drug act at the dhatugat levels, they bear the potential to improve the Medogat0-dhatwagni mandya which is the principal cause of sthauilya (Obesity).

### **CONCLUSION**

On comparing the effects of drugs, before and after therapy, it is found that, the formulation is effective and quite beneficial in metabolizing the excessive fat and reducing clinical symptoms of obesity. Also, a significant reduction in the parameters were also observed which included anthropometric (weight, B.M.I, Chest and waist circumferences) and lipid profile essay both. This study gives a huge hope for such diseases and alternate solution for treatment. But another side of coin is that a single case does not establish the hypothetical statement completely, large data is required to test the hypothesis.

The study clarifies that the formulation works at the level of Medogat-dhatwagni and is thus useful in meda and shleshma related ailments. The ingredients are cost effective and easily available throughout the country. Finally, this formulation of two authentic and certified herbs can act as a potent in the management of Sthaulya (Obesity) both as prophylactic and preventive treatment in the near future.

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