



## REVIEW OF THE PROBABLE MODE OF ACTION OF MADHUTAILIK BASTI IN THE MANAGEMENT OF STHAULYA (OBESITY).

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### ABSTRACT

Obesity (Sthaulya) is one of the most common metabolic and lifestyle condition which is increasing globally and is characterised by excess body fat. It can result in psychological issues like low self-esteem and lack of confidence, as well as other diseases including diabetes, hypertension, and other conditions. Because of changing lifestyle, the disease is getting worse every day and is a big concern for health officials all over the world. Sthaulya falls under the category of Medoroga, which is brought on by Medodhatvagni malfunction. Sthaulya is a Kapha- Meda Pradhana Vyadhi. The modern definition of obesity is a disease in which having too much body fat has harmful effects on one's health. Ayurveda has historically employed either single or dual therapy to treat Sthaulya, which includes Vaman, Virechana and Basti. Because Basti has a wide range of therapeutic applications, it is regarded as Ardhachikitsa among all therapeutic approaches and some physicians regard it as a complete treatment. Madhutailik Basti, mentioned by Acharya Sharangdhara in Medoroga. It can be given to all the patients who are indicated for Niruha Basti. In this article we have made an effort to explain the mode of action of Madhutailik Basti in the management of Sthaulya.

**KEYWORDS :** Sthaulya, Obesity, Meda Dhatu, Kapha Dosh, Shatkriyakala, Madhutailik Basti, Lekhana Basti.

### INTRODUCTION

#### Concept of Obesity in Modern Science

Obesity is a type of nutritional disorder, due to imbalance between energy intake and energy expenditure, resulting in positive energy balance, characterized by the abnormal growth of the adipose tissue, resulting in an increase in the body weight to the extent of 20% or more of the standard weight for the person's age, sex and height<sup>1</sup>. Obesity is regarded as a pandemic, with potentially disastrous consequences for human health. Prevalence of overweight and obesity is increasing worldwide at an alarming rate, affecting children and adults alike in both the developed and developing countries. The increasing prevalence is due to changes in the lifestyle of the people. In India, about 8% of population is estimated to have a BMI of more than 25. According to ICMR-INDIAB study 2015, prevalence rate of obesity is 11.8%<sup>2</sup>. Obesity is a risk factor in the natural history of other non-communicable diseases, such as diabetes, cardiovascular diseases, osteoarthritis, cancer, hyperlipidemia, and their consequences. Cancer rates are also increased in the overweight, especially colorectal cancer in males and cancer of the gall bladder, biliary tract, breast, endometrium and cervix in females. So, obesity is called "King" of diseases<sup>3</sup>. Increased intra-abdominal fat accumulation causes 'central' (android or apple shaped) obesity and if fat accumulated mainly around the buttocks and thighs causes 'gynoid' (pear shaped) obesity. The former is more common in men and is more closely associated with type 2 diabetes, the metabolic syndrome and cardiovascular disease. The key difference between these depots of fat mainly lies in their vascular anatomy, with intra-abdominal fat draining into the portal vein and hence directly to the liver. Thus, many factors that are released from adipose tissue (including free fatty acids; 'adipokines', such as tumor necrosis factor alpha, adiponectin) may be at higher concentration in the liver and muscle, and hence induce insulin resistance and promote type 2 diabetes<sup>4</sup>.

Some known causes are Portion sizes, particularly of energy-dense foods such as drinks with highly refined sugar content and salty snacks diet, lack of physical activity, automation, urbanization, genetic susceptibility, medications, mental disorders and endocrine disorders.

#### Treatment of Obesity

##### • LIFESTYLE ADVICE

Regular eating patterns and maximizing physical activity are advised. Alternative exercise (e.g., swimming) may be necessary if musculoskeletal complications prevent walking. Changes in eating behaviour (including food selection, portion size control, avoidance of snacking, regular meals to encourage satiety) should be encouraged.

##### • WEIGHT LOSS DIETS

Weight loss diets involve a reduction of daily total energy intake of 600kcal from the patient's normal consumption.

##### • DRUGS

Pharmacologic treatment should be considered for patients with a BMI > 30 kg/m<sup>2</sup> or a BMI > 27 kg/m<sup>2</sup> for those who also have concomitant obesity related diseases and for whom dietary and physical activity therapy has not been successful.

Orlistat inhibits pancreatic and gastric lipases and thereby decreases the hydrolysis of ingested triglycerides, reducing dietary fat absorption by ≈ 30%. Side effects are loose stools, oily spotting, faecal urgency, flatus and malabsorption of fat-soluble vitamins.

Sibutramine is an appetite – suppressing drug or anorexiant affects satiety. Side- effects include dry mouth, constipation and insomnia. Noradrenergic effects of the drug can increase heart rate and blood pressure.

##### • SURGERY

'Bariatric' surgery to reduce the size of the stomach is by far the most effective long-term treatment for obesity. Complications are post-operative respiratory problems, wound infection and dehiscence, staple leaks, stomal stenosis, marginal ulcers and venous thrombosis are common. Additional problems arise at later stage, such as pouch and distal esophageal dilatation, persistent vomiting, 'dumping' and micronutrient deficiencies, particularly of folate, vitamin B<sub>12</sub> and iron. This operation is of no value for long-term weight reduction if food intake remains unrestricted.

##### Link of Gut Microbiota and Obesity

Up to 100 trillion symbiotic microbes live in the gut, called the gut microbiota, which comprises 10 times the number of cells in the body itself. The gut microbiota relies on food residues that the human body does not digest, mucus secreted by the gut, and dead cells that are shed as nutrients to maintain its

high population levels. The active gut microbiota will produce a large number of physiologically active substances, including short-chain fatty acids, vitamins, and health-beneficial products such as anti-inflammatory, analgesic, and antioxidant products, along with potentially harmful products such as neurotoxins, carcinogens, and immunotoxins. These products can enter the blood, directly regulate the expression of genes, and affect human immune and metabolic processes. Therefore, a healthy gut microbiota is essential for maintaining the body's metabolism and energy balance. An imbalance in the gut microbiota can cause metabolic disorders and increase central appetite, leading to obesity<sup>7</sup>.

A link between obesity and the gut microbiota was initially suggested based on studies in germ-free mice. These mice are raised in a sterile environment and have no microorganisms in their gut. Conventionally reared mice have a 40% higher body fat content and 47% higher gonadal fat content than germ-free mice even though they consume less food than their germ-free counterparts. Furthermore, when the distal gut microbiota from the normal mice was transplanted into the gnotobiotic mice, there was a 60% increase in body fat within 2 weeks without any increase in food consumption or obvious differences in energy expenditure suggesting that the gut microbiota affects phenotypic characteristics related to obesity of the host. Mechanistic studies revealed that the transplanted microbiota not only increased caloric release from dietary plant polysaccharides, but also modulated host genes that affect energy deposition in adipocytes including fasting-induced adipocyte factor (Fiaf). Fiaf is a circulating lipoprotein lipase inhibitor and its suppression is essential for the microbiota-induced deposition of triglycerides in adipocytes. These findings suggest that the presence of a gut microbial community may affect the amount of energy that is extracted from the diet and thus the adiposity of the host<sup>8</sup>. In recent years, increasing evidence has shown that an imbalance in the gut microbiota may be a factor leading to obesity.

### Concept of Obesity (Sthaulya) in Ayurveda

According to Ayurveda, Sthaulya is a Santarpanjanya Roga<sup>7</sup>. It is also referred as Medo Roga, is mostly caused by impaired metabolism of Meda Dhatu or adipose tissue. Atisthauya is mentioned among twenty Kaphaj Nanatmaja Vikara<sup>8</sup>.

Madhutailik Basti<sup>9</sup> is an unexplored area regarding the treatment of Sthaulya. It was mentioned by Acharya Sharangdhar in Medo Roga and it is superior in all the Siddha Basti. It is Mridu in nature and can be given at any time and in any season. It contains decoction of Erand, Honey, Tila Taila, Shatpushpa Kalka and Saindhava Lavana.

### 1. Definition of Sthaulya

Acharya Charaka said that a person having excessive deposition of Meda and Mansa Dhatu at the site of Sphik (buttock), Udar (abdomen), Stana (breast) is termed as Sthula Purusha<sup>10</sup>. As per Sushruta, the main cause of Sthaulya is Amarasa<sup>11</sup> which is produced due to Kaphavardhaka Ahara, Adhyasana, Avyayama and Divaswapna. The onset of a disease is triggered by a person consuming any kind of causative factor, such as an improper diet and lifestyle that causes an imbalance of Dosha, Dhatu, Agni, and Mala. When these factors disturb the body's natural balance or metabolism, it triggers a series of events (Shatkriyakala) that ultimately intricates the onset of disease. Similarly, in Sthaulya, when a Purush consumes Kapha Vardhak Ahara-Vihar continuously, it results in the progression of disease which are as follows: -

### Stages of Disease Progression According to Shatkriyakala

**A) Sanchaya** - When a person starts consuming food i.e., Guru, Snigdha, Sheet, Madhur and adopt the sedentary

lifestyle i.e., not doing exercise, taking afternoon naps and not indulge in any kind of physical activity it leads to formation of Vikrita Rasa Dhatu and also encourages the abnormal accumulation of Kapha Dosha i.e., Sanchaya of Kapha Dosha in body, due to which the person starts having symptoms like Gauravam and Alasyam but his or her physical appearance does not hamper at this stage. It is clearly mentioned by Acharya Sushruta that for Sthaulya main cause is Rasa Dhatu<sup>12</sup>.

**B) Prakopa** - The Kapha Dosha aggravates when a person continues to consume Nidana, which causes Kapha Vridhi and symptoms like Guruta, Tandra, Nidra, and Avasada. When the Kapha Dosha worsens in the body, it also lowers body temperature, which is understood to affect the Agni of the body, and proper functioning of Agni is crucial for proper metabolism. Due to increased Kapha, Meda Dhatvagni is disrupted, which causes an inappropriate buildup and development of Meda Dhatu in the body.

**C) Prasara** - Due to the continuous consumption of Nidana the disease continues to progress, in this stage the aggravated Kapha Dosha starts spreading throughout the body, moving from its Prakrit Sthana to other tissues and channels.

**D) Sthanashanshrya** - As a result, at this moment, aggravated Kapha Dosha will come into contact with Meda Dhatu, and as a result of the Ashrayasharayi Bhaav<sup>13</sup> of Kapha Dosha and Meda Dhatu, both of these factors will increase at the same time. This leads to further illness progression. Although it is well known that numerous other Dhatus, including Rasa, Mamsa, Meda, Majja, and Shukra, are also connected to Kapha Dosha, why is just Meda Dhatu rising in this illness? The answer is when a person starts consuming above mentioned Nidan of Sthaulya it leads to the Vikriti of Medovaha Srotas (Medovaha Shroto Dushti Nidana are similar as Nidana mentioned in Sthaulya) which causes improper circulation and formation of Meda Dhatu. Acharya Sushruta has already mentioned about Kala in Sharira Sthana chapter 4, where he discusses the Sthana of Meda Dhatu<sup>14</sup>, which refers to the abdomen and tiny bones. Therefore, the abdominal region is where the Meda Dhatu initially becomes visible when it begins to accumulate.

**E) Vyakta** - As a result of ongoing consumption of Apathya Aahara and Vihara, Vikrita Rasa Dhatu and aggravating Kapha Dosha are now assisting Meda Dhatu in dispersing throughout the body, causing Srota blockage and turning the body Sthula. The obstruction of Srotas causes Kosthagatavayu in the Kostha to become blocked, which ignites the Agni of the Kostha (digestive fire), causing the person to experience frequent hunger. The distinctive characteristics of Sthaulya become apparent i.e.

मेदोमांसानिवृद्धत्वाच्चलस्फिगुदस्तनः । अग्रथोपचयोत्साहो नरोऽतिस्थूल उच्यते ॥

If a person having excessive deposition of Meda and Mansa Dhatu at the site of Sphik (buttock), Udar (abdomen), Stana (breast) is termed as Sthula Purusha.

**F) Bheda** - After completing all five of the aforementioned Kriyakala, complications start to develop when the condition is not treated. This is the last stage of treatment after which Vyadhi will become Asadhi. When Sthaulya is not treated in a timely manner, it can lead to a number of complications, such as Prameha (diabetes), Prameha Pidika, Jwar (fever), Bhagandar, Vidradhi, and Vata Vikar<sup>15</sup>, which can all lead to death.

### Review of Madhutailik Basti

In Ayurveda, Sanshodhan/Apkarshana, Sanshamana/Prakritivighata, and Nidana Parivarjana are the general management concepts for any condition. Due to the fact that Sthaulya is a syndromic entity {बहूदोषस्यलक्षण}, Sanshodhana therapy is strongly advised. Sanshodhana are the therapies which eliminate the aggravated Dosha. Basti Chikitsa is one of the types of Sanshodhana. Among all the treatments, it is also regarded as Chikitsaardha<sup>16</sup>. Madhutailik Basti was

mentioned by Acharya Sharangdhar in Sthaulya and it is superior in all the Siddha Basti. It is Mridu in nature and can be given at any time and in any season. It contains decoction of Erand, honey, Tila Taila, Shatpushpa and Saindhava Lavan.

एरण्डकवाथतुल्यांशं मधु तैलं पलाष्टकम् ॥ शतपुष्पापलाधेन सैन्धवाधेन संयुतम् ।  
मधुतैलिकसंज्ञोऽयं बस्तिः खजविलोडितः ॥ मेदोगुल्मकुमिली हमलोदावर्त्तनाशनः  
बलवर्णकैश्चैव वृष्यो दीपनबृंहणः ॥ (Sh.Sa. Utt.Kha.6/29-31)

Probable Mode of action of Madhutailik Basti in Sthaulya

Contents of Madhutailik Basti: -

- 1) Makshik (Honey)
- 2) Saindhav lavan
- 3) Tila taila
- 4) Shatpushpa Kalka
- 5) Erand moola kwath

### MAKSHIKA

Main role of Madhu is to increase the retention time of Basti by counteract the irritative property of Saindhava. The retention time of irritative substances in rectum may be favored by making solution as nearly isotonic as possible by using colloidal fluid such as starch water as diluents. Natural sugars found in honey are easily absorbed by the digestive system and transformed into energy. As a result, it functions as a quick energizer. It doesn't turn into body fat. According to certain research studies, chronic inflammation brought on by oxidative stress<sup>17</sup> and obesity are interconnected. Since honey is a very potent antioxidant, honey is obviously advantageous for patients who are obese.

In Sthaulya, Vikrita Meda Dhatu obstructs Srotas and Kapha Dosh becomes worsened and spreads throughout the body. Madhu has the Sukshma, Kaphashamak, Chedana, Lekhana, and Srotoshodhana qualities that can help the medicinal drugs enter the body at the microscopic level while also eliminating all aggravated Kapha Dosh and Vikrita Meda Dhatu from the body channels and clearing obstructions in the Srotas. Ruksha Guna of the exacerbated Kapha Dosh and Meda Dhatu counteract Snigdha Guna. Madhu is also mentioned in Sthaulya Chikitsa.

A study on mice came to the conclusion that honey enhances gut flora, while another study showed a link between gut flora and obesity. Gut bacteria are thought to be novel factors driving a number of metabolic and immunological functions that are involved in host physiology and body weight homeostasis<sup>18</sup>.

### SAINDHAVA

It is crucial to the beginning of Basti's absorption since the amount of rock salt that must be added to Basti results in a salt solution that is close to normal saline, or 0.8%, at 1%. It is very surprising to note that the sages of Ayurveda took such great care thousands of years ago to ensure that the salt level of Basti should be closer to normal saline in order for the Basti to avoid upsetting the balance of two key electrolytes i.e., sodium and chloride of the blood.

Saindhava's Sukshma Guna facilitates drug entry into the Srotas. When combined with honey, Saindhava's Ushna and Tikshna Guna help to liquefy the Dosh Sanghata and break it down into tiny particles. It develops the ability to liquefy the thick Kapha and split it up into tiny pieces for simple evacuation.

### TILA TAILA

Because Tila Taila is an oily molecule, it makes cell membranes more permeable and aids in the removal of Dosh and Mala. Sneha makes it easier for the intestines to absorb the drug's fat-soluble component. The cell is easily accessed by lipids and chemicals that are lipid soluble.

Sneha assists Basti Dravya in this way to get down to the cellular level. In addition to serving this purpose, it shields the mucosal membrane from the negative effects of irritant medications in the Basti Dravya.

Through the Sukshma Guna, Tila Taila has the power to enter all of the body's microchannels. It also has the potential to scrape away viscid Kapha through the Lekhana Guna, calm inflamed Dhatu and exacerbated Kapha Dosh through the Vikasi Guna, and quickly disperse drugs throughout the body by its Vyavayi Guna. The exacerbated Kapha Dosh is combated by Tikta Rasa and Kashaya Anurasa in Tila Taila. It aids in lessening the aggravating Meda Dhatu in Sthaulya because of the Vyavayi, Sukshma, Tikshna, and Ushna properties.

### Shatpushpa Kalka

By enhancing the solution's osmotic permeability, it aids in the disintegration of the Mala. Shatpushpa has the properties of Ruksha, Ushna, Tikshna, Laghu, and Katu, all of which aid in calming Kapha and Meda Dhatu in Sthaulya. Additionally, it aids in reducing Badha Kosta. It has characteristics of Vatakapha Shamak.

### ERANDAMoola KWATHA

Kwatha helps in maintaining the volume of the fluid, helps in spreading and cleansing. It offers an excellent vehicle for pharmacological action. Additionally, Eranda has a Vatahara nature and offers the actions of Anulomana and Nirharana. Eranda possesses Vatakaphahara Guna as a result of its Ushna property. Additionally, it has aphrodisiac properties, which aid in Sthula patient recovery from impotence.

These medications affect Kapha-Vata because of their Ushna Virya. Excessive Meda Vridhi and Ama Rasa production occur in Medo Roga. The Srotosanga is broken by Madhutailik Basti. So, the active principle reaches to the cellular level. Due to Tikta, Katu, and Kashaya Rasa, Erandamoola Kashaya results in Shoshana, Lekhana, and Amahara Karma.

### DISCUSSION

Sthaulya can be regarded as a metabolic condition with a Kapha predominance in our Ayurvedic literature. Excessive accumulation of Kapha Dosh along with Meda Dhatu and formation of Vikrita Rasa Dhatu leads to development of Sthaulya Roga. The medicinal benefits of Madhutailik Basti can be used to cure Sthaulya (obesity). Katu, Tikta Rasa, and Kashaya Anurasa are all present in the Madhutailik Basti which leads to Kleda and Meda Upshoshana. Teekshna, Laghu Guna and Ushna Veerya are responsible for liquifying exacerbated Kapha and Meda as well as cleansing the Srotas. Rukhsa Guna works against the Snigdha Guna of both Kapha and Meda and thereby reducing the excessive sweat production in Sthula Rogi. Some contents of Madhutailik Basti have Vyavayi and Vikasi Guna by these properties the drugs spreads very fast in the body. Madhutailik Basti have aphrodisiac property also which can also correct the impotency of Sthaulya Rogi. In total they all helps to break the Sthaulya Samprapti.

According to various research there is a clear link between gut flora and obesity. Also, Madhutailik Basti is indicated for the treatment of Sthaulya. Hence it can be concluded that somehow Madhutailik Basti is interconnected to Gut flora.

### CONCLUSION

It is evident from Madhutailik Basti pharmacological characteristics and Acharya Sharangdhara description of it as Medonasahak that it can be used as a Sthaulya therapy option. Due to its Mridu nature, it can be administered to all types of Sthaulya patients without any issues at any time of the year. It may be crucial in lowering Sthaulya (obesity).

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