A CRITICAL ANALYSIS OF ETIOLOGICAL FACTORS OF STHAULYA (OBESITY)
Monica Aggarwal
M.D.Scholar, Department of Kayachikitsa, Ayurvedic and Unani Tibbia College, New Delhi, India.

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ABSTRACT
In this era of rapid modernisation, lifestyle disorders are on a rise. Obesity is a rapidly emerging disorder of nutritional abundance happening due to sedentary lifestyle and abundance in calorie intake by a person. Obesity is a state of excess adipose tissue deposition and increase weight in a person. Ayurveda which is a holistic life science also describes obesity as Sthaulya under Santarpanjanya vikara (over nourishment disorder). Multifactorial in nature, Sthaulya etiology lies in diet, lifestyle, mental and genetic factors as intake of Madhur rasa, Atisamapoorana (overeating), Avayayama (no physical activity), no mental exersion and Bijaswabhava (hereditary factor). Main pathogenesis lies in increase in Guru, Sheeta and Snigda properties in a person in different proportions. Madhura rasa increases all 3 Guna, no physical exertion increases Guru and Sheeta Gunas. In this article, all Nidana of Sthaulya are critically evaluated to help understand and treat Sthaulya in its primary stage only. It helps in decreasing treatment load of any disease in further stages.

INTRODUCTION
Obesity is a disorder of excess of adipose tissue in body. The term overweight and obesity is often used to signify increase in body weight in a person due to excessive deposition of fat. In Ayurveda which is a holistic science, obesity is explained under the caption Medoroga or Sthaulya. Sthaulya is classified under Santarpanjanya Vikara (nutritional disorder) by Ayurveda classics.[1] Sthaulya is caused by intake of Kapha Vardhak Aahar and Vihar particularly Madhur Rasa having Guru, Sheeta and Snigda properties.[2] On further explanation of etiological factors, Acharya Charak has mentioned Nidana of Sthaulya as following.[3]

- Guru-Madhur- Sheeta – Snigda
- Atisampoorana (over eating)
- Avyayama (no physical activity)
- Avyavaya (no indulgence)
- Divaswapana (excess daytime)
- Harshinitya (over joyous)
- Achintana (no mental exertion)
- Bija Swabhava (hereditary factors)

Due to intake of Sthaulya Vardhak Aahar Vihar there is formation of Aam (improperly digested) in Amashaya, spreads in body, leads to Meda-dhatwagni Mandya which in turn produces more Meda. As a general Siddhant in Ayurveda, Agnimandya of a Dhatu hampers the formation of its next Dhatu and a major part of its constituents are converted into its Mala. Same cycle happens in Medadhatwagni Mandya as Sneha is the Mala of Medo Dhatu and formation of Dhatu next to Meda like Asthi, Majja and Shukra are hampered or these are formed in inadequate amount to sustain bodily functions. This Vikrita Meda obstructs body channels in Koshta causing increased Saman Vayu and Tikshagni. Combination of inadequate Dhatu formation and channel obstruction by Vikrit Meda produces a variety of symptoms. So, Sthaulya is a Kapha Pradhan Tridosha Vyadhi involving Kledaka Kapha, Samana Vayu, Vyana Vayu and Pachak Pitta along with Medadhatwagni Mandya and Tikshna Jatharagni producing excess of Meda in a person.

It is believed that Sthaulya affect a person physically, mentally and socially. A physically imbalanced looking person is generally not acceptable socially especially in teenager group, therefore, undergoes mental pressure for social acceptance and appreciation. On physical context, 8 body types are disregarded by Ayurveda namely Atishoola, Atikrisha, Atideergha, Atiharisva,
Atilooma, Alooma, Atikrishna and Atigaur.[4] Out of these 8, Atisthoolaa is considered most troublesome due to difficult treatment and bad prognosis. Clinical features of Sthaulya are[5]

- Excessive hunger (Atikshuda)
- Excessive thirst (Atitirshina)
- Excessive sweating (Atisweda)
- Breathlessness on mild exertion (Shvaskrichta)
- Excessive sleep (Atinidra)
- Difficulty in performing heavy work
- Sogginess (Jadata)
- Short life span (AlpaAayu)
- Decreased body strength (Alpa Bala)
- Inertness (Utsaha Haani)
- Foul body odour (Daurgandhya)
- Unclear voice (Gadgadata)

In this review article an attempt has been made to study etiological factors of Sthaulya in depth to help in effective treatment of Sthaulya by Nidana Parivarjana as first line of treatment. Shodhan and Shaman Chikitsa are secondary treatment modalities whose role can be effectively made up only after a person has stopped intake of etiological factors causing the disease. Dietary habits and physical exercise play an important role in management of Sthaulya which are included in Nidana Parivarjana.

Madhur Rasa

As stated by Acharya Charaka, excess consumption of Madhurrrasa out of 6 rasa, is the main cause in development of Sthaulya. Consumption of Madhurrrasa in moderate amount increases all body Dhatu in equal proportion providing strength, stability, soothing, nourishment and invigorating properties to all senses. Over consumption leads to features like softness, flaccidity, plumpness of body with excessive sleep, heaviness, decrease in digestive power and obstruction in body channels.[6]

Madhurrrasa contains 3 Guna namely Guru, Sheeta and Snigda which are synonymous with Meda Dhatu. Excessive intake of Madhur Rasa over a long period increases Medadhatu in body as compared to other Dhatus. An imbalance between Dhatu formation leads to weakness (Daurbalya) in a Sthoolaa person.

Sheeta Guna in a Dravya characteristic function is Stambana, to restrict movement of any substance to one place. It happens in Amashaya during Aam formation in Ajirna. Ajirna is the cause in pathogenesis of Sthaulya.

Guru Guna in a Dravya causes features like heaviness, Mala Vridhi, nourishment and increase in body growth, ultimately causing Alasya (lethargy), early ageing, increase sleep and decrease work output in a person.

Snigda Guna in a Dravya causes softness in body. Increase softness produces flaccidity in a person, a person appears to be of great built but little enthusiasm and strength to perform daily activities. Flaccidity cause signs of premature ageing, shortness of breath, decreased age, vigour, strength in a person.

Ati Sampoorna Aahara

Intake of high calorie diet is the main culprit of Sthaulya which need to be compensated by increase in physical exertion by a person so as not to become obese.

Due to rapid modernisation especially in developed countries, high calorie diet in form of packed food with sedentary lifestyle due to development of modern tools has contributed majorly towards obesity and other non communicable lifestyle disorders like diabetes, hypertension, stroke etc.

Atisampoorana can be in the form of Dravya Samanya or Guna Samanya. Dravya Samanya in form of intake of Madhur Aahar taken in excess amount then required. Guna Samanya is in the form of Aahar with Guru, Sheeta and Snigda properties in it like Ikshu, Navneet, Ghrit etc.

The term Atisampoorana Aahara has been coined for this which includes binge eating disorder in children and teenagers. As a general rule of diet Acharya has mentioned, one should fill Koshta with 1 part of solid diet, 1part with liquid and remaining 1 part to be kept empty for easy movement of Tridosha.[7] Acharya Sushruta has further explained this by referring to Ajirnashana and Adhyashana as a Nidana of Sthaulya causing formation of Aam.[8] Increase intake of food quantity by a person causes derangement of Agni and vitiation of Tridosha causing Ajirna (improper digestion). This extra food gets accumulated in Amashaya at one place without digestion causing formation of Aam.[9] When it combines with Kapha, Santarpananayja diseases occur like Sthaulya, diabetes etc. Ajirna include mostly Aamajirna (due to Kapha) happening due to Kapha predominant Aahar intake or food rich in fat. It leads to Aam formation particularly due to Guru Guna producing heaviness, lethargy in a person, unable to perform daily activities and developing Sthaulya in long run.

Ayayama

Obesity is a condition resulting due to increase calorie intake and decrease energy expenditure lack of physical activity is a major
contributory factor in development of *Sthaulya*. A person engaged in intake of high calorie diet particularly fatty foods and not performing sufficient physical activities to burn those calories end up getting obese. Physical activity helps in building muscle mass of body and decrease adipose tissue. A small powerful outburst of high intensity physical exercise increases basal metabolic rate for several hours. Basal metabolic rate is the amount of heat generated by an average weighing person at rest and is directly proportional to muscle mass in a person. On an average, 30% of this heat generated in body is contributed by skeletal muscle mass present in a person.\[10\] Heat generated and liberated in body is nothing but dissipation of *Meda* in the body.

According to Acharya Charak, *Vyayama* is a *Karma* making body stable, increases strength, incorporating lightness in body, making one able to perform various activities, resistance to discomfort, decreasing *Kapha Dosh* and stimulate digestion.\[11\] Body stability and strength can be attributed to increase muscle mass of body which help one to perform various strenuous activities in a day to day life without getting tired and without causing any difficulty to bear discomfort caused by weather, exertion, hunger etc.

*Acharya Sushruta* has mentioned benefits of *Vyayama* as one causing physical development of body with lustre, body compactness, stimulation of digestion, no lethargy, firmness, lightness, cleanliness and tolerance in body. According to *Sushruta*, there is no anti obesity measure as suited as *Vyayama*.\[12\]

Sense of lightness (*Laghuta*) is attributed to decrease adipose tissue in body which is heavier than muscle. Stimulation of digestion is due to increase in *Ushna Guna* of body due to increased heat dissipation. So, an act of *Vyayama* helps in combating *Guru* and *Sheeta Guna* of *Kapha* and *Meda* with an increase in muscle mass and proportionate decrease in adipose tissue. So, *Ayavayama* or lack of physical activities causes accumulation of *Sheeta* and *Guru Guna* of *Kapha* and increase in *Meda Dhatu* which in turn causes *Sthaulya* in a person.

**Ayavayama**

In *Sthaulya*, consumption of *Kapha Vardhak Aahar Vihara* leads to production of *Meda* and little of other *Dhatus* like *Asthi, Majja* and *Shukra*. *Shukra* is the ultimate or final *Dhatu* of body providing strength and vitality to body.

Indulgence in sex can be considered as being a mechanical act responsible for a considerable amount of energy utilization. So, a person not involved in physical activities like indulgence end up storing energy producing lethargy in long run and developing *Sthaulya* over a considerable period of time.

*Ayavayara* or *Kricha Vyavayta* (difficulty in indulgence) has also been included as one of the symptoms of *Sthaulya*. Decrease in *Shukra Dhatu* formation and body channels obstruction by *Meda* both contribute to difficult act of indulgence, further contributing to decrease energy expenditure as compared to calorie intake. This causes *Sthaulya*.

**Divaswapna**

Good sleep is responsible for health and happiness in a person. Sleep happens when the person’s sense organs are exhausted and disassociate themselves from external environments and objects. So an individual sleeps.\[13\] 6 types of *Nidra* has been mentioned by *Acharya Charaka*.\[14\] Among them *Divaswapna* is attributed by excess of *Tama Guna* and *Kapha Pradhan Nidra*. Sleep has been given great emphasis as being responsible for a person’s stout or emaciated body.\[15\] Excessive of day time sleepiness has been prohibited by *Ayurveda* as it increase *Snigdha Guna* in body.\[16\] *Snigdha* in body is due to increase in *Kapha Dosh*, ultimately contributing to etiology of *Sthaulya*.

*Acharya Vagbhata* has described the *Samprapti* (pathogenesis) of *Nidra* in a beautiful sequence of events. Increase daytime sleep increases *Kapha* in body causing various channel obstruction. It leads to increase in body heaviness, lethargy and more sleepy behaviour.

So, by *Ayurveda* *Kapha Pradhan Aahar Vihar* are first and foremost factors responsible for increased sleep and wrong sleeping habits causing increase in *Snigdaga* in body. Persons who are denied with *Divaswapna* are mainly one with excess of *Kapha Vikara* and persons whose daily intake of *Sneha* is proportionately high.

**Manasika Nidana**

*Chinta* is a normal physiological body function. An excess of both *Chinta* and *Achinta* is a matter of concern. In *Sthaulya*, a person not indulging in any type of mental work aggravates the *Tama Guna* of mind causing depression which worsens the condition. A depressed mind withdraws itself from society, living in isolation and involved in minimum of any physical and mental activity causing *Sthaulya* in long run.\[17\]

*Harsh* is the happy state of mind, responsible for a disease free state of mind but over joyous nature may be a problematic condition.
Harsh is of 3 types according to Bhagvata Gita- Satvika, Rajasika and Tamsika.\[10\] Rajasika Harsh gives Dukh and Tamsika harsh produces Nidra and Alasya. Tamasika harsh is due to increase in Kapha and Tamu Guna in body and mind causing Guruta (heaviness) in body leading to weight gain and Sthaulya.

**Bija Swabhava**

Role of hereditary factors in Sthaulya is considered important by Acharya Charaka. It has been seen that obese parents tend to have obese children. It happens due to similar environment and dietary patterns.

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<th>Nidana</th>
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**CONCLUSION**

Nutritional (Santarpanjanya) Vikara Sthaulya is a disorder caused by excessive intake of Kapha dominant diet along with decrease in physical activities in a person. Food with properties of Guru, Sheeta and Snigda are particularly responsible for increase in Kapha Dosha and Meda Dhatu leading to Meda Dhatwagni Mandya and production of excess of Meda in comparison to other Dhatus. While treating any disease, particularly in Hetu Viprit Chikitsa, factors which increase particular Dosha are to be kept in mind while selecting Aahar and Vihara Paricharya. In case of Sthaulya, Dravya -Guna- Karma which are opposite to Guru, Sheeta and Snigda Guna are to be employed for its effective management. Majority of diseases mentioned in Ayurveda are treated with this Siddhant.

**REFERENCES**

2. Ibid; pg383.
3. Ibid; pg309.

4. Ibid; pg307.

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