

## Conceptual Study of Medoroga with special reference to Sthaulya (Obesity): A Review

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### Abstract

The world wide latest report of W.H.O. for prevalence of obesity states that around 250 million cases of obesity are reported every year afflicting about 7% of adult population. Obesity is a common health problem and its prevalence is increasing globally. Obesity may be defined as an abnormal growth of adipose tissue due to an enlargement of adipocytes (hypertrophic obesity) or increase in number of fat cells (hyperplastic obesity) or a combination of both.

Abnormal accumulation of *Meda Dhatu* in body is known as *Medodushti*. *Medodushti* includes several numbers of other *Medovikaras*, which are collectively known as *Medoroga*. Ayurveda considers *Sthaulya roga* as a disease due to *atisantarpana*-over nutrition. Body is made of seven *dhatu*s i.e. *rasa*, *rakta*, *mamsa*, *meda*, *asthi*, *majja*, *shukra*. Obese patients are nourished excessively by *meda dhatu* and other remaining *dhatu*s get malnourished. *Kapha* gets accumulated in between when *Kapha* is increased in abnormal fashion, fat metabolism and *Agni* are hampered and person becomes obese.

### Keywords

*Meda Dhatu*, *Medoroga*, *kapha*, Obesity



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## INTRODUCTION

*Sthaulya* is described as excessive and abnormal increase of *meda dhatu* along with *mamsa dhatu* resulting in pendulous appearance of buttocks, belly and breasts; however increased bulk is not matched by corresponding increase in energy. The obesity as described as '*Medoroga*' in ayurveda and said that comparatively it is easy to help an underweight person rather than overweight. *Sthaulaya* (obesity) can either be due to an actual increase in fat component (*Medodhatu*) or due to malfunctioning of fat metabolism.

Obesity is the condition in which the natural energy reserve is increased to a point where it is associated with certain health condition or increased mortality. It has been estimated affects 20 – 40% of adults and 10- 20% of children and adolescents in developed countries<sup>i</sup>. According to W. H. O., the world wide latest report of prevalence of obesity states that around 250 million cases of obesity are reported every year afflicting about 7% of adult population.<sup>ii</sup> India is following a trend of other developing countries having tendencies of steadily more obese.

**Aetio-pathogenesis of *Sthaulya*:** All the *Nidana* described by various *Acharyas* for *Medoroga* can be classified under four broad categories as follows<sup>iii, iv</sup>:

- 1) ***Aharatmaka Nidana* (dietary):** *Santarpana*, *Adhyashana*, *Guru Aharasevana* (heavy digestible food), *Madhura Aharasevana* (excessive sweat intake), *Snigdha Aharasevana*, *Navanna sevana* (new seed), *Nava Madyasevana* (new alcohol), *Mamsa Sevana*, *Dadhi Sevana*, *Ikshu Vikara Sevana*, *Guda Vikara Sevana* etc.
- 2) ***Viharatmaka Nidana* (life style related):** *Avyayama* (lack of physical exercise), *Avyavaya* (lack of sexual life), *Diwaswaap* (day time sleep), *Swapnaprasangat* (long sleep), *Asana Sukham* (excessive sitting), *Gandhamalyanusevana* (using perfumes, garlands), *Bhijnottara nidra* (sleeping after meal), *Bhojanottar snaana* (bathing after taking the meal) etc.
- 3) ***Manasika Nidan* (Psychological factors):** *Harshnityatvata* (uninterrupted cheerfulness), *Achintanat* (lack of tension), *Manasonivritti* (mental relaxation),

*Priyadarshana* (watching of beloved), *Saukhyena* (complete happiness) etc.

- 4) **Anyā Nidāna (other causative factors):** *Bijadoshaswabhava* (hereditary), *Amarasa*, *Snigdha Madhur Basti Sevana* (administration of Unctuous & Sweet enema), *Snigdha Udvartana* (unctuous unction), *Tailabhyanga* (oil massage).

Another classification of the causative factors of *Sthaulya* can be done on the basis of *Asamānya-Vishesh siddhanta* advocated by *Acharya Charaka*<sup>v</sup>, according to which the increase or decrease in *Dhatu* is based on the quality and quantity of nutrition provided to them. Excessive consumption of substances similar to *Meda* (*Guna samānya*) and the action that have similar action of *Meda* (*Karma samānya*) leads to an increment of *Meda* in the body. Thus based on this concept, the *Nidānas* of *Medoroga* can be classified as:

- **Dravya Samānya:** consumption of animal & vegetable fats ( *Ghee*, *taila*, *vasa*, *majja* )
- **Guna Samānya:** consumption of food with *Snigdha*, *Guru guna* e.g. milk, *masha*, *sheeta veerya dravya*,

substances with *madhura rasa* & *vipaka*.

- **Karma Samānya:** *Divaswapna*, *Avyayama*, *Avyavaya*, *Sukhasana*, *Taila abhyanga*, *Snigdha udvartana*, etc.

The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Globally, there has been an increased intake of energy-dense foods that are high in fat and an increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

**RUPA(Clinical feature)**<sup>vi</sup>: Which means that due to inordinate increase of *Meda* and *Mansa Dhatus*, the body gets disfigured by pendulous buttocks, abdomen, breast (*Chal Sphika-Udar-Stana*) and that increased bulk (adiposity) is not accompanied with the corresponding increase in energy (*Ayathopchayotsaho*). So, the person has less enthusiasm in his physical activity.

Besides these cardinal symptoms, eight *Doshas* (disability) of *Medoroga* have been mentioned along with their elaborated pathogenesis which is as follows:

**Table 1** Dietary Composition a/c to *Dravyaguna vigyan* that leads to *Medoroga*.<sup>vii</sup>

<i>Rasa</i>	<i>Guna</i>	<i>Veerya</i>	<i>Vipaka</i>	<i>Karma</i>	<i>Panchbhautika composition</i>
<i>Madhura</i>	<i>Guru, Sheeta, Manda, Sthira, Shlakshna, Pichchila, Snigdha, Sthula, Sandra</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Brimhana, Santarpa na Vrishya, Rasayana, Abhishyandi</i>	<i>Prithvi, Jala</i>

- **Ayushohrasa (Diminution of lifespan):** Life expectancy decreased because of over production of *Medo Dhatu* at expense of other *Dhatu*s therefore, other *Dhatu*s could not be nourished properly. Obesity leads to various co-morbidity conditions thereby decreasing the life expectancy of the obese person.
- **Javoparodha (Lack of enthusiasm)** - The *Shaithilya* (flabbiness), *Saukumarya* (delicacy) and *Guruta* properties of *Meda Dhatu* causes *Javoparodha*. Thus these persons are slow to initiate the work.
- **Kricchavyavaya (Difficulty in sexual act)** - Due to obstruction in genital passage by *Meda Dhatu* and less production of semen the sexual act becomes difficult.
- **Daurbalya (Debility)** This result because of the deranged metabolism owing to malnourishment of the *Dhatu*s.
- **Daurgandhya (Foul smelling of**

**body)** Bad smell results due to excessive sweating, innate quality of *Meda Dhatu* and morbid nature of vitiated *Meda*.

- **Swedabadha (Distressful sweating)** On account of the admixture of *Kapha* with *Meda*, *Vishyandi*, *Bahutva* and *Guru* properties of *Meda* and its inability to bear the strain of exercise it results in *Swedabadha*.
- **Kshudhatimatrata (Excessive hunger) or Pipasatiyoga (Excessive thirst)** Because of increased *Agni* in *Koshtha* and vitiation of *Vata* by obstruction of *Meda* it results in excessive appetite and thirst.

**Samprapti<sup>viii, ix</sup> (pathogenesis):** If an individual indulge in frequent consumption of *Shleshmala* diet (*Madhura, Guru, Sheeta, Snigdha*) without undertaking adequate physical activity and rather sleeps for a long time or in other way, over indulgence in *Kapha & Meda Sadharmi. Amarasa* containing etiological factors leads to *Kapha*

predominant *Dosha* increase in the body, which due to its very nature produces *Agni* disturbance causing the production of *Ama*. This *Ama* goes directly to *Meda Dhatu* & leads to increase and accumulation of *Meda* by creating *Medodhatwagni-mandya*. Vitiating *Kapha* & *Meda* causes *Medovaha Sroto Sanga* (obstruction), leading to *Margavrodha* of *Vata*. This vitiating *Vata* circulates in whole body especially in the *Kostha*, later on causing digestive fire increase (*Jathragni Sandhukshana*) which results in stimulate of appetite & digestion (*Kshudhaadhikya* & *Shighra Jarana*) of *Ahara*. *Medodhatwagni Mandhya* takes place due to which the capacity to digest *Medamsa* by the *Medodhatwagni* is hampered, leading to the formation of *Apakwa* (undigest) *Meda* which is incapable of nourishing the further *Mamsa Dhatu*. The *Ama Meda* gets accumulated in *Sarvanga* especially in the *Sphig-Udar-Stana* regions resulting in *Sthaulya*.<sup>x</sup>

The time required to provide nourishment to *Dhatu* of whole body varies from one day, six days<sup>xi</sup> and one month<sup>xii</sup>. But in case of patients with *Beeja Dosha*, it is *Khalekapota Nyaya* which becomes effective.

The basic components that get vitiating in the pathogenesis of *Sthaulya* are described below:

**Dosha:** Though *Medoroga* is a *Kapha* predominant *Vyadhi* yet the involvement of *Vata* and *Pitta* cannot be neglected. So, all the three *Doshas* are involved in the pathogenesis of *Medoroga*.

- **Kapha:** most of the *Medoroga* symptoms come under the category of *Kaphavridhi* i.e. *Alasya*, *Gatrasada*, *Nidradhikaya*, etc. Usually the *Medorogi* belongs to *Kapha Prakriti* and are slow and lethargic in physical activity.
- **Pitta:** most of the patients have *Teekshnagni* which indicates the involvement of *Pitta Dosha*. Most of the *Medoroga* patients present with *Ati Kshudha* due to increase of *Pitta* by *Ushna Guna*. *Margavarodha* due to *Medovridhi* stimulates *Samana Vayu* to increase the *Jathragni*. So person has voracious appetite and good digestion power.
- **Vata:** In this disease *Vata* has been mentioned in the state of *Aavrta* which provokes the *Agni* ultimately increasing the demand for the food (*Abhyavaharana Shakti*).<sup>xiii</sup> Also *Vyana Vayu* is responsible for proper circulation and distribution of *Dhatu*.<sup>xiv</sup> Due to, *Sanga* in *Medovaha*

*Srotas* the nutrients cannot be carried by *Vyana Vayu* to their respective *Dhatu*s. The process of circulation, digestion and proper distribution of *Dhatu*s are controlled by *Samana* and *Vyana Vayu*. Hence, involvement of *Samana Vayu* can be clearly postulated with the evidence of *Agnisandhukshana* whereas improper distribution of fat in the body proves the involvement of *Vyana Vayu*.

**Dushya:** *Acharya Sushruta* has mentioned *Medoroga* as a *Dushya* dominant disorder<sup>xv</sup> and in this disease the excessive production of abnormal *Meda Dhatu* is clearly visualized. *Kapha* is seated in *Rasa*, *Mamsa*, *Meda*, *Majja* and *Shukra Dhatu*s. On the basis of *Ashrayashrayeebhava* vitiation of *Kapha* also leads to vitiation of above *Dushyas*. Also *Kapha* and *Meda* have similar properties. Finally ultimately vitiation of *Meda Dhatu* also occurs.

In the disease, due to over consumption of *Guru*, *Snigdha Pradhana Dravyas* with increased *Agni*, *Anna Rasa* is formed which leads to increase of *Meda Dhatu* directly by passing the *Rakta* and *Mamsa Dhatu* as explained by *Dalhana*.

**Srotas:**<sup>xvi</sup> In *Medoroga*, *Medovah Srotas* is mainly involved along with the *Rasavah* and

other *Srotasa*. Basically it is a *Sanga* type of *Srotodusti* leading to *Vimargagamana* of *Meda Dhatu* also. Above *Shloka* indicates the clear involvement of *Medovah Srotas* along with *Rasavah Srotas*. *Atisweda* and *Daurgandhya* indicate the involvement of *Swedavah Srotas*. Presence of *Ati Pipasa* indicates the involvement of *Udakavah Srotasa*. In the pathogenesis of *Medoroga*, increased fat deposition inside the muscle (*Vasa*) indicates the involvement of *Mamsavah Srotasa*.

**Agni:** *Mandagni* at *Jatharagni* or *Dhatvagni* level is considered as root cause of all diseases. Due to *Mandagni*, formation of *Ama* occurs.<sup>xvii</sup> Some of the disorders like *Ajirna*, *Alasaka*, and *Visuchika* emerge are the result of derangement of *Jatharagni* while disorders like *Medoroga* results from derangement of *Dhatvagni*. On this basis, it seems that individual *Agni* has its own pathological phenomenon.

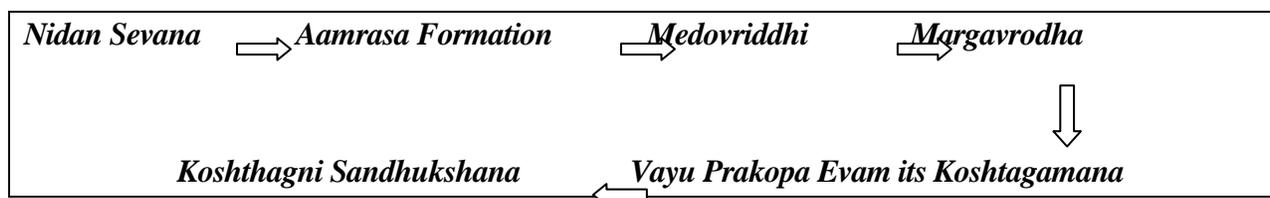
In *Medoroga*, due to vitiation of *Vata* by obstruction of *Meda*, *Teekshnagni* is a prominent feature. Here a question arise, how *Ama* formation can occur instead of *Teekshnagni*. *Chakrapani* and *Dalhana* have tried to clarify this controversy by giving explanation that in the stage of *Teekshnagni*, person goes for *Adhyashana*,

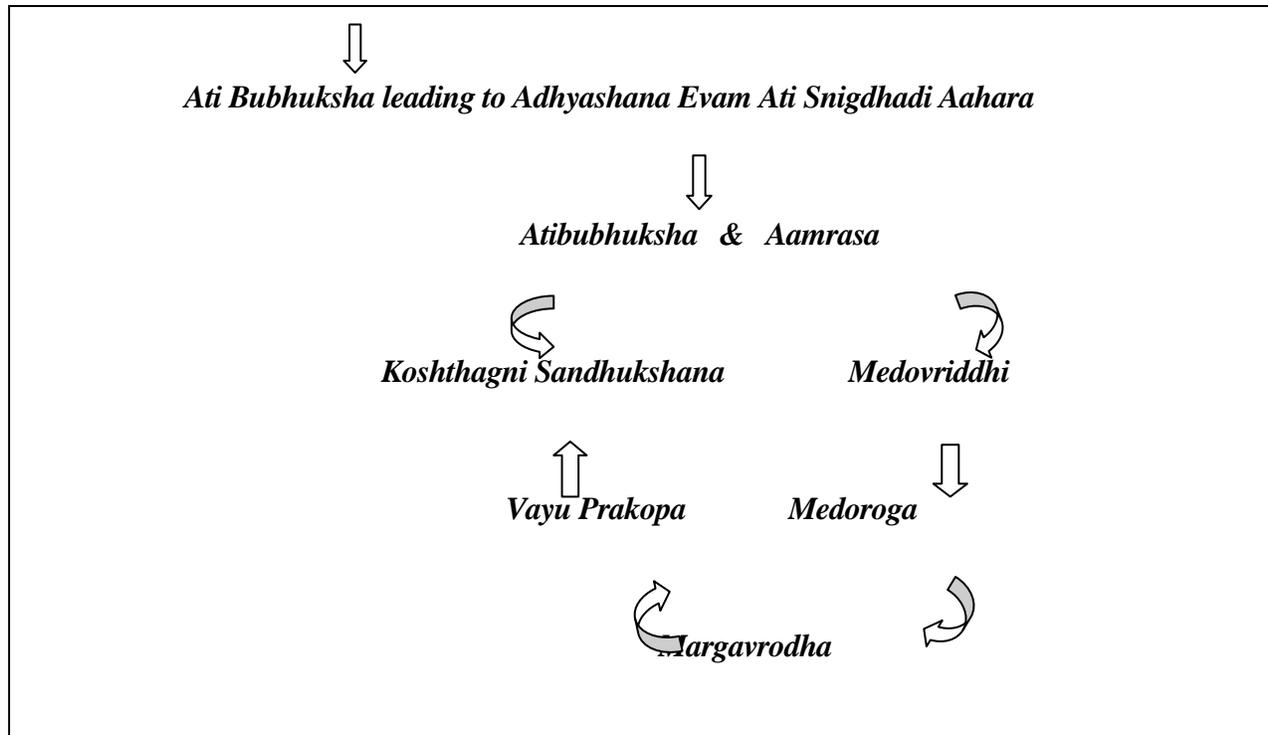
*Kalavyatita Ahara Sevanaa* again and again, which leads to disturbance in *Agni* and subsequently formation of *Ama* may take place. Moreover, *Dalhana* has explained that in the *Medoroga* formation of *Ama* is more due to decrease level of *Medodhatvagni* than *Jatharagni*.<sup>xviii</sup>

Hence the probable hypothesis about the pathogenesis of disease dyslipidemia is the production of *Ama Dosha* at various levels, particularly at the level of *Jatharagni* (*Jatharagnimandyata*) and *Sama Meda Dhatu* at the level of *Dhatwagni* (*Dhatwagnimandyata*). Here excessive *Madhuratara Annarasa* is produced which in turn leads to the production of *Ama Dosha* and causing retrovert effects on *Agni*. Dyslipidemia seems to be a disease of

*Agnivikriti* vis a vis defective metabolism. In this disease *jatharagni* and *Dhatwagni* especially *Medodhatwagni* are vitiated. Due to this *Dhatuparinama* (product of digestion) is affected so that *Medo Dhatu* is not formed properly. *Ama Dosha* is formed at various levels and it interacts with different *Dhatus*. In nutshell due to *Medodhatwagnimandyata* excessive production of *Sama Meda Dhatu* is resulted which causes the *Medo Roga*. This *Sama Meda* is accumulated in the body and deposits in various *Srotases* leading to *srotorodha* resulting in various complications. On the basis of their clinical manifestations *Sthaulya* may be correlated with the term *Medo roga*.

The whole process of manifestation of *Medoroga* can be described as below:<sup>xix</sup>





**Discussion:** As discussed earlier when *Dusta Meda* (improperly formed) is increased extensively it give rise to various clinical manifestation known as *Medoroga*. *Medoroga* and *Medodosha* have been described to the synonyms of each other. Literally it means disease where *Medodhatu* is involved. *Acharyas* tried to distinguish two type of *Medoroga* first is *Medodusti* (Dyslipidemia) and second is *Sthaulya* (Adiposity).

**Sthaulya:** *Sthaulya* is a disease of *Medodhatu*. Here both *Poshaka* and *Poshya Medas* are increased. If it is kept untreated for a long time and the patient continue to expose the same *Nidana*, *Medodhatu* is again markedly increased and *Atisthauilya*

will result. Due to *Medodhatwagni Medas* is not converted to further *dhatu*s. The increased *Medas* do *avarana* to *marga* of *Vata*. So *vayu* will circulate in *kostha* more and increases *Koshthagni*. Then the patient eats more and it is again converted into *Medas*. Increased *Medas* again prevent the conversion of *Medas* to *Uttar dhatu*s by *avarana*. The *Medas* will accumulate more in *Udara*, *Stana*, *Uru* and *sphiga area* and *lambana* of these organs can be seen. If this is prolonged and increased it will cause death of the patient.

Most of the *Sthaulya* patients have high cholesterol and triglyceride level. Although hyperlipidemia especially especially hypertriglyceridemia is more common with

the patients having central obesity, apple shape obesity or abdominal obesity. Such patients are more prone to metabolic syndrome related disease such as diabetes mellitus, coronary artery disease, hypertension, peripheral vascular disease, dyslipidemia etc.

Treatment of *Sthaulya* is *Vatashamaka* and *slesmameda Shamana*. Drug with the property of *Guru Guna* and *Ruksha Guna* with *Aptarpana Karma* can be used<sup>xx</sup>. *Nitya langana* (therapy of lightness) is the treatment principle for *Atisthaulya*. *Pranayama* techniques increase the lung capacity and help burning fats. Regular practice of *Pranayama* brings balance in the system in terms of Physical and Mental functions.<sup>xxi</sup>

**Conclusion:** The obesity danger disease under 10 in the world. The sedentary life style, lack of physical exercise, faulty dietary habits (excessive intake of sweet, heavy, unctuous and cold food items) and urbanization precipitate the disease

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*Sthaulya. Kaphaprakriti* persons are more prone to obesity so they should be advised proper diet regimens and exercise. *Nitya langana* (therapy of lightness) is the treatment principle for *Atisthaulya*. Regular practice of *Pranayama* brings balance in the system in terms of Physical and Mental functions.

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