

## A CRITICAL REVIEW OF MEDOVRUDHHI WITH SPECIAL REFERENCE TO OVERWEIGHT

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### ABSTRACT

It's very important to take steps to tackle obesity because; it can lead to a number of serious and potentially life-threatening conditions, such as: type 2 diabetes, Coronary heart disease. Overweight (Medovrudhhi) is increasingly prevalent condition among all societies in today's era. If left untreated, this condition greatly raises the risk of developing the condition into obesity (sthoulya). In ayurveda context Medovrudhhi and Shoulya are described separately. Medovrudhhi i.e. increase in MedoDhatu (Medovrudhhi) is a condition of second stage (prakopa) of Shatkriyakala (disease formation) and Shoulya in relocation (sthansamshraya) i.e. actual stage of disease formation. So in

pathogenesis of sthoulya, medovrudhhi is a previous condition of Sthoulya Obesity or overweight brings many significant risks throughout life. Considering its impact on individual health, obese and overweight individual's puts burden on the national health Schemes. This article is about overweight and its details, described in various texts of Ayurveda. In present study an attempt has been made to understand Overweight through Modern and Ayurvedic perspective and to find out the likely solutions to avoid next condition i.e. obesity.

**KEYWORDS:** Medovrudhhi, Overweight, Sthoulya, Obesity.

### INTRODUCTION

The nature has taught man how to be healthy before the science has discovered the laws of health. Obesity occurs as a result of lack of physical activity with increased intake of food and sedentary lifestyle and it can be diagnosed earlier i.e. at the stage of Overweight.

Ayurveda has two aims, first to maintain the Swasthya (health) of the healthy persons and second to cure or treat disease of diseased person.<sup>[1]</sup> So keeping this aim in mind the Old Sage “Prevention is better than cure” holds true in case of obesity also. The long term danger of overweight can create numerous complications so it should be treated before developing into disease condition i.e. Sthoulya (Obesity). Acharya Sushruta also has been described while explaining the stages of formation of disease (shatkriyakal) that the vitiated Doshas should be treated in early stage before developing the disease condition and its complications.<sup>[2]</sup>

In present study the references regarding Overweight and Medovrudhhi are collected from various Ayurveda contexts, modern text and the both Medovrudhhi and Overweight symptoms, etiological factors and its management are found same.

Overweight and Obesity, as well as their related complications, are largely preventable. The management of healthier foods and regular physical activity are the easiest choice (the choice that is the most accessible, available and affordable), for preventing overweight and obesity. The goal of Overweight treatment is to reach and stay at a healthy weight. This improves overall health and lowers the risk of developing complications related to obesity.

Looking into the current scope of Overweight and its high incidence in different populations, there is a need to discuss all the references related to overweight according to Ayurveda and Modern concept.

### **Medo Dhatu Vruddhi Hetu (Etiological factors)**

Increase and decrease of the Dhatu occur due to the debility and intensity of the moity of Dhatvagni (fire like agent) respectively present within the Dhatu, just as a forest fire, though continuously burning gets flared up greatly at certain times depending upon the nature of the fuel available.<sup>[3]</sup>

According to Vagbhata Mandagni at Jatharagni and Dhatwagni level is considered as root cause of all disease.<sup>[4]</sup> Excessive ingestion of food having guru snigdha, madhur, sheeta qualities leads to Aam Ahararasa formation, which causes Jathragnimandya which leads to subsequent medodhatvagnimandya as a result excess increase of Aam Medo Dhatu formation and leads to Medovrudhhi.

Rasa is the main nutritive pool which carries along with it the nutrients of all the Dhatu, similarly the nutrients of the Sthayi (stable) and asthayi (unstable) MedoDhatu are

transported through Rasa Dhatu. So according to above reference Acharya Sushruta has also attributed Sthaulya and Karshya to Rasa Dhatu.<sup>[5]</sup>

The Commentator Chakrapani described the main characteristics of Jatharagni is Sanghatbheda (disintegration).<sup>[6]</sup> Jatharagni first disintegrate the food into small molecules to make it easily absorb. When Jatharagni function increase or decrease leads to an increase or decrease of dependant agni i.e. Dhatvagni and Bhutagni.

As Dhatu vriddhi and Kshaya depend on the moity of Dhatwagni present within the Dhatu, in case of Medovriddhi when Medodhatvagni acts upon the Sukshmabhaga i.e. Poshaka Medodhatu which has excess nutrients homologus to Medodhatu convert it into the qualitatively and quantitatively increase in sthayi Medo Dhatu i.e. Sthula Bhaga and also over production of Sweda as Mala.

The Dhatu of the body generally undergo Vriddhi by the use of food and activities which are similar materially or which possess similar properties predominantly.<sup>[7]</sup> They undergo decrease by the use of food and activities which are opposite materially or which possess opposite properties predominantly. Hence substance which are similar or dissimilar to each of the Dhatu are the causes for their quick increase or decrease respectively; because each one has its own specific effect in quickly transforming Dhatu. The nature of the food material has also its own influence on the Dhatu. Material which are identical or possess identical properties will have a sort of affinity (suitability, congenity) to the Dhatu. The use of such material will help for the Upachaya of Dhatu quickly.

All the things undergo vriddhi (increase) by use of or association with similars and Kshaya (decrease) by use of or association with dissimalars.<sup>[8]</sup>

Similarity and dissimilarity refer to the three aspects of substances i.e.

- ❖ Dravya Samanya (mass, material, substance)
- ❖ Guna Samanya (qualities, properties)
- ❖ Karma Samanya (functions)

Acharya vagbhata described the Kaph dosha vriddhi hetu. As Kapha dosha and Medo Dhatu has ashraya ashryai sambandha Kaph dosha vriddhi hetu are responsible for Medovrudhhi condition<sup>[9]</sup> and these hetu are as follows.

**Dravyataha Vriddhi:** Use of fat (ghruta taila vasa majja) as a food.

**Gunataha Vriddhi:** Diet including madhur, amla, lavan rasa, snigha guru abhishandi and shital dravya.

**Karmataha Vriddhi:** Avyayam, Avyavaya, Diwaswap, Asana Sukha, Bhojonottar Snana, Nidra, Achintanat etc.

Ashtang Sangraha has described two kinds vriddhi that is chaya and prakopa.<sup>[10]</sup> These two awastha are the stages of Shatkriyakala. Ashrayashryai relationship exists between Dosha and Dhatu so in Medovrudhhi condition both Kapha dosha and Medo Dhatu vriddhi should be taken into consideration while treating the Medovrudhhi awastha. Shatkriyakala are the six events of ascending severity of vitiated doshas. Doshas undergo increase or decrease first by the effect of food and activities then these abnormal Doshas bring abnormalities in the Dhatu which are their normal dwelling places and then in mala and channels and then the disease develop when this series of abnormality takes place inside the body. At every stage of shatkriyakal, conditions gradually become difficult to bring the vitiated Dosha Dhatu Mala to their normal conditions. Hence Shatkriyakala is essential for the subtle knowledge of disease and most important for prevention before developing the samprapti and the updravas.

### **Shatkriyakala**

There are six main stages through which any disease has to proceed to develop and manifest entirely and cause further complications.<sup>[11]</sup> It is a description of different stages of vitiated doshas if not treated in time. These six events of ascending severity of worsening condition of vitiated dosha gradually become difficult in curing diseases. Qualitative and Quantitative vitiation derangement or deviation from physiological status of doshas is of 2 types – Kshya ,Vriddhi, Both the conditions, if ignored, progress, become chronic, incurable and become dangerous so each of these six events demand immediate attention.

If Sthoulya (obesity) is diagnosed earlier at the stage of Medovrudhhi awastha, the complications of Sthoulya can be prevented hence the Chaya and Prakop awastha in Shatkriyakala are important to discuss in case of Medovrudhhi awastha.

**Sanchaya:** The stage in which doshas are stagnated in their own designated places.<sup>[12]</sup> According to Charak Medo Dhatu is one of the sites of kapha dosha. During the first stage of digestion the endogeneous production of Kapha dosha takes place i.e. in Madhurawasthapa. Excessive consumption of food material having attributes homologous to Kapha dosha result in quantitative increase in Kapha dosha which gets accumulated in its natural abodes with the Kapha i.e. at the site of MedoDhatu also. In this stage quantitative increase in MedoDhatu i.e. Dravyataha Vriddhi occurs.

**Prakopa:** Increase of doshas due to liquefaction is known as prakopa.<sup>[13]</sup> The doshas tend to come out of their designated location. In this stage, increase in vitiation of kapha dosha leading to its morbidity in the site of Medo Dhatu. As Kapha and MedoDhatu has ashrayashrayi Kind of relationship, the impairment in the Kapha Dosha results in impairment of Medo Dhatu result in gunataha vriddhi i.e. increase in their attribute so gunas of MedoDhatu snigdha, guru increases and shows the symptoms of Sthayi Meda Dhatu Vriddhi.

**Prasara:** In this stage vitiated doshas spread and extend to other parts, organs and cross the limits of their respective location and causing impairment of Doshas in other sites related to it. If adverse circumstances still continue to vitiate Dosha, they now physically leave their physiological locations are said to undergo prasara.

**Sthansamshraya:** This is true origination of disease. This is the stage of developing purvarupa. In this stage there lies a Khavaigunya in Medovaha strotas where the sammurchana of kapha and Medo Dhatu occurs and result into purvarupa.

**Vyakti:** All the signs and symptoms developed and different manifestation of the disease takes place at the site of location. The disease developed with all signs and symptoms.

**Bheda:** This stage marks chronicity of disease and leads to critical complications like Atherosclerosis, Diabetes, And Myocardial infarction etc.

So, in Sanchaya stage if dosha is managed successfully then it cannot vitiated and it maintains physiological status.<sup>[14]</sup> So, at the stage of Medovrudhhi Awastha the vitiated doshas should be treated earlier before developing towards serious pathogenesis and critical complications of Sthoulya.

### Medovrudhhi Lakshanas

Aggravated Meda Dhatu produces unctuousness of body, abdomen and flanks becomes obese, individual suffers from cough, shwasa and smell very bad.<sup>[15]</sup>

Due to increased MedoDhatu abdomen and buttocks become oversize i.e. sagging of buttock, breast, abdomen and individual suffers from breathlessness after slight strain also.<sup>[16]</sup>

**Table no. 1: (Symptoms of Medovruddhi)**

Sr.No.	Medovruddhi Symptoms	Charak	Sushruta	Ashtang Hrudaya	Ashtang Sangraha
1]	Snigdhangatam (unctuousness of body)	-	+	-	-
2]	Udar Vriddhi (increased abdominal circulation due to fat)	-	+	-	+
3]	Parshva Vriddhi (increased thigh region due to fat)	-	+	-	-
4]	Uruvriddhi (increased thigh region due to fat)	-	-	-	+
5]	Udarsphik stana lambanam	-	-	-	+
6]	Kasa	-	-	-	+
7]	Shwas /alpepi Cheshtite Shwasa (Breathlessness)	-	+	-	+
8]	Shrama (fatigue)	-	-	-	+
9]	Prameha Purvarupa	-	-	+	-
10]	Shleshma, Rakta, Mamsa Vikara	-	-	+	-
11]	Sthaulya Vikara	-	-	+	-
12]	Daurgandhyam	-	+	-	-

**Snigdhangtam:** The basic quality or Guna of MedoDhatu is Snigdhatata. Snehana is the main function of MedoDhatu. So increase in MedoDhatu increases Snigdhatata (unctuousness) in body.

**Shramam:** Due to excessive weight Medovrudhhi persons has less ability to work. He gets fatigue due to little work also.

**Alpeapicheshitishwas:** Due to increase in MedoDhatu other Datu are not developed properly resulting in Dhatu daurbalya and breathlessness while working.

**Daurgandhyam:** Sweda is the Mala of MedoDhatu. In Medovrudhhi excessive increase in formation of MedoDhatu ultimately the quantity of Sweda also increased and due to excessive sweating Medovruddhi persons have typical bad smell of their body.

**Sphikstana Udarlambanam:** Due to increase in MedoDhatu excessive fat gets deposited in abdomen buttock, chest region and because of oversize there is sagging of buttock, breast and abdomen in Medovruddhi individual.

### **Medovrudhhi Chikitsa**

Acharaya sushruta has been stated; those substances which are similar or dissimilar to each of the Dhatu are the cause of their quick increase or decrease respectively because each one has its own specific effect in quickly transforming Dhatu.<sup>[17]</sup> In Medovrudhhi condition, Medo Dhatu increase in excess quantity so at this stage Doshas should be treated earlier before developing towards serious pathogenesis and complications of Sthoulya. So it is important to treat the Doshas in Medovrudhhi condition before developing the disease and associated complications.

In Ayurveda, acharyas have described the Dhatu vriddhi kashaya chikitsa in following way- The increase of Dhatu being generally due to over nutrition and Kapha is seen predominant in such conditions. In the treatment of ailments caused by the Dhatu, the drugs or methods selected should be opposite to the Dhatu either materially, qualitatively or functionally. So according to Ashtang Sangraha vruddhi is due to kapha doshas dominance. Medovrudhhi treated by kaphaghna, medohara therapies hence the ahariya dravya Yava, yavaka, kulthi are advised in diet as its qualities are opposite to the kapha doshas and ultimately Medo Dhatu.<sup>[18]</sup> Medovrudhhi person should be given such foods which mitigate kapha, meda Dhatu. The body as well as diseases are caused by food, wholesome and unwholesome food is responsible for happiness and misery respectively. One should always take wholesome food with a view of preventing the occurrence of such diseases.<sup>[19]</sup> Shuk and shamidhanya one year after their harvesting are wholesome because they take a shorter time for cultivation as well as harvesting, so are lighter than those of taking longer time. Dehusked pulses when slightly roasted become light for digestion. so these dravyas are advised in diet of Medovrudhhi individuals because of these reasons.<sup>[20]</sup>

### **Overweight (Medovrudhhi) - Modern Review**

According to WHO criteria BMI between 25 to 29.9 categorized under overweight and BMI above 30 considered as obesity with presence or absence of co morbidities. So this condition of obesity can be diagnosed earlier at the stage of overweight and if it is diagnosed and treated earlier it will definitely will helpful in reducing the body weight and hazards of obesity.

The term overweight is generally used to indicate the excess weight that may impair health. Both term overweight and obese refer to the condition of being over the weight consider healthy for a given height and age and this condition is based on B.M.I. Generally a person with B.M.I 25- 29.9 is consider to be overweight, while person with B.M.I. greater than 30 are consider to be obese. These numbers are not a direct measure of body fat, but rather co-relation of body fat to body mass/height.<sup>[21]</sup>

#### **WHO definition is.**

- A B.M.I greater than or equal to 25 is overweight.
- A B.M.I greater than or equal to 30 is obesity.

#### **On the basis of B.M.I**

- Normal range – 18.5 -24.9
- Overweight: 25-29.9 kg/sq. meter
- Obesity(class I): 30-34.9 kg/sq. Meter
- Obesity(class II): 35-39.9kg/sq. meter
- Severe or morbid obesity(class III): 40 kg/ sq. meter

Overweight and obesity are linked to more death worldwide than underweight. Most of the world's population lives in countries where overweight and obesity kill more people than underweight.

#### **Prevalence of Overweight**

Recent WHO global estimates below:

1. Worldwide obesity has nearly tripled since 1975.
2. In 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese.
3. 39% of adults aged 18 years and over were overweight in 2016, and 13% were obese.
4. 39 million children under the age of 5 were overweight or obese in 2020.



5. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016.<sup>[22]</sup>

Overweight and obesity are major risk factors for a number of chronic diseases including diabetes, cardiovascular diseases, ischemic stroke osteoarthritis etc. Once considered a problem only in high income countries, Overweight and obesity are now dramatically on the rise in low and middle income countries particularly in urban settings.

Mortality rate increases with increasing degrees of overweight as measured by body mass index. To achieve optimum health the median body mass index for an adult population should be in the range of 21- 23 kg/sq. meter, while the goal for individual should be to maintain BMI in the ranges of 18.5 to 24.9 kg/sq. meter. There is increased risk of co-morbidities for body mass index 25.0-29.9 and moderate to severe risk of co-morbidities for body mass index 30 or greater.

Overweight is a blessing of modern age of machine and materialism which result into a clinical entity which is called as obesity. This condition of obesity can be diagnosed earlier and that is overweight So this genuine effort was done in order to reduce the conditions of obesity and its associated complications because once the disease develops its adverse effect on mortality and morbidity also increases.

#### **Reasons for increasing prevalence of overweight**

**Increasing energy intake:** increase portion sizes, snacking and loss of regular meals, increased energy dense food (mainly fat), increase affluence.

**Increasing energy expenditure:** increase car ownership, decrease walking to school/ work, increase automation and decrease manual labour, decrease sports in schools, increase time spent on computer games and watching TV, increase central heating.

**Endocrine factors:** hypothyroidism, Cushing syndrome, insulinoma, hypothalamic tumours or injury.

**Drug treatments:** beta blockers, tricyclic antidepressants, Corticosteroids, sulphonyl ureas, estrogens containing contraceptive pills, corticosteroids, sodium valproate.

### **Complications of overweight/obesity**

Obesity has adverse effects on both mortality and morbidity. It is suggested that obesity at the age 40 years can reduce life expectancy by up to 7 yrs. for non-smokers and by 13 years for smokers. Coronary heart diseases is the major cause of death but cancer rates are also increased in the males and obesity especially colorectal cancer and cancer of gallbladder ,biliary tract ,breast endometrium and cervix in females. Obesity has been accompanied by type 2 diabetes and osteoarthritis, particularly of the knee. Although an increased body size result in greater bone density through increased mechanical stress, it is not certain whether this translates to a lower incidence of osteoporotic fractures. Obesity may have profound psychological consequences, compounded by stigmatization of the obese in many societies.

### **Clinical Assessment**

In assessing an individual presenting with overweight/obesity, the aims are to: Quantify the problem; exclude an underlying cause, identify complications, and reach a management plan. Severity of obesity can be quantified using the B.M.I. A waist circumference of > 102 cm in men or > 88cm in women indicates that the risk of metabolic and cardiovascular complication of obesity is high.

A dietary history may be helpful in guiding dietary advice, but is notoriously susceptible to underreporting of food consumption. It is important to consider pathological eating behavior such as binge eating, nocturnal eating which may be the most important issue to address in some patients. Alcohol is an important source of energy intake and should be considered in detail and the history of weight gain may help diagnose underlying cause.

### **Therapeutic option for overweight**

#### **Lifestyle advice**

Behavioral modification to avoid some of the effects of the 'obesogenic' environment is the cornerstone of the long-term control of weight. Regular eating patterns and maximizing physical activity are advised, this should be incorporated in the daily routine example walking rather than driving to work, since this is more likely to be sustained. Alternative exercise may be necessary if musculoskeletal complications prevent walking. Changes in eating behavior including food selection, portion size control, avoidance of snacking, regular meals to encourage satiety.

### Weight loss diets

In overweight people, adherence to the lifestyle advice may gradually induce weight loss along with weight loss diet also necessary. Weight loss diets involve a reduction of daily total energy of 600 kcal from the individual's normal consumption. The goal is to lose 0.5 kg per week.

### DISCUSSION

After studying the above references of Medovrudhhi and Overweight from Ayurvedic and modern text we can correlate Medovrudhhi with overweight.

Medovridhhi (overweight) is increasingly prevalent condition among all societies in today's era. These conditions greatly raise the risk for health problems and being an complex disorder involving an excessive amount of body fat as a result the condition may turned into Sthoulya(obesity). Obesity increases risk of forthcoming diseases such as heart diseases, type 2 Diabetes, Osteoarthritis, High Lipid Level and many other health problems related to it.

Acharya Sushruta has been stated that 'Madhyam Sharira' is the best but Ati Sthula or Ati Krusha is always affected with some complaints.<sup>[23]</sup> Acharya Charak has also thrown light on the eight varieties of impediments which are designated as Nindita Purusha (undesirable constitution) Atisthula is one of them. So in Ayurveda also obesity has given importance for the early management of disease.<sup>[24]</sup>

The origin and depletion of seven Dhatu are interconnected and to avoid the condition of Sthoulya it is mandatory to keep all the Dhatu in optimum quantity. by analysing the fact given to obesity by ancient scholars, it is important to analyse causes pathology and management of the disease at early stage. The appropriate management of the obesity is possible only when physician understand the sign of obesity at an early stage i.e. in medovrudhhi condition (overweight).

Acharya sushruta has been already described in sutra sthana while describing Shatkriyakala, the vitiated doshas should be treated at early stage to prevent the the disease condition. So keeping this into consideration Medovrudhhi (Overweight) should be treated first to avoid disease Shoulya (obesity) because Medovrudhhi is the earlier condition before sthansanshraya stage of dosha.

Ahara is important among these because it maintain the equilibrium state of Dosha, Dhatu and Mala. If a person follows improper diet may suffer from various health issues and obesity is one of them, so before the conditions get more worst, the risk of developing obesity should be prevented or controlled at the stage of overweight.

Though Medovrudhhi symptoms can be managed with proper diet and exercise but its better management is required for better physical wellbeing. There is increased risk of co morbidities of body mass index 25.0 to 29.9 hence in overweight; people adherence to the lifestyle advice may gradually induce weight loss along with weight loss diet also necessary. In Ayurveda ancient scholars has mentioned various dravyas that can be used to decrease Medovrudhhi symptoms. Acharya sharangsara has been described dravya having Lekhan as its Karma (Property) are very useful in reducing body fat.<sup>[25]</sup>

According to Sharangdhar Samhita dravya having Lekhana property reduces or scrapes away the unwanted Dhatu and Mala thus helpful in removing extra fat. In case of overweight healthy diet should include plenty of fibre and limited fat, cholesterol.

Symptoms of Medovrudhhi explained by sushruta & Vagbhata but Charak has only explained the sthoulya but not stated Medovrudhhi. Vagbhata has explained Medovriddhi and not sthoulya in detailed form of Nidanpanchak but he described treatment of sthoulya according to its types.

So in Samhita's also Medovrudhhi and Sthoulya described separately so we can say Medovrudhhi (overweight) is an earlier stage of Sthoulya (obesity).

The etiological factors, clinical sign symptoms and therapeutic options for the assessment of medovrudhhi are similar, so can correlate Medovrudhhi to Overweight condition.

## CONCLUSION

- Prevention is the most important key for any disease. Overall from present study it can be concluded that Medovrudhhi (Overweight) is previous condition of Obesity (Sthoulya).so Medovrudhhi should be treated at the earlier stage before developing the Sthoulya (Obesity).
- Prevalence of overweight and obesity is increasing worldwide at an alarming rate in both developed and developing countries.As Ayurveda being a holistic science which

constitutes preventive as well as treatment of diseases. So above detail study of Overweight (Medovrudhhi) will definitely helpful in preventive guidelines along with some medicinal formulation to prevent the stage of obesity.

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