

REVIEW ARTICLE

Conceptual Study of Medorog with special reference to Body Mass Index

Author: Asmita Rahul Salve¹

Co Authors: Rahul S²

^{1,2}SSAM, Hadapsar, Pune, MS, India

ABSTRACT

The term MEDOROG itself signifies predominance of med *dhatudushti*, it does not nourish next dhatu resulting in abnormalities in body's firepower and strength i.e *Agnibala*, *Dehbala* and *Dhatubala*. All these three are base of the *Vyadhikshamatwa* also these three forces are important for morbidity and mortality. According to ayurveda and modern science the definition of *Medorog* and Obesity are different but their objectives, symptoms, and side effects are similar. In Ayurveda *Medorog* is diagnosed by *lakshane of atisthaulya* states in Samhitas and Obesity diagnosed by BMI parameter. Sportsman, Gym Worker, Athletes are not counted or popular in obese person although they have B.M.I >30. Because of their exercise and balanced diet they have *PrakrutDehbala* and *Dhatwagni*. So after studying the literature of ayurveda and modern science we can treat *Medorog* obesity according to ayurveda to increase immunity and save the people from various pandemic diseases.

Key Words *Medorog*, *obesity*, *Body Mass Index(B.M.I.)*, *Vyadhikshamatwa*

Received 23rd October 22 Accepted 05th April 22 Published 10th May 2022

INTRODUCTION

Obesity in India has reached epidemic proportion in 21st century¹. As per WHO and recent studies India is ranked third in Obesity. It is mostly found in urban areas as compared to rural areas and the proportion of obesity was 42.01% (51.4% male and 32.1% in female). The present prevalence of obesity in India was 16.4 % (male 11.1% female 22.4%)² Ayurveda has described *Medorog* which can be correlated to obesity, but people are not totally aware of *Medorog* can be lead to risk of hypertension, diabetes, and other hormonal diseases also. Obese people are 28%

more likely to have heart disease than healthy people³ 30 % of overweight people have the disease, and 85 % of diabetics are overweight⁴ During this pandemic of Covid, it was observed that obese people are three times more prone to be admitted to hospitals if they have a covid infection. In addition, obesity plays a major role in increased morbidity⁵. When observing covid patients very closely and cautiously it is found that the number of patients on ventilators admitted to the ICU and the number of deaths was increasing with increasing BMI⁶. Also, *medorog* (obesity) further invites co-

REVIEW ARTICLE

morbidities like *Prameh* (Diabetes), *Hrudrog* (Hypertension), etc. But the question that comes to mind is whether every person with high BMI is obese? No, they don't. Because of their diet and exercise, they have prakrut Agni and most important the strong immunity they always look fit and healthy. Some experts and scientists have called for physical fitness during this pandemic because physical fitness decreases the severity of covid 19 [4]. So in order to know the role and causation behind it, it was important to study the *Medorog* according to *Ayurveda* and Obesity as per modern science and to plan the solution accordingly.

Materials and methods:-

Study of Medorog according to Ayurveda –
The definition of *Medorog* is explained in Samhitas like *Charak Samhita*, *Bhavprakash*, and *Madhavnidan* *Medorog* is defined as a person who has pendulous buttocks, abdomen, breast ^{img no.3} and suffers from deficient metabolism and energy due to excessive increase of excessive fat and muscles^{11,15,16}.

In *Charak Samhita Sutrasthan*² there is a description of an *ashtaunindit* (8 despicable) person. Highly obese is one of them. This shows eight defects in the body.

1. Shortening of life span
2. Hampered
3. Difficulty in sexual
4. Debility
5. . Foul smell
6. . Hunger
7. Excessive thirst

Hetu of Medorog

According to *Charak Samhita sutrasthan*¹¹; *Charak Vimansthan*¹² ; *MadhavNidan*⁷ and *Bhavprakash*¹⁵, *Meda* (fat deposit) increased in the body due to lack of physical exercise(*Avyayamad*), sleeping during day time(*Diva swapnad*), consuming food which increases *Kaphadosha*(*Shleshmaahar*), ingestion of excess fat/ oil and substance that are predominantly sweet in taste(*Madhur rasa*) and lack of mental work and a genetic disorder(*Beej swabhav*)^{Table no.1} .

Samprapti of Medorog:

Samprapti of *Medorog* is explained in *Charak Samhita*, *MadhavNidan*, and *Bhavprakash* said that all the channels supplying nutrients to other tissue get blocked by *med dhatu*...So, further tissue is not properly formed and only *Medas* get accumulated in channels. Therefore, the patient becomes weak and unable to perform any type of function.

Lakshana of Medorog:

^{Table no 2}

As per *Charak Samhita*¹¹ ; *MadhavNidan*¹⁶ the patient suffers from shortening of life, over sweating, mild dyspnoea, thirst, drowsiness, excess sleep, moaning due to overweight, body pain, excess appetite, the offensive smell from the body, incapability to work, incapability to participate in sexual intercourse. *Medas* are situated in all the living organism in the abdominal wall and that is why they also suffered from an enlarged central part of the body^{img no 3}. *Bhavprakash*¹⁵ explained some other diseases like *Twacha rog* (skin disease), *Bhagandar*

REVIEW ARTICLE

(fistula in ano), *Jwar* (fever), *Atisar* (diarrhea), *Prameh* (diabetes), *Arsha* (hemorrhoids), *Shleepad* (filariasis), *Granthi* (lipomas), *Kamala* (jaundice), and growth of microorganism due to offensive odor of sweat and *medas* afterward which become complicated¹²

Literature Study according to Modern Science:-

Obesity is traditionally defined as an increase in body weight that was greater than 20% of individuals ideal weight. The definition of obesity and overweight is based on the ratio of height and weight and abdominal circumference i.e. Body Mass Index (BMI)⁷.

$$\text{BMI defines obesity} = \text{Kg} / \text{m}^2$$

Kg= weight of person

m = square of the height of person

Normal weight= 8.9- 24.9

overweight = 25- 29.9

obese = above 30

Obesity is an abnormal accumulation of fat in adipose tissue depots of the subcutaneous tissue and mesenteries, as well as a number of other important sites associated with the connective tissue capsule and septa of many abdominal and thoracic viscera further, leads to another chronic disease^{2,8}.

Nine most common causes of obesity: (Table no.1)

1. Physical inactivity
2. Overeating
3. Genetics
4. A diet high in simple carbohydrates
5. Frequency of eating
6. Medication
7. Psychological factors
8. Disease like hypothyroidism.

Table 1 Comparison of causes of *Medorog* and Obesity

Causes of <i>Medorog</i> ^{11,12,15,16}	Causes of Obesity ^{8,9,10}
<i>Atisampurnad</i> (Overeating)	Overeating
<i>Avyayamad</i> (Physical inactivity)	Physical inactivity
<i>Diva swapnad</i>	Sleeping during day
<i>Shleshmaahar, madhurras</i>	Fatty diet and diet high in simple carbohydrates
<i>Beej swabhav</i>	Genetic

❖ Some causes like medication and disease like hypothyroidism are not particularly mentioned in *Ayurveda*.

Pathogenesis of obesity:-

Food intake and energy expenditure must be balanced to maintain healthy body weight. This balance is kept by the central nervous system which controls feeding behavior and energy metabolism by Appetite stimulating neurons and Appetite suppressing neurons⁹. Low body fat content increases feeding and more energy preservation, whereas high body fat suppresses appetite and promotes energy expenditure. Two hormones are involved Leptin secreted by adipose tissue and Insulin secreted by the pancreas. Leptin is directly proportionate to body fat. Obesity is most commonly associated with chronic low leptin activity which stimulates the

REVIEW ARTICLE

brain thinking as the body is always starved. This lead to excess eating and energy storage as fat

Signs and Symptoms of obesity: (Table no.2)

BMI >30

Fat distribution around the waist shaped obesity have less than the ratio for apple-shaped. Anatomic difference in a fat deposition:

Table 2 Comparison of symptoms of *Medorog* and Obesity

Symptoms of <i>Medorog</i> ^{11,15,16}
<i>Ayurhas</i> (Shortening of life)
<i>Kruchhavyavayata</i> (Incapability to intercourse)
<i>Daurbalya</i> (Incapability to work)
<i>Daurgandhya</i> (Offensive smell of body)
<i>Atikshudha</i>
<i>Atipipasa</i> (Excessive thirst)
<i>Swedabadh</i> (Excessive sweating)
<i>Shwas</i> (Dyspnea)
<i>Medastubhutanamudare</i> (Fat saturation at abdomen)

- ❖ But BMI criteria which decides obesity is not explained in the *Samhitas*.
- ❖ 80-90% symptoms are similar in *Medorog* and Obesity

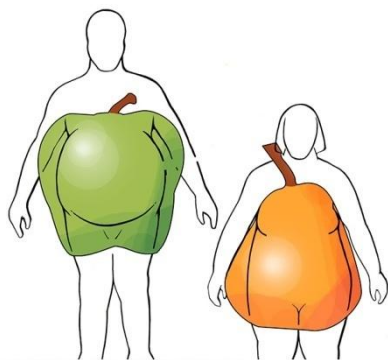


Image 1 Fat saturation and waist circumference²³

Obesity-related health problems: (Table no

3)Increasing fat saturation and waist circumference (Image. no 1) leads to some health problem like

- 1.Cancer
- 2.Cardiovascular disease
3. Diabetes type II
- 4.Osteoarthritis

5.Infertility

6. Irregular Periods

7. Nonalcoholic fatty liver

8. Sleep apnea.

Obesity also affects the quality of life and leads to psychological problems such as depression, low self-esteem shame, and self-isolation^{8,9,10}.

Table 3 Comparison of complications of *Medorog* and Obesity¹⁰

Complication of <i>Medorog</i> ^{12,15}	Complication of Obesity ^{8,9,10}
Incapability to intercourse	Diabetes
Incapability to work	Infertility
Offensive smell of body	Skin disease
Excessive hunger	Excessive thirst disease like <i>Visarpa, Bhagandar, Jwara, Atisara, Arsha, Shleepad, Apachi, Kamala</i>
Excessive sweating	Dyspnea
Fat saturation at abdomen	Fat saturation at abdomen

are explained as *apadravya* in *Bhavprakash* are only explained in *Ayurveda*¹⁵.

- ❖ And some diseases like cancer, Osteoarthritis, cardiovascular disease are only explained in modern science⁹.



Image 2 Muscles of bodybuilder²⁴



REVIEW ARTICLE

Image 3 Pendulous fat in obese²⁵

DISCUSSION

Medorog and Obesity have similar Causes, symptoms, and few complications. The pathogenesis of *Medorog* and Obesity is somewhat different. In *Medorog* it totally depends on *Agni Bala* and *Dosh Dhatu Bala* and in modern science, it is controlled by Central Nervous System^{m 9}. But deposition of *Med* or Fat can be treated by treating *vikrut dosh, dhatu, and Agni*. Another important point of BMI is not applicable in some exceptional cases. Because every person having BMI above 30 is not looking obese they do not show pendulous buttock and breast always ((Image. no 3). Body builders have BMI above 30 but because of their muscle mass (Image. no 2), bone density and body composition they cannot count in obese person or unhealthy persons. Players need quickness, speed, strength, and agility so they need low body fat while increasing muscle mass. BMI may be high but the person may not have a greater disease risk because his weight is not the result of high body weight. In Maharashtra or in Indian wrestling competitions the tournaments are performed in mud and mat categories with 10 different weight groups, which include, 57kg, 61mmkg, 65kg, 70kg, 74kg, 79kg, 86kg, 92kg, 97kg. from these, some are overweight and have BMI >30 but still they healthy and fit²¹ BMI is an inaccurate measure of body fat content and does not take into account muscle mass, bone density, and overall body composition. BMI is commonly used by doctors to screen health problems stemming

from health issues as prevention or a risk assessment but it is not a diagnostic tool¹¹⁸ that means if you are a sprinter and fall into the overweight category chances are you are healthy till even though you have higher BMI¹²¹. Players, athletes, bodybuilders, wrestlers are overweight with BMI >30 then also they are healthy persons because of their nutritious diet, their proper exercise, their *strong Agni, Dhatu, and Deh Bala* ((Image. no 2). BMI is just a guideline, it can be a good guide but keep in mind that it does not take into account your body shape, muscle mass, body composition and fitness level. So it should not be followed as a hard and fast rule. No matter what your BMI is, make sure that you are healthy and have enough energy to perform your daily activities.

CONCLUSION

From the above study and discussion we can conclude that 80-90% *Medorog* and Obesity is similar. We cannot consider the person as *Medorogi* without symptoms of *Atisthaulya* mentioned in *Samhitas*. By treating *Dhatu Agni* and *Dosha* we can treat *Medorog* and Obesity as per *Ayurvedic* treatment explained in *Ayurvedic Samhitas*. *Medorog* cannot be diagnosed only on the basis of BMI Criteria.

REVIEW ARTICLE

References:

1. https://en.wikipedia.org/wiki/Obesity_in_India
2. Obesity prevalence & determination among young adults, with special focus on normal weight obesity; a cross-sectional study, Rujuta Sachin Haday, Rukman Manapurann, Department of community medicine, Seth GSMC & KEM Mumbai, Maharashtra, India.
3. <https://evidence.nihr.ac.uk/alert/being-overweight-or-obese-is-linked-with-heart-disease-even-without-other-metabolic-risk-factors/>
4. <https://news.harvard.edu/gazette/story/2012/03/the-big-setup/>
5. The role of physical exercise and diet in the management of medorog reference novel coronavirus 19, International Journal of Research in pharmaceutical science 1585-1592, 2020
6. <https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.26237>
7. 22. <https://openaccesspub.org/ipj/article/926>
8. Obesity the disease, George A Bray Journal of medicinal chemistry 49(14) 4001-4007, 2006. Scholar. Google.co.in
9. Obesity is a Chronic relapsing neurological disease GA Bray, International journal of obesity 28(1,34-38,2004). Scholar.google.co.in
10. <https://www.mayoclinic.org/diseases-conditions/obesity/symptoms-causes/syc-20375742>
11. Sharma PV. Charak Samhita with English Translation Vol-1, Reprint edition, Varanasi: Chaukhamba Orientalia, pg 145.
12. Jadhavji TA. Charak Samhita with Ayurveda Dipika Commentary of Chakrapanidatta, Reprint edition, Varanasi: Chaukhamba Sanskrit Sansthan pg 270
13. Jadhavji TA. Charak Samhita with Ayurveda Dipika Commentary of Chakrapanidatta, Reprint edition, Varanasi: Chaukhamba Sanskrit Sansthan pg 269.
14. Jadhavji TA. Charak Samhita with Ayurveda Dipika Commentary of Chakrapanidatta, Reprint edition, Varanasi: Chaukhamba Sanskrit Sansthan pg 394.
15. Sitaram B. Bhav Prakash of Bhavmishra, Reprint edition, Varanasi, Chaukhamba Orientalia, pg 144, 145
16. Upadhyay Y. Madhavnidan Madhukoshvyakhya, Vol 2 Reprint edition, Varanasi: Chaukhamba Sanskrit Sansthan pg 28, 29.
17. Sharma PV. Charak Samhita with English Translation Vol-1, Reprint edition, Varanasi: Chaukhamba Orientalia; 2008, pg 144
18. Researchgate.net, Anthropometric characteristics and body composition of Italian national wrestlers march 2022, European journal of sports science 12(2):145-151 DOI-
19. <https://www.businessinsider.com> why 400-pound sumo wrestlers do not suffer from obesity symptoms.
20. <https://www.riversidecorporatewellness.com>, weight body composition and sumo wrestlers thinking beyond the scale 09 Apr. 2019
21. www.punekarnews.in, Home/Pune/schedule for 63rd Maharashtra Kesari wrestling competition announced.

REVIEW ARTICLE

22. <https://www.uptodate.com>, covid 19 return to play or strenuous activity following infection

Image

23. <https://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/multimedia/apple-and-pear-body-shapes/IMG-20006114>

24. <https://www.google.com/search?sxsrf=AOaemvLyvwNK0iSHIAAnVRA07WOgeSI0uKg:1634980427391&source=univ&tbm=isch&q=body>

25. <https://www.google.com/search?q=sketch+image+of+obese+person&tbm=isch&ved=>