



Review Article

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PREVENTION AND MANAGEMENT OF OBESITY

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ABSTRACT

Living in the twenty first century has its advantages but along with fast lifestyle comes disadvantages. One disadvantage is having faulty lifestyle and unhealthy diet. Around the world diabetes, obesity and cardiovascular diseases are affecting the health and well being of millions of people due to faulty lifestyle. Among these Obesity is the world's oldest metabolic disorder. The WHO now considers obesity to be a Global epidemic and a public health problem. Sedentary habits with little exercise are the main reason behind increased incidence of Obesity. Obesity can lead to heart problems, diabetes and other serious health problems, which can cost millions to treat, and which can reduce life expectancy. Modern drugs for the treatment of obesity include appetite suppressants and lipase inhibitor which has its own side effects. Ayurveda advocates healthy life style through ahar, vihar, aushadh and different kinds of karmas to prevent all kind of diseases. By following virtuous life style as described in Ayurveda one can prevent himself from obesity and reduce its risks to develop various killer ailments which will be discuss in full paper.

Keywords: Lifestyle disorders, Obesity, Risk factors, Safe and Effective treatment.

INTRODUCTION

In recent years, India has managed to control communicable diseases like malaria, cholera and polio. However, the nation now has to deal with a new breed of developed world that is Obesity. Coupled with a sedentary lifestyle and faulty diet, the urban youth are particularly prone to the lifestyle diseases. Obesity and overweight are defined as abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of his or her height (in meters). A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight. Obesity and overweight are major risk factors for a number of chronic diseases including diabetes, cardiovascular diseases and cancer¹. Modern drugs for treatment of obesity have a list of its side effects along with high cost. On contrary Ayurveda is not only a medical science but also a way of healthy living. Apart from prescribing treatment to various chronic and complex diseases, Ayurveda also emphasizes on an ideal method of healthy living. A special section of Ayurveda, swasthavritta deals with the science of health and the code for a healthy conduct. It is the modest attempt to make aware people, patients and doctor and friends about Obesity.

Incidence

- Obesity has reached epidemic proportions in the 21st century, with morbid obesity affecting 5 % of the country's population.
- Urbanization and modernization has been associated with obesity. In Northern India, obesity is most prevalent in urban populations (male = 5.5 %, female = 12.6 %), followed by the urban slums (male = 1.9 %, female = 7.2 %).

- Socioeconomic class also has an effect on the rate of obesity. Women of high socioeconomic class have rates of 10.4 % as opposed to 0.9 % in women of low socioeconomic class.

Etiological factors

- Modern life: (Sedentary habits with little exercise)
- Faulty diet: People are taking more junk and fatty foods. Due to these diet habits, more fat is stored in the body causing obesity.
- Alcohol consumption
- Emotional distress: People tend to eat more, when they are; upset, anxious, under stress and feeling boredom.
- Hereditary.
- Increasing affluence
- Little outdoor activity
- Spending more time watching television and playing computer game
- Nutrition and pregnancy: One theory is that when children are under nourished in the womb of their mother, when become adults, they usually develop abdominal fat, even with the normal diet. This put them at greater risk of obesity related illnesses^{1,2}.

Symptoms of obesity

Being a little overweight may not cause many noticeable problems. However, once you are carrying a few extra kilograms, you may develop symptoms that affect your daily life.

Short-term problems

Obesity causes day-to-day problems such as:

- breathlessness
- increased sweating
- snoring

- difficulty sleeping
- inability to cope with sudden physical activity
- feeling very tired every day
- back and joint pains

Long-term problems

Obesity can also cause changes that one may not notice that can seriously harm health, such as:

- hypertension
- high cholesterol levels

Both conditions significantly increase risk of developing a cardiovascular disease, such as:

- coronary heart disease, which may lead to a heart attack
- Stroke, which can cause significant disability and can be fatal².

Difference between obesity and overweight

To differentiate between the two, a general definition for being overweight is when a person weighs more than what is considered to be healthy for his age and height while obesity is when body weight is the result of an accumulation of fat. A more concise definition for being overweight or being obese can be had by calculating a person's body mass index or BMI.

BMI is defined as the subject's mass divided by the square of their height, expressed kilograms per square meter and calculated as:

$$\text{BMI} = \text{mass (in kg) divided by height (in meter)}^2$$

BMI	Classification
< 18.5	Underweight
18.5-24.9	Normal Weight
25.0-29.9	Overweight
30.0-34.9	Class I Obesity
35.0-39.9	Class II Obesity
>40	Class III Obesity

Pathology and physiology of obesity

Excess weight results from an imbalance between caloric intake and energy expended over time. Environmental influences, such as food availability, food advertising, and emotional distress can add to the appeal of food and lead to increased caloric intake. Obesity is also associated with imbalances in the peptide hormones associated with satiety and adiposity signaling.

Risk factors of Obesity

Obesity increases the risk of many physical and mental conditions such as Osteoarthritis, Obstructive sleep apnea, Social stigmatization, Diabetes, Cancer and Cardiovascular diseases²

Modern treatment and its limitations

- The main treatment for obesity consists of dieting and physical exercise. Diet programs may produce weight loss over the short term, but maintaining this weight loss is frequently difficult and often requires making exercise and a lower calorie diet a permanent part of a person's lifestyle.
- Success rates of long-term weight loss maintenance with lifestyle changes are low ranging from 2 to 20 %.

- There is little information on how these antiobesity drugs affect long term and complications of those are very common. Its use is associated with high rates of gastrointestinal side effects.
- The most effective treatment for obesity is bariatric surgery. Surgery for severe obesity is associated with long-term weight loss and decreased overall mortality. So it is better to seek safe and effective treatment measures to prevent obesity by applying principles of Ayurveda.

Obesity in Ayurveda

- Obesity has been described as Sthaulya or Medoroga in Ayurvedic texts. It is described under the caption of Santarpanottha Vikar (Disease caused by over nourishment)³. Meda dhatu (adipose tissue) is the site of metabolic disturbance in an obese individual. Meda becomes increased due to ingestion of excessive sneha and madhur rasa⁴.
- Sthaulya (obesity) is considered as one of the eight types of undesirable conditions as described by Acharya Charaka. A person in whom there is excessive accumulation of Meda (fat/adipose tissue) and Mamsa (flesh/muscle tissue) leading to flabbiness of hips, abdomen, and breast has been categorized as Atisthula. Medas is body tissue predominant in Prithvi and Aap Mahabhut as similar to Kapha Dosha⁵.

Nidan (causative factors) of Sthoulya

All the causative factors described in Ayurvedic classics can be classified into four groups:

1. Aharatmaka Nidana (Dietary)
2. Viharatmaka Nidana (Regimens)
3. Manas Nidana (Psychological)
4. Anya Nidana (Others)

Aharatmaka Nidana

Santarpana (over nourishing), Adhyasana (over eating), excessive consumption of Guru (Heavy food), Madhura (sweet food), Sheeta (cold diet), Snigdha (unctuous food), Sleshmala, Navannasevana (Usage of fresh grains)⁶. Excessive usage of Nava madya (fresh alcoholic preparation), Gramya Rasa (domestic animal's meat and soups), Audak Rasa (Aquatic animal's meat and soups), Mamsa (meat), Paya Vikar (milk and its preparations), Dadhi (curd), Sarpi (Ghee), Ikshu Vikara (sugarcane's preparations), Guda Vikara (jaggery's preparations), Shali (Rice), Godhum (wheat), Masha (Black gram), Rasayan Sevana (Aphrodisiacs), Vrushya Sevana (Rejuvenateives), Bhojanotara Jal-pana (Drinking water after food)^{6,7}.

Viharatmaka Nidana

Avyayam (Lack of physical exercise), Avyavaya (Lack of sexual life), Divaswap (Day's sleep), Asana Sukha (Luxurious sitting), Swapnaprasangat (Excessive sleep), Gandhamalyanu Sevana (Using of perfumes garlands), Bhojanotar snana (Bathing after taking the meals), Bhojanotar Nidra (Sleeping soon after meal), Bhojanotar Aushadha sevana (Drugs after meal).

Manasyaparatomaka Nidana

Harshnityatvat (uninterrupted cheerfulness), Achintanat (Lack of anxiety), Manasonivritti (Relaxation from tension), Priyadarshana (Observations of beloved things), Saukhyena

Anyanidana

Amarasa, Snigdha Madhura Basti Sevana (Administration of unctuous and Sweet enema), Tailabhyanga (Massaging of oil), Snigdha Udvartana (Unctuous unction), Bijadoshasvabhavat (Heridity)

Samprapti

Consumption of Guru (heavy to digest), Sheeta (cold), Snigdha (unctuous), Madhuradi Kaphavardhaka (sweet and Kapha increasing) drugs along with lack of exercise and sedentary life style result in excessive nourishment of Medas while other bodily elements (Dhatus) are deprived of nourishment resulting in Sthoulya.

Impact of Sthoulya

Disproportionately increased Medas is accountable for several serious consequences reported in Charaka and Sushrut Samhita like

- Ayuhrasa (decrease of life span),
- Javoparodha (decrease in enthusiasm and activity),
- Krichravayavata (difficulty in sexual act),
- Dourbalya (decrease of strength),
- Dourgandhya (bad odor),
- Swedabadha (excess perspiration) and
- Kshut Pipasadhikya (excessive hunger and thirst)
- Mandotsaham (less activity referring to sedentary lifestyle),
- Atisnigdham (excessive intake of fatty substances),
- Atisthaulyam (gross obesity), and Mahashanam (excessive eating)⁸.

Ayurveda management of Obesity

According to Acharya Charak, Shoulya (obesity) is more dangerous than Karshya (emaciation) so treatment for obese person has to be done very carefully⁹. In Ayurveda, management of any disorder is divided into 3 parts.

1. Nidan Parivarjan
2. Shodhana
3. Shamana¹⁰.

Nidan Parivarjan

It is the first line of treatment of any disease and it is most important line of treatment for Sthoulya also. It says that the root of Samprapti process, Nidana must be avoided for best management of the disease. In Sthoulya the factors i.e. Aharatmaka Viharatmak, manas and others which are mentioned earlier and which are responsible for the causation of the disease should be avoided.

Shodhan Therapy

Meaning of Shodhana is Apakarshana of dosha. Therapies in which the aggravated doshas or the excretory product of digestion are eliminated after mobilizing them from their respective sites, by Urdhva or Adhah marga from the body is known as Shodhana therapy. It is also termed as

Apakarshan. There are two main parts of Shodhana therapy.

Bahya Shodhana (Udavartana, Avagah, Parisheka, Lepana)

Abhyantar Shodhana (Vamana, Virechana, Nasya, Niruha)

Bahya Shodhana

Many Acharyas have mentioned external purification therapy for management of Sthoulya. In all classical texts, Udvartan was mentioned as part of Dincharya and for Sthoulya Raksha Udvartan was narrated by Acharyas. The benefits of Udvartan was also mentioned i.e. Kaphahara, Medasah Pravilayanm, Sthirikaranam Anganam and Tvaka Prashadakar. In Sthoulya Udvartan posses removes the foetid odor, restricts the process of excessive sweating, and alleviates the aggravated doshas by function.

Abhyantar Shodhana

Being a syndrome entity Shodhan therapy is highly recommended for Sthoulya management. According to texts, patients with Ati Sthoulya, Adhika Dosha and Adhika Bala should be treated with Shodhana therapy including Vamana, Vireachana, Ruksha Niruha, Raktamokshana and Shirovirechana. Asthapan Basti particularly Lekhan Basti is highly recommended for management of Sthoulya by ancient Ayurvedic physicians. Lekhan or Karshana Basti helps to remove abstraction of Meda, Kapha and Kleda from Srotas by its veerya and helps to alleviate vitiated Vata and normalize the function of Agni and Vayu.

Shamana Therapy

Among Sad Upakrama (Six types of therapies), Langhana and Rukshana can be administrated for Shaman purpose in Sthoulya. Shaman Chikitsa can be implemented through seven different ways. Deepan, Pachana, Kshudha Nigraha, Trisha Nigraha, Vyayama, Atapasevan and Marutsevan^{11,12}. Charak Samhita has given treatment in following words. Administration of Guru and Apatarpan articles which possess additional Vata, Slesma and Meda Nasaka properties is considered as an ideal for Shaman therapy¹³. Different medicaments for Sthoulya: Single drugs like Haridra, Katushigru, Chitraka, Nirgundi, Vidang, Agnimantha, Chakramarda, Madhu (honey), Guggulu, Vacha, Ativisha, Bala, Haritaki, Rasanjan, Musta, Yava, etc^{13,14}.

Compound Drugs

Medoharayoga, Navak Guggulu, Varunadi Ghanvati, Triphala, *Piper nigrum* compounds Vyoshadhya Saktu, Lekhaniya Mahakashya, Lekhan Vati, Mahamanjisthadi quatha, Trigunadi Guggulu, Medohara Guggulu, Chitrakadi Vati, Amrutadi Guggulu, Triphala Guggulu, Vidangadi Churna, Medohara Vati, Vidangadi Loha, Lauha Rasayan, Badavagni Rasa, Arogyavardhini, Triyushnadi Loha, Navayas Loha, etc^{15,16}.

Yoga and pranayamas

- Pacchimottanasana,
- Halasana,
- Dhanurasana
- Chakrasana,
- Veerasana,
- Bhujangasana,
- Trikonasana
- Sarvangasana,
- Ardha Matsyendrasana, etc
- Nadi Shuddhi Pranayam and Kapalbhata shuddhikriya

Role of Diet and Exercise

Obesity results from an energy imbalance. This involves eating too many calories and not getting enough physical activity. Maintaining a healthy weight is all about balancing the number of calories you take in with the number you burn off through exercise.

A healthy diet emphasizes fruits, vegetables, cooked dry beans and peas, whole grains, nuts and seeds. It also includes an increase in seafood, fat-free and low-fat milk product low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars. One should make exercise a part of daily life – exercising regularly like walking, jogging, running, swimming, cycling and other physical activities can help to lose weight safely and keep it off^{7,18}.

CONCLUSION

In conclusion, it seems that we need to reassess entire lifestyle if we want to avoid the problems associated with obesity. Modern drugs are not advisable as they have lots of complications hence it is better to follow Ayurveda principles for healthy lifestyle. We can combine this healthy lifestyle with safe and effective treatment of Ayurveda to prevent and manage Obesity.

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