CURRENT SCENARIO OF OBESITY

Abstract

A common metabolic condition brought on by host-environmental interactions is obesity. The financial burden on obese persons is great. There are numerous types of therapeutic and preventive solutions that are highly desired. The majority of these drugs are, however, pricey and temporary. Additional pathological and therapeutic studies are badly needed to treat this particular sort of energy disruption, glucose homeostasis, and adipose dysfunction. Genetic, molecular, physiological, behavioral, environmental, and therapeutic techniques are all currently being used to totally adapt the human body to be in good form. The excessive or abnormal accumulation of fat or adipose tissue that may be detrimental to health is referred to as obesity. Over the past 50 years, the obesity epidemic has gotten worse. An estimated $100 billion is the yearly financial burden that the US bears. There are several etiologies for obesity, making it a complex condition. After smoking, it is the second most common preventable cause of death. This exercise examines the etiology, pathophysiology, symptoms, and problems related to obesity with a focus on the importance of a multidisciplinary approach to management.

Keywords: Obesity,Body Mass Index,Waist hip ratio, Increased blood glucose level, High Blood Pressure, Hyperlipidemia, intraabdominal Pressure.

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I. INTRODUCTION

Obesity, characterized by the abnormal or excessive accumulation of fat or adipose tissue in the body, has a detrimental impact on health as it increases the risk of diabetes, heart disease, hypertension, and hyperlipidemia. Over the past five decades, this major public health epidemic has worsened, and it is a multifaceted condition with various contributing factors. It ranks as the second most common preventable cause of death, following smoking. Addressing obesity requires a multifaceted, lifelong approach, as a 5% to 10% reduction in weight can significantly enhance an individual's health, quality of life, and financial well-being both locally and globally [1–5]. The body mass index (BMI), calculated as weight (kg) divided by height (m), is used to define obesity. However, BMI may not provide the most accurate assessment in certain populations, such as Asians and the elderly. Normal BMI values may conceal underlying excess fat, which can be accessed through measurements of skin thickness in the triceps, biceps, subscapular, and supra-iliac regions.

II. ETIOLOGY

Uncontrollably gaining weight as a result of an imbalance between daily energy intake and expenditure is the cause of obesity. A complex condition, obesity is influenced by a wide range of genetic, social, and cultural variables. The identification of several genes linked to obesity and weight gain has provided strong evidence of the significant heredity of the condition. Reduced physical activity, sleep issues, hormonal issues, medication, availability and consumption of high-carb and high-sugar meals, and slowed energy metabolism are some of the additional reasons of obesity.

Pathophysiology: The adipocyte hormone leptin lowers body weight and calorie intake. Adipose tissue releases free fatty acids and adipokines, which lead to increased triglyceride levels, insulin resistance, and systemic inflammation. These factors all have a role in the development of obesity.Another causes also there will be increased fatty acid buildup in the heart it can result in left ventricular dysfunction. Obesity also associated with various diseases such as diabetes mellitus, heart disease, stroke, gallstone, fatty liver, sleep apnea.
The following factors, in addition to total body fat, raise the morbidity of obesity:

- Waist circumference (the prognosis for abdominal fat is dismal)
- Body fat heterogeneity (fat distribution)
- Intra-abdominal pressure
- Age of obesity onset

Ruder man et al. made the initial argument that metabolically obese normal weight (MONW) people with normal BMI can also experience metabolic issues[9].

Metabolically healthy obese (MHO) people with a BMI over 30 kg/m2 the people does not show any signs of insulin resistance or dyslipidaemia. [10][11]. It has been demonstrated that adipocytes exhibit prothrombotic and inflammatory activities, which can raise the risk of strokes. In addition to adipocytes and preadipocytes, macrophages that have invaded the tissue as a result of obesity also create adipokines. [12][13].

In visceral obesity, aberrant adipokine production may cause chronic low-grade inflammation that alters lipid and glucose metabolism and increases the risk of cardiac metabolic disease. [12]Because of its ability to reduce inflammation and increase insulin sensitivity, circulating levels of adiponectin are inversely correlated with visceral adiposity.

III. EXAMINATION

Physicians should thoroughly examine patients for underlying conditions that contribute to obesity. An exhaustive history should contain:

- History of childhood weight
- Previous weight loss attempts and outcomes
- Whole history of nutrition
- Sleep habits
- Past medical history& family history.
- Drug history
- Personal history.
- Vital signs & measurements of waist and hip circumference,
- Check the Height and weight of the patient.

IV. EVALUATION

Weight in kilos divided by height in meters squared yields the BMI[14][15][16][17][18]. BMI can be used to categorize obesity:

- It's considered underweight to be 18.5 kg/m2.
- Between 18.5 and 24.9 kg/m2 is regarded as typical.
- Overweight is defined as 25 to 29.9 kg/m2 or more.
- Between 30 kg/m2 to 34.9 kg/m2 is considered Class I obesity.
- The weight/m2 range for class II obesity is 35–39.9 kg/m2.
- Over 40 kg/m2 is considered Class III obesity

Assessing the waist-hip ratio holds significance, with values of greater than 1:1 for men and greater than 0.8 for women being of particular concern. To detect potential underlying medical conditions, a comprehensive laboratory examination may encompass various tests, including but not limited to CBC, basic metabolic panel, renal function assessment, liver function study, lipid profile, HbA1C, TSH, vitamin D levels, urine analysis, CRP, as well as additional assessments such as ECG and sleep studies.

V. TREATMENT AND MANAGEMENT

Obesity is associated with a range of comorbid and chronic medical conditions, necessitating a multifaceted approach involving specialized healthcare professionals for effective treatment. Treatment plans should be customized to meet each patient's specific needs, with a focus on addressing any underlying secondary causes of obesity. The comprehensive management strategy should encompass dietary modifications, behavioral therapies, medication when appropriate, and, if necessary, surgical intervention. Personalized

dietary adjustments must be implemented, and regular monitoring of weight reduction progress is essential. It's important to note that foods with fewer calories may also have reduced carbohydrates or lipids. In the initial months, a low-carb diet may lead to more significant weight loss compared to a low-fat diet. Patients should be consistently reminded of the importance of adhering to their dietary plans.

1. **Medication**: Anti-obesity medications may be used to treat individuals with BMIs greater than or equal to 30 or greater than or equal to 27 who also have comorbid conditions. Medication can be taken in addition to modifications in diet, exercise, and behavior. Some of the anti-obesity medications that have been approved by the FDA include diethylpropion, orlistat, lorcaserin, liraglutide, phentermine/topiramate, naltrexone/bupropion, and phendimetrazine. Every agent is used to regulate weight over the long term.

2. **Surgery**: It is recommended when a patient has a BMI of at least 35 with significant comorbid conditions, or a BMI of at least 40. The patient must adhere to post-surgery lifestyle advice as well as appointment and exercise schedules. Patients should be given a full evaluation of the surgical risks prior to surgery. Common bariatric operations include the Rou-en-Y gastric bypass, the adjustable gastric band, and the sleeve gastrectomy. The most popular procedure, a gastric bypass, can provide quick weight loss. Examples of early postoperative issues include leaks, infections, postoperative bleeding, thrombosis, and cardiac events. Malabsorption, vitamin and mineral deficiencies, dumping syndrome, and refeeding syndrome are a few examples of late effects[19][20][21].

VII. COMPLICATIONS OF WEIGHT REDUCTION INCLUDE

- Electrolyte abnormalities, particularly hypokalemia
- heart abnormalities
- Hyperuricemia
- Cholelithiasis

VIII. DIFFERENTIAL DIAGNOSIS

- Acromegaly,
- Dolorosa Ascites,
- Cushing Disease
- Hypothyroidism

IX. PROGNOSTICATION

Huge morbidity and mortality rates are associated with obesity. Patients who are obese are at an increased risk for unfavorable cardiac events and cerebrovascular accident. In addition, life is of terrible quality. The following factors worsen morbidity:

- Age at which obesity starts.
- a measure of central obesity
- Obesity severity
- Gender

- Concomitant comorbidity
- Race

XI. CONCLUSION

Enhancing Healthcare Team Outcomes: The obesity pandemic is becoming a bigger public health concern as it spreads. An interprofessional team of a bariatric nurse, surgeon, internist, primary care physician, endocrinologist, and pharmacist is ideally suited to manage and prevent obesity. There is now no known treatment for obesity, and the ones that are available are nearly all associated with dangers and unfavorable outcomes.

The patient is to be made aware of the importance of changing one's lifestyle. Every medical professional who cares for obese patients owes it to them to make them aware of the risks involved with their diseases. No treatment will work on a patient who is sedentary. Even after surgery, you still need to exercise to avoid gaining weight. At this time, all available treatments for obesity are not a miracle cure.

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