



A review on Management of Obesity

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Review Article

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ABSTRACT

Obesity is one of the most challenging conditions that primary care physicians face in their profession. Despite the efforts of both patients and professionals, the condition is becoming more common. A multimodal strategy that includes food, physical exercise, and behavioral disorders is required for treatment. Drugs and surgery are also performed to receive desired results. This study summarises the data for each strategy, discusses how primary care physicians might best assist obese patients, and offers weight-loss advice.

New weight-loss techniques to treat obesity appear to have a bright future. Current medications have had limited weight reduction impacts in the overall obese population, but customized medicine will substantially impact smaller homogenous subpopulations of obese people. Multiple, complementary route drug combinations can produce double-digit weight loss in a larger, varied patient group. Furthermore, the advancement of sophisticated subcutaneous delivery technologies has paved the way for the creation of ground-breaking peptide and biologic medicines to treat obesity.

Obesity is a chronic condition that needs lifetime therapy. The BMI, waist circumference, and other risk variables are all measured in the obesity evaluation process. Diet and exercise should be part of the management plan. Only sibutramine and orlistat are FDA-approved for long-term

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usage so that they can be administered to selected individuals. The only alternative that produces persistent and considerable weight loss is bariatric surgery, provided to very obese individuals.

Keywords: Obesity; combination therapy; bariatric therapy; exercise.

1. INTRODUCTION

Obesity is a fast-spreading epidemic that raises the risk of illness and mortality worldwide. Obesity is thought to be responsible for up to 300,000 fatalities each year in the United States; however, this statistic is debatable.

The project aims to conduct a comprehensive assessment of the existing evidence for obesity weight reduction therapies (lifestyle, surgical, and pharmaceutical) in people over 60, adolescents, and children.

Obesity has reached pandemic proportions in the United States. Recognizing obesity as a chronic disease allows for a better understanding of its management. The National Institutes of Health Consensus Conference on Gastrointestinal Surgery for Severe Obesity provides a paradigm for managing the highly obese, including medicinal versus surgical advice based on scientific and outcome data. Primary prevention, nutritional intervention, increased physical activity, behaviour change, and medication are all medical therapies for obesity. Obesity surgery is better known as Metabolic Surgery because it is based on the significant neural-hormonal effects of weight loss surgery on metabolism. Surgery involves a complete preoperative examination, risk assessment, and counseling in addition to the surgery itself [1].

2. DISCUSSION:

2.1 Diets

A decrease in calorie consumption is required for long-term weight loss and maintenance. On the other hand, diets are useless in the long run without behavior adjustment and ongoing assistance from health specialists. Counseling patients on how to change their behavior can help reduce fat and calorie consumption [1].

2.2 Drugs

Until further proof of safety is available, physicians should avoid prescribing medicines that guarantee weight loss for longer than the

FDA proved. This decision takes place on whether the patient will be motivated to make commitments for long-term diets and exercise changes in his daily lifestyle to lose weight and get into shape.

2.3 Appetite Suppressants

Topiramate and rimonabant have been linked to weight reduction, although the FDA has not yet authorized them for this use.

In a meta-analysis (24-week data from many trials given in abstract form), topiramate, which modifies -aminobutyric acid receptors, was linked to a 6% weight reduction, but it was also linked to a high incidence of unfavorable central nervous system effects (especially paresthesias and loss of taste).

Rimonabant is a cannabinoid-1 receptor blocker that has not yet been licensed for usage in the US. Two extensive randomized studies have shown success, with one-year weight loss of 6-kg. The stated weight reduction may be optimistic because both studies had many dropouts. The rate of mental issues (depression and anxiety) was much more significant (almost double) in the rimonabant group than in the placebo group, a result that merits additional examination [1].

2.4 Impairing Mechanism of Energy Absorption

From the ingested lipids, Orlistat prevents absorption of a fraction of energy. The FDA has authorized orlistat for two years of usage, but insurance may not be able to reimburse it. It's great for people who have diabetes, can handle a low-fat diet, and are at risk of getting the disease. Diarrhea and greasy stools are frequent gastrointestinal side effects, although they usually go away with time.

2.5 Combination Therapy

There has been insufficient research on combining different weight-loss medicines; therefore, it cannot be suggested at this time. Incretins are hormones secreted after eating and

help the pancreatic beta cells secrete more insulin. Many of these hormones have central effects that suppress appetite, and some of them (such as GLP-1) are effective in treating obesity [1].

Endoscopic enhancement of effects of RYGB when weight regain occurs.

Weight gain or plateau in RYGB patients may be linked to an increase in the gastric pouch size or the outlet that is the Roux jejunal limb's anastomosis. The processes behind the rise in the size of the gastric pouch are unknown; hence, the change in the gastric pouch might be a cause or, perhaps, a result of excessive postprandial food consumption. On the other hand, endoscopic suturing, such as purse-string suturing or sclerotherapy, can shrink the outlet and restore weight loss [2].

3. SURGERY

Although bariatric surgery people have grown significantly, the operation may still be underutilized. Surgery has not been shown to reduce mortality, and there are no long-term randomized trials to answer this topic. The most frequent metabolic surgical treatments are Roux-en-Y gastric bypass, adjustable gastric bands, sleeve gastrectomy, and biliopancreatic diversion. Preoperative diabetes, hyperlipidemia, hypertension, and obstructive sleep apnea were cured or improved in more than half of the patients [3].

3.1 Exercise

There is a lack of evidence from randomized studies to support the relevance of exercise in weight management. On the other hand, observational studies are essential and critical.

Many studies from different perspectives have concluded that healthy workouts in all ages and genders are linked to less weight gain over the years [1].

3.2 Non-exercise Activity Thermogenesis

Contribution to energy expenditure (NEAT) is by resting metabolic rate, the warmth of the food, and activity thermogenesis, classified into formal exercise and thermogenesis by nonexercise activity. NEAT refers to all energy expenditure except sleeping, eating, and organized exercise. Over the last century, the massive fall in NEAT

has coincided with an equally significant rise in obesity [1].

3.3 Facilitating Behavior Change

Performing challenging cognitive activities, coping with tough emotional circumstances, and repressing thoughts and emotions make it more challenging to resist temptation a second time. Exercise and sleep improve self-control; thus, the link between obesity and chronic sleep deprivation is not surprising. Instead of the thought of resisting oneself from temptation as a fact of willpower, it should be seen as an obstacle to getting control of where a person's attention is focused.

Obesity behavioral treatment refers to a collection of ideas and approaches aimed at assisting overweight people in changing their maladaptive eating and exercise behaviors. The components of this strategy are described in this article and the short- and long-term outcomes of therapy and the use of behavioral and pharmacologic treatments in combination. It finishes with a review of options for improving obesity treatment in primary care. The effectiveness of behavioral and pharmacologic interventions is assessed in light of the new obesity management goals, which are to assist overweight people in achieving a healthful weight rather than an ideal one. Weight decreases of 5% to 10% of baseline weight are typically enough to ameliorate weight-related problems such as hypertension, type II diabetes, and dyslipidemia, according to an increasing body of evidence. It is not required to lose weight to gain these benefits, and it is not achievable for most severely obese people. A new objective of behavioral treatment, which will be explored later, is to assist obese people in accepting smaller weight decreases [4].

3.4 Self-monitoring

Self-monitoring of behaviour is a crucial part of behavior change. Several studies have shown that patients who closely control their calorie intake lose a lot of weight. People who keep track of their calorie intake have shown to be 10 kgs fitter and better shape than those who don't.

Time-efficient self-monitoring to help with weight reduction is made easy with programs for portable devices, which have a feature of calculating calories, steps, etc [5].

3.5 Treatment of Obesity in Older Persons

There were a total of 256 lifestyle intervention papers discovered, with 69 studies satisfying the criteria. After discovering no qualifying trials for medication or bariatric surgery, the search was widened to include non-randomized research. The research includes four medication trials and 66 surgical studies. A lifestyle intervention's weight reduction efficacy was comparable in older and younger people, with beneficial effects on various critical outcomes, including physical function and cardiovascular indicators. There was a scarcity of data on obesity medications in the elderly.

Bariatric surgery data show comparable weight reduction and type 2 diabetes resolution in older adults compared to younger people, with the same or little increased complication rates. Obesity surgery or significant lifestyle changes should not be considered contraindicated solely because of one's age. There is little evidence to support clinical judgments about obesity treatment in the elderly [6].

The obese, functionally frail older adult has emerged as a new phenotype of frailty due to the increasing incidence of obesity in older populations worldwide. The convergence of the obesity pandemic and global greying will increase this concern's frequency. Due to age-related physiologic changes and a lack of consensus on specific criteria and cutoffs, there is uncertainty about the appropriate amount of obesity that should provoke an intervention. Obesity interventions for this group have also been limited due to concerns about adverse effects on lean mass, bone mineral density, and perhaps mortality [7].

3.6 Diet-based Interventions

Several trials have looked at and proven the benefits of exertion and working out as a significant aspect of reducing obesity. Mainly, all weight loss studies in this aspect include exercise and calorie deficit. One of these alone is not as effective as it may be slower to show changes [7].

3.7 Calorie-restricted Weight-loss Diets

In calorie-restricted diet vs. exercise research, calorie-restricted diets almost invariably showed more significant weight loss than activity-only

therapies. As indicated in Research, exercise regimens with no strict diet will not show promising results, whereas a calorie-deficit diet produces average baseline body weight lowerings of five percent to 10 percent.

It has several other sound effects: Studies found that an exercise program combined with an effective weight reduction diet plan was much more effective at decreasing body fat storage with improving cardio metabolism with its predisposing risk factors to obesity-related diseases recently done studies [7].

3.8 Higher-protein Weight-loss Diets

It is in agreement that the proteins needed of aged persons surpass the RDA of 0.8 g protein/kg body weight/d, with intakes of 1.5 g protein/kg body weight/d or higher recommended in high-risk settings. Protein taking above the RDA is associated with improved lean mass reservation; the benefits of high-quality (animal) protein for appendicular lean mass retention, grip strength preservation, and a decreased risk of long-term function deterioration have been verified by recent data Framingham trial. There's increased resistance to supposed stimulation due to anabolic processes with age. Although with significant research, there is a conclusion that increased protein intake counteracts the decreased sensitivity to anabolic stimulation of aged muscles. Essential long-chain proteins, particularly leucine, activate the mTOR signaling system and increase protein synthesizing in muscles, as shown in multiple short-term studies. For optimum protein synthesis in aged muscle, these studies advocate a balancing; ample protein takes during the whole day.

The so-called "muscle full" phenomenon occurs when protein being synthesized in muscles induced by amino acid inflow can't be activated again; hence balanced protein consumption, compared to consuming all the proteins in the evening meal, has been linked to improved outcomes [7].

3.9 Weight-loss Diets with other Nutrient Modifications

Vitamin D deficiency has been linked to decreased muscle mass and strength, impaired balance, gait, and a higher risk of falling. Several investigations show the workings of vitamin D in obese menopause women with low serum 25-hydroxyvitamin D levels. Both groups

participated in mild to heavy exercise. There was no diet alone arm in any of the studies conducted. Vitamin D is the second-most-studied nutrient in terms of function, after protein [7].

3.10 Treatment of Childhood Obesity

Lifestyle changes, medicines, and bariatric surgery are the three main treatment options. Recent research backs up the effectiveness of lifestyle treatments in the short term, demonstrating that persistent behavioral intervention improves the possibility of a long-term effect lasting up to two years. The latest research and regulatory choices on obesity drugs (such as orlistat, sibutramine, and metformin) are presented. New evidence suggests that bariatric surgery can lead to tremendous mass loss in obese teens, but it can also negatively affect them. An expert panel has released guidelines that change the way people think about increasing weight and provide a ground for dealing with it. All recommendations are compared to others, and they are given as a whole.

While primary prevention of childhood obesity is critical, there are currently no widely effective techniques available. An emphasis on treatment is incredibly crucial, given the enormous number of children with increased weight and their risks. A tiered approach is recommended, emphasizing early intervention and lifestyle improvements [8].

3.11 Treatment of Adolescent Over weight and Obesity

Adolescence is a sensitive time for obesity to develop, and adolescent weight strongly correlates with adult weight. Previous studies of treatment options neglected to distinguish between teenagers and children, ignoring the population's specific characteristics.

Obesity may be improved in the near term with physical excursion and diet plans. Obesity therapies, on the other hand, have a more significant effect when used together than their use alone. Psychological therapies, like therapies to test behaviors and cognition, have shown great scope in making the essential life modifications for weight improvement; so longer-scoped research and studies are required. Appraising the literature had several drawbacks. Comparisons between research are challenging due to variables and different definitions of obesity. Many researchers have failed to employ

the amount of adipose in the body in the pubertal age to assess pubertal status, or to use exclusively teenage specimens. Despite these limitations, we conclude that current data suggests that therapies with behavioral and cognition-related treatments with food plus physical exercising approaches may help reduce teenage fat; however, longer-term research and data are needed [9-15].

4. CONCLUSION

There should be a combination of more than one weight-loss tactic for a successful result and not only using one individually. Many of the methods covered in this research culminate in the LEARN program; it's a self help approach made for use in health care settings that will help get the patients started on the correct path. Consistent physical activity, the creation of relapse prevention techniques, regular follow-ups with their doctors, and support socially and emotionally from their close ones these all help predict maintaining weight; according to behavioral studies, all weight strategies overlap.

As stated before, physical exercise and workout are the strongest predictors in maintaining weight. Patients must follow a systematic workout routine and implement NEAT-increasing methods. Identifying relapse triggers and establishing strategies for dealing with them are critical abilities. When dieters believe they have consumed too much energy for the day, they are more likely to relapse. According to studies, this frequently leads to emotional eating and significant increases in energy intake. Patients should be warned not to let a single error set off a chain reaction of errors. Excessive alcohol drinking lowers one's ability to resist temptation and is a common cause of failure. In high-risk eating scenarios, patients should be counseled to avoid alcohol.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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