PROGRESS IN CARDIOVASCULAR DISEASES 56 (2014) 465–472

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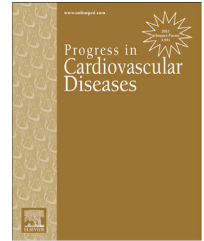

Weight Loss Strategies for Treatment of Obesity

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ARTICLE INFO

Keywords:
Obesity
Diet
Lifestyle
Pharmacology
Bariatric surgery

ABSTRACT

Obesity is one of the most serious and prevalent non-communicable diseases of the 21st century. It is also a patient-centered condition in which affected individuals seek treatment through a variety of commercial, medical and surgical approaches. Considering obesity as a chronic medical disease state helps to frame the concept of using a three-stepped intensification of care approach to weight management. As a foundation, all patients should be counseled on evidence-based lifestyle approaches that include diet, physical activity and behavior change therapies. At the second tier, two new pharmacological agents, phentermine–topiramate and lorcaserin, were approved in 2012 as adjuncts to lifestyle modification. The third step, bariatric surgery, has been demonstrated to be the most effective and long-term treatment for individuals with severe obesity or moderate obesity complicated by comorbid conditions that is not responsive to non-surgical approaches. By using a medical model, clinicians can provide more proactive and effective treatments in assisting their patients with weight loss.

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In June 2013, the American Medical Association (AMA) resolved that obesity should be considered a chronic medical disease state.[1] Although the *AMA* was not the first organization to do so,[2,3] it garnered the greatest media attention. One of the intentions of this declaration was to mobilize the medical community to take action regarding assessment and management of obese and overweight patients. Although there is ample evidence for the benefit of providing lifestyle interventions, pharmacotherapy and bariatric surgery for the treatment of obesity, survey data suggest that only a minority of clinicians provide such care.[4–7] Reasons for this clinical inertia include insufficient training in behavioral and lifestyle counseling, lack of familiarity and concern over safety with the use anti-obesity medications, unawareness of the indications and outcomes of bariatric surgery, and time restraints during a busy office practice among others.[6] Not all patients who are deemed obese by body mass index (BMI) alone need to be treated, as exemplified by the concepts of obesity paradox[8] or the metabolically healthy obese.[9] However, patients who present with obesity-related comorbidities and would benefit from weight loss intervention should be proactively managed. The purpose of this article is to review evidence-based weight loss strategies and expected outcomes.

The obesity care landscape

Obesity is primarily a consumer-oriented condition. That is, individuals typically select which treatment approach they feel most comfortable trying, fits into their budget, and is reasonably likely to be successful. The variety of treatment options is displayed in Fig 1. Note that the primary care provider is one of many choices. This is due, in part, to the

Statement of Conflict of Interest: see page 471.

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0033-0620/$ – see front matter © 2014 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.pcad.2013.09.005

Abbreviations and Acronyms

AMA = American Medical Association

BMI = body mass index

CV = cardiovascular

FDA = Food and Drug Administration

PA = physical activity

PHEN/TPM = phentermine and topiramate

LAGB = laparoscopic adjustable gastric banding

LSG = laparoscopic sleeve gastrectomy

RYGB = Roux-en-Y gastric bypass

T2D = type 2 diabetes

pervasiveness of marketing attractive products and services with wide accessibility, low cost and commitment, and the commercialization of obesity care. Nonetheless, several of these non-medical treatment options are evidence based and include selected commercial weight loss and Internet programs.[10] It is imperative that the clinicians education themselves about these programs and refer when indicated. Furthermore, with over 60% of the American adult population overweight and obesity,[11] it is prudent to include these selected programs as reasonable options since only a minority of physicians will likely provide comprehensive obesity care within the office setting. Although this proposed physician-commercial network to treat obesity appears pragmatic, there are currently no systems in place to facilitate bidirectional communication and ensure a standard of care.

Using a medical paradigm for obesity care

Considering obesity as a chronic medical disease state helps to frame the concept of using a stepped intensification of care approach to weight management (Fig 2). In this progression of care, all patients are provided guidance on lifestyle therapy which ranges from enrollment in an Internet or commercial group program to a participation in a physician-driven customized multidisciplinary program. If the patient is not able to achieve the weight and health goal by lifestyle alone and meets the indications for drug therapy, then addition of adjunctive pharmacotherapy should be considered. As a third step, bariatric surgery can be considered for patients with more severe disease and who meet its indications. Using this medical paradigm, clinicians and patients can advance through increasing intensities of treatments along with discussions of benefits and risks.

Lifestyle treatment

The foundation of obesity care is assisting patients in making healthier dietary and physical activity (PA) choices that will lead to a net negative energy balance. The initial goal is to achieve a 5% to 10% weight loss over the initial 6 months of treatment.[12] Caloric reduction is the most important component in achieving weight loss whereas increased and sustained PA is particularly important in maintaining the lost weight.[13–15] Weight loss is primarily dependent on reducing total caloric intake, not the proportions of carbohydrate, fat, and protein in the diet.[16] The macronutrient composition (i.e. proportion of calories from carbohydrate, fat and protein) will ultimately be determined by the patient's taste preferences, cooking style and culture. However, the patient's underlying medical problems are also important in guiding the recommended dietary composition. The dietary prescription will vary according to the patient's metabolic profile and risk factors.[17–21] A consultation with a registered dietitian for medical nutrition therapy is particularly useful[22] along with the importance of emphasizing collaborative care and self-management of chronic disease.[23] Incorporating meal replacements into the diet is another useful strategy. Meal replacements are foods that are designed to take the place of a meal or snack while at the same time providing nutrients and good taste within a fixed caloric limit.[24,25] An alternative dietary strategy is to refer the patient to one of several commercial weight loss programs that have demonstrated weight loss outcomes.[26,27]

In addition to reducing caloric intake, patients are also encouraged to burn more calories. There is a distinction between PA and exercise. Whereas PA consists of any bodily movement that increases energy expenditure, e.g. activities of daily living like walking, climbing stairs, gardening, etc., *exercise* is defined as planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness.[28] Weight loss counselling should encourage both aspects as part of treatment. Studies have demonstrated that lifestyle activities are as effective as structured exercise programs in improving cardiorespiratory fitness and weight loss.[29] The most useful strategy in achieving lifestyle goals is to include self-monitoring. Patients are asked to track their food intake, PA, and weight throughout treatment.[30] The benefits of tracking include having real-time data on dietary intake as it relates to caloric and other nutritional goals, allows reflection and planning of diet, introduces restraint, and provides information to share with the provider. Similar benefits are achieved by tracking PA by recording time or steps. Finally, it is important to remember that lifestyle management is one component of a comprehensive approach to the patient with obesity and cardiovascular disease. Control of glucose, blood pressure and lipid levels along with secondary prevention of recurrent events is optimized with the use of concurrent medication management.[31]

Pharmacotherapy

According to current Food and Drug Administration (FDA) guidance, pharmacotherapy is approved for patients with a BMI $\geq$30 kg/m^2 or $\geq$27 kg/m^2 when complicated by an obesity–comorbidity. Despite the logic of using medication to enhance weight loss, less than 3% of individuals who are obese are being treated by prescription medication.[32] The reasons for

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