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Original article

Efficacy of adjuvant weight loss medication after bariatric surgery

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Abstract

Background: Some patients do not achieve optimal weight loss or regain weight after bariatric surgery. In this study, we aimed to determine the effectiveness of adjuvant weight loss medications after surgery for this group of patients.

Setting: An academic medical center.

Methods: Weight changes of patients who received weight loss medications after bariatric surgery from 2012 to 2015 at a single center were studied.

Results: Weight loss medications prescribed for 209 patients were phentermine (n = 156, 74.6%), phentermine/topiramate extended release (n = 25, 12%), lorcaserin (n = 18, 8.6%), and naltrexone slow-release/bupropion slow-release (n = 10, 4.8%). Of patients, 37% lost >5% of their total weight 1 year after pharmacotherapy was prescribed. There were significant differences in weight loss at 1 year in gastric banding versus sleeve gastrectomy patients (4.6% versus .3%, $P = .02$) and Roux-en-Y gastric bypass versus sleeve gastrectomy patients (2.8% versus .3%, $P = .01$).There was a significant positive correlation between body mass index at the start of adjuvant pharmacotherapy and total weight loss at 1 year ($P = .025$).

Conclusion: Adjuvant weight loss medications halted weight regain in patients who underwent bariatric surgery. More than one third achieved >5% weight loss with the addition of weight loss medication. The observed response was significantly better in gastric bypass and gastric banding patients compared with sleeve gastrectomy patients. Furthermore, adjuvant pharmacotherapy was more effective in patients with higher body mass index. Given the low risk of medications compared with revisional surgery, it can be a reasonable option in the appropriate patients. Further studies are necessary to determine the optimal medication and timing of adjuvant pharmacotherapy after bariatric surgery. (Surg Obes Relat Dis 2017;▮:00–00.)

Keywords: Bariatric surgery; Weight loss; Medications; Adjuvant; Obesity; Weight; Phentermine

Obesity is a global health problem and has a strong association with metabolic disorders such as type 2 diabetes, hypertension, hyperlipidemia, and other cardiovascular diseases. In the United States, more than one third of the population has a body mass index (BMI) >30 kg/m^2, and these numbers are increasing every year. If these obesity trends continue, the total healthcare costs could reach $957 billion by 2030 [1].

Bariatric surgery has evolved since the 1950s and is proven to be the most effective and have the best long-term success in the management of obesity. Furthermore, it also has been shown to improve most of the metabolic disorders

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related to obesity, especially type 2 diabetes [2–6]. According to some estimates, a total of 196,000 bariatric surgeries were performed in the United States in 2015 [7].

Despite the effectiveness of bariatric surgery, weight recidivism is seen in a proportion of patients after bariatric procedures [8–10]. The causes of weight regain or recurrent disease is multifactorial; noncompliance to dietary recommendations, physiologic compensatory mechanisms, metabolic imbalances, behavioral changes like binge eating or grazing, sedentary lifestyle or physical inactivity, and postoperative complications can all affect patient weight [11]. Additionally, like any chronic disease, a subset of patients is refractory to treatment as a result of genetic and environmental influences. There are options available to address weight recidivism depending on the contributing factors, including lifestyle modifications, pharmacotherapy, endoscopic, and surgical revisional procedures.

While revisional surgery can be performed to address the anatomic causes of weight regain such as pouch and stoma dilation after Roux-en-Y gastric bypass (RYGB) [11], most revisional bariatric procedures carry a higher morbidity compared with the primary procedures. Pharmacotherapy may play an alternative role in these patients who have an increased risk of undergoing revisional surgery or poor compliance to lifestyle modification. The use of the appetite suppressant, phentermine has been widespread since 1959 [12]. Despite more recent chronic weight loss medications, such as phentermine/topiramate, lorcaserin, naltrexone/bupropion, and liraglutide 3.0 mg, that are available, phentermine is still the least expensive and most commonly prescribed weight loss medication in the United States [12–15]. Therefore, pharmacotherapy tailored to the patient's needs post–bariatric surgery, acting as an adjunct to dietary education and behavioral changes, can potentially halt weight regain. In this retrospective study, the aim was to determine the effectiveness of adjuvant weight loss medications after bariatric surgery for this group of patients.

Methods

A retrospective chart review study was conducted after institutional research board approval. All patients who received weight loss medications after bariatric surgery from 2012 to 2015 were identified at a single academic center. Patients who had weight regain or poor weight loss after bariatric surgery were included based on the following inclusion criteria: (1) patients >18 years of age; (2) patients who experienced <50% excess weight loss or regained at least 5% of their nadir weight despite dietary counseling and behavioral and lifestyle changes; and (3) patients who were placed on weight loss medication for a minimum of 3 months with a minimum follow-up period of 1 year.

A total of 443 patients were prescribed weight loss medications, but only 209 patients continued the medication use for at least 3 months.

Definitions

In the study, nadir weight was defined as the lowest weight that the patient reached 12 to 18 months after bariatric surgery. Weight regain was defined as <50% excess weight loss or regain of at least 5% of nadir weight despite dietary counseling and behavioral and lifestyle changes.

Dietary and exercise consultation

Patients received dietary consultations after providing their dietary histories. Consultations emphasized the importance of getting 40% of carbohydrate, 30% of protein, and 30% of fat from the daily calorie intake. In our practice, post–bariatric surgery patients are on approximately 500 to 800 calories at 1 month, 800 to 1000 calories at 3 months, and should be on between 1000 and 1200 calories at 3 to 12 months. The calorie intake varies and is based on the height of the patient and the patient's specific activity level. All patients were prescribed mineral and vitamin supplementations as per the American Society and Metabolic and Bariatric Surgery guidelines [16]. Patients were encouraged to participate in 150 to 300 minutes of exercise a week.

All bariatric surgical patients were followed up at 1, 3, 6, 9, 12, 18 months, and annually thereafter with a multidisciplinary team including a dietician, psychologist, bariatric physician, and bariatric surgeon. Weight and excess weight loss were monitored during the follow-up. The decision to prescribe weight loss medications was made after a multidisciplinary team discussion.

Prescription of weight loss medication

The patients who had poor weight loss or weight regain were prescribed weight loss medications to suppress appetite. The weight loss medications included phentermine, phentermine/topiramate extended-release, lorcaserin, and naltrexone slow-release/bupropion slow-release (Table 1). The choice of the weight loss medications was individualized, weighing the potential benefits with the risk of the drugs. The choice of the weight loss medications is often governed by the co-morbidities and the relative contraindications present in each patient. All 4 weight loss medications prescribed were used according to this criteria. After prescription of weight loss medications, patients were followed carefully to ensure they met 5% weight loss at 12 weeks. Those who did not lose weight or had side effects from the weight loss medication were asked to stop or switch the medications.

Data collection

Data collected include baseline characteristics, co-morbidities, perioperative parameters, postoperative outcomes, type of weight loss medication, and weight and