

A weighty issue

Medication as a cornerstone of medical obesity management

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With more than one-fifth of the world's population currently overweight or obese, intensifying prevention strategies is essential. These efforts, however, come too late for those already obese—these individuals need treatment today. Unfortunately, while losing weight is relatively easy, recidivism is notoriously high. Despite a proliferation of commercial weight-loss programs, diet books, and personal trainers, the documented long-term results of weight-loss attempts are modest at best.¹ “Yo-yo” dieting has become the rule rather than the exception.

The National Weight Control Registry,² which documents successful individual weight-loss measures, reveals that successful weight-loss maintenance requires a lifelong reduction of energy intake to approximately 1400 kcal/d (the equivalent of one typical value meal at most fast-food restaurants) combined with an energy loss, through exercise, of about 2800 kcal/wk (the equivalent of 90 minutes of walking at 4 mph daily). This is clearly a lifestyle that even the most motivated individuals would find difficult to adhere to.

Today, obesity is widely seen as a consequence of an obesogenic environment acting on our complex biology, which has evolved over eons to deal with intermittent feast and famine, the latter being more frequent than the former. Consequently, the biological and cultural defences against weight gain are less robust than those protecting against weight loss.³ Every attempt to induce a negative energy balance—required for weight loss—immediately sets off a complex biological response aimed at restoring body weight. This response includes a reduction in sympathetic activity, a fall in levels of leptin and thyroid hormones, an increase in ghrelin (resulting in increased hunger), and an overall reduction in energy expenditure. The greater and more catabolic the weight loss, the greater the counter-regulatory response and loss of lean body mass, ensuring a rapid regain of “fat.”⁴

Sustaining success

When considering obesity management, it is important to make the distinction between the maintenance of a healthy body weight (1° prevention) and obesity treatment (Table 1).⁵ For example, 1° prevention of obesity requires the maintenance of a eucaloric diet with moderate physical activity, while obesity treatment involves

2 distinct phases: inducing then maintaining weight loss. Weight loss cannot be achieved without creating a negative energy balance, requiring a reduction in caloric intake and a moderate increase in physical activity. A daily energy deficit of approximately 500 kcal will translate into a weight loss of about 1 lb weekly until the patient reaches a new equilibrium (weight-loss plateau).

In contrast to the weight-loss phase, maintenance of weight loss is rarely achieved by lifestyle interventions alone. We now recognize that powerful and complex biological factors are involved in the long-term regulation of body weight, making it exceedingly difficult for individuals to maintain weight loss. Therefore, the key role of pharmacologic (and surgical) treatment of obesity lies not so much in its ability to promote weight loss but rather in its ability to help patients maintain lower body weights in the long-term. For example, sibutramine, by amplifying the postprandial sense of satiety, allows patients to maintain portion control.⁶ Antiobesity medication should not be referred to as “weight-loss” drugs, as their real role is to assist in long-term weight-loss maintenance, or 2° prevention of weight regain.

Home-grown barriers

Despite increasing evidence that modern obesity pharmacotherapy is safe and effective, the social, regulatory, and political pressure against the widespread use of such treatment remains overwhelming, even for those who respond successfully. Part of the underuse of antiobesity medication is clearly due to the reluctance of medical professionals to accept obesity as a chronic disease in its own right.⁷ While doctors are happy using costly, aggressive, and invasive strategies to treat

Table 1. Fundamentals of obesity prevention and treatment

| GOAL OR TREATMENT | INTERVENTION |
|---|---|
| Prevention of weight gain (1° prevention) | Eucaloric, balanced diet 30-60 min of moderate exercise daily |
| Induction of weight loss | Hypocaloric diet 60-120 min of moderate exercise daily |
| Weight-loss maintenance (2° prevention) | Calorie-restricted diet* 90-120 min of vigorous exercise daily |

*Might require addition of antiobesity medication or surgical intervention.

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obesity complications (eg, type 2 diabetes, sleep apnea, coronary artery disease), there is little serious consideration given to providing long-term obesity treatment as part of routine practice. This might, in part, reflect lack of training and knowledge about the complex physiology and treatment of excess body weight; it might also be due to lack of incentive, financial or otherwise, to provide such treatment. The fact that obesity treatment can potentially confer a range of health benefits is widely ignored and apparently not seen as an added benefit.

It is hardly surprising that antiobesity medications are largely used to induce ("jump-start") rather than sustain weight loss. However, the rather naïve notion that short-term use of pharmacotherapy to facilitate weight loss would allow patients to implement the lifestyle changes necessary to maintain a healthy body weight is contrary to every piece of evidence in the field. Moreover, it clearly reflects a poor understanding of the complex physiology of energy homeostasis and the powerful social determinants of obesity.

Conclusion

Evidence from randomized controlled trials showing that lifestyle changes alone can maintain substantial weight loss in the long-term still remains sparse; however, there is now abundant evidence from pharmacologic trials that drugs such as orlistat, sibutramine, and rimonabant (a newer compound), when added to lifestyle interventions, can help patients maintain clinically meaningful weight loss for more than 2 years. Refusing to consider long-term antiobesity medication as an integral part of obesity treatment is, more often than not, setting the patient up for failure.



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Competing interests

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