

# Case Report

## Side Effects of New Weight Loss Medications

**Urgent message:** With the epidemic of obesity and recent FDA-approval of weight loss drugs, urgent care providers should be on alert for patient presentations related to side effects of these agents.

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### Overview

An estimated 154.7 million Americans over the age of 20 are currently overweight or obese. These Americans are at increased risk of disease, including diabetes mellitus, cardiovascular disease, end-stage renal disease and cancer. If current trends remain unchanged, an estimated \$861 to \$957 billion in health care costs in 2030 will be attributed to obesity. This obesity epidemic has resulted in an increase in advertisement of products aiding weight loss.

Many Americans use drug therapy as a last resort or an attempt at quick weight loss. That is not true in all cases, but whatever the motivation, a decision to use drug therapy for weight loss should be carefully considered and directed by a physician knowledgeable about weight loss management.

Before a weight loss drug can be prescribed to patients, it must receive approval from the US Food and Drug Administration (FDA). In 2012, the FDA approved two drugs—Qysmia and Belviq—as safe to use for weight management alongside a reduced-calorie diet and regular exercise. Before that, it had been 13 years since a weight loss drug—Orlistat—was approved in 1999.

The US Federal Food and Drug Administration (FDA) requires approval of weight loss drug therapies before it can be prescribed to patients. Until 2012, the FDA has not approved a drug therapy since Orlistat in 1999. In



the summer of 2012 the FDA approved two drugs—Qysmia and Belviq—to be used for weight management along with a reduced-calorie diet and exercise.

The FDA initially declined to approve either drug in 2010 because of potential side effects, but both were approved in 2012 when the FDA determined that the benefits outweighed the risks. To be prescribed these medications, patients must have body mass index (BMI)  $>27 \text{ kg/m}^2$  with weight-related disease or BMI  $>30 \text{ kg/m}^2$  without secondary illness.

### Case Presentation

A 46-year-old obese male presents to an urgent care with

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his significant other, complaining of hallucinations and an unremitting, painful erection.

The patient has been experiencing auditory and visual hallucinations that began 24 hours ago. He describes his hallucinations as dissociation as if he is standing next to himself.

In addition, the patient has had non-sexually stimulated painful erection the last 6 hours without relief or testicular swelling. He denies the application of any devices designed to maintain erections.

The patient's history is significant for poorly controlled diabetes mellitus and hypertension. He denies any alcohol, tobacco or illicit drug use. His associated symptoms consist of a generalized headache, upper respiratory symptoms, lethargy and loss of appetite, but he denies any chest pain, shortness of breath or fever.

Upon further questioning, the patient states he began using Belviq 2 weeks ago to aid his weight loss and control his diabetes. His significant other then states he has been taking double the recommended dose of Belviq in order to hasten his weight loss for their upcoming wedding.

### Observation and Findings

Physical examination of the patient reveals the following:

- Pulse: 63
- BP: 169/102
- RR: 18 O<sub>2</sub> Sat: 97%
- Temp: 98.7°F
- Pain Scale: 8/10
- GEN: The patient is diaphoretic and in moderate distress.
- HEENT: Horizontal nystagmus on lateral gaze
- CV: Heart is without murmur,
- Abdominal exam: Protuberant, soft and non-tender.
- Genitourinary exam: Positive for an erection, unchanged for 6 hours per the patient.
- Extremities: Tremors to all four extremities.

Mental Status: He is oriented to date, time, and place but some of his answers are nonsensical.

### Labs/Imaging

It is clear from the patient's presentation that he needs to be transferred to a higher level of care.

*“With the potential for serious side effects, Belviq should not be prescribed without careful deliberation and a thorough history and physical examination.”*

While waiting for the ambulance to arrive, a basic set of labs are obtained. The results are as follow:

- Point-of-Care Blood Sugar: 43mg/dL
- CBC: WBC 2.3, H/H 10.1/31
- U/A: Unable to obtain
- CXR: Cardiomegaly
- EKG: Sinus tachycardia

### Diagnosis and Treatment

The first clue in this bizarre constellation of symptoms and findings is that the patient

admits to taking a more than the prescribed dose of Belviq. Typical dosing of Belviq is 10 mg twice a day. This patient admits to taking 40 mg per day in divided doses.

Side effects of Belviq include priapism and hallucinations. Treatment consists of the patient discontinuing use of Belviq and closely monitoring his glucose levels. The patient ultimately needs to follow up with his primary care physician for changes to his antidiabetic drug regimen. In the interim, he needs to be emergently transferred to the Emergency Department for evaluation and treatment of his priapism.

Patients who take Belviq and have Type II diabetes mellitus are at high risk of profound hypoglycemia. Priapism associated with Belviq is a result of the drug's 5-HT<sub>2c</sub>-receptor agonism mechanism of action.

Bradycardia, leukopenia, and decreases in hemoglobin and hematocrit are also side effects of Belviq. Psychiatric disorders including euphoria, hallucination, and dissociation have been noted in patients who exceeded the usual dose.

In addition, the serotonin syndrome side effects of Belviq include mental status changes, autonomic instability, neuromuscular aberrations, and gastrointestinal symptoms. Patients may also experience dyspnea, dependent edema, congestive heart failure, and a new cardiac murmur.

It should be clear that with the potential for serious side effects, Belviq should not be prescribed without careful deliberation and a thorough history and physical examination.

### Qsymia

Qsymia is the second weight loss management drug approved by the FDA in 2012. Qsymia is a combination drug consisting of phentermine and topiramate with

alternating dosages at Weeks 2 and 12 of therapy.

Side effects of Qsymia include headache, upper respiratory symptoms, acute loss of vision, eye pain, constipation, insomnia, dizziness, paresthesia, palpitations, back pain, nausea, and diarrhea.

Renal effects consist of increased serum creatinine in patients, which occurs primarily 4 to 8 weeks into treatment. Topiramate has been associated with glaucoma and hyperthermia.

Hyperchloremic metabolic acidosis can occur due to decreased serum bicarbonate concentrations from increased renal bicarbonate loss. Patients on Qsymia who are also taking antihypertensive medications may experience hypotension; therefore, close monitoring of blood pressure and adjustment of medication is recommended in these cases.

Patients who start on Qsymia and begin to experience untoward side effects should be slowly weaned off the medication over 7 days to minimize the risk of seizure.

### Summary

Both Qsymia and Belviq can cause serious side effects and they should not be prescribed unless to patients who have not failed other modalities of weight control.

Along with diet, exercise, and lifestyle modifications, drug therapy—when used appropriately—may be a helpful component of treatment for obese patients.

Given the number of patients who are plagued by morbid obesity, it is clear that urgent care providers will be treating patients exhibiting some of the effects and side effects of weight loss therapy. ■

*Priapism is defined as a persistent erection of the penis or clitoris that is not associated with sexual stimulation. Experts differ on the length of time of erection used to define priapism, but most agree it is an erection lasting at least 4 hours.*

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