NUTRITION

Dental considerations for patients taking weight-loss medications

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ABSTRACT

Background. In this article, the authors examine prescription weight-loss medications and related dental considerations for oral health care professionals (OHCPs). The authors focus on the most common prescription weight-loss drugs and their potential interactions with medications frequently used in dental practice, and they include recommendations for modification in patient care.

Methods. The authors reviewed the literature regarding interactions between weight-loss drugs and medications commonly used in dentistry, including patient-treatment considerations. They also address the interactions of greatest clinical concern that have a high-quality evidence-based foundation in either randomized controlled clinical trials or meta-analyses.

Conclusions. Dental treatment can be performed and medications commonly used in dentistry can be administered safely to patients taking orlistat, an inhibitor of fat absorption. The same may not be true, however, for other weight-loss medications that modify the central nervous system neurotransmission of norepinephrine, dopamine or serotonin. OHCPs should be aware of the potential theoretical and pharmacokinetic risks relative to the actual clinical and reported risks for hypertension and cardiotoxicity in particular.

Practical Implications. Recognition and avoidance of potential weight-loss drug interactions, especially those with medications commonly used in dentistry, can help clinicians optimize patient treatment while emphasizing patient safety.

Key Words. Obesity; dentistry; weight-loss medications; drugs.
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According to Demaria,[1] the Centers for Disease Control and Prevention National Center for Health Statistics[2] and the World Health Organization,[3] 17 percent of children and more than one-third of adults in the United States are obese (Table 1). Although diet and lifestyle interventions are indicated as first-line therapies for the prevention and treatment of obesity,[4-6] patients are not always successful in achieving their goals by using lifestyle modifications alone. This outcome has led to the burgeoning growth of the dietary supplement and weight-loss medication markets.[7,8] As patients are turning to pharmacological interventions more often to reach their weight-loss goals, diet-drug, dietary supplement–drug and drug-drug interactions are becoming more prevalent and need to be considered in the treatment of patients.[9,10] As Americans live longer, have greater numbers of chronic conditions and take more medications (including those to manage obesity), hospitalizations for adverse drug events are likely to increase.[11]

Oral health care professionals (OHCPs) in clini-

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cal practice need to be aware of potential interactions between medications used to manage obesity and medications commonly used in dentistry. In this article, we examine prescription weight-loss medications and dental practice considerations, with a focus on medications frequently used in dental practice.

TABLE 1

U.S. data for obesity and being overweight and for body mass index (BMI) classification.*

PREVALENCE OF BEING OVERWEIGHT AND OF OBESITY AMONG ADULTS AND CHILDREN†	BMI-RELATED CLASSIFICATION‡
33 Percent of Adults Are Overweight	BMI ≥ 25.0 and < 30.0 kilograms per square meter
35.6 Percent of Adults Are Obese	BMI ≥ 30.0 kg/m^2
6.0 Percent of Adults Are Morbidly Obese	BMI ≥ 40.0 kg/m^2
17 Percent of Children Are Obese	BMI for age and sex ≥ 95th percentile

* Sources: Demaria,[1] Fryar and colleagues[2] and World Health Organization.[3]
† Target BMI is 18.5 to less than 25.0 kg/m^2.
‡ A BMI of 35.0 kg/m^2 or higher with a comorbidity is considered morbid obesity. Comorbidities include hypertension, type 2 diabetes mellitus, dyslipidemia, sleep apnea, coronary heart disease, stroke, osteoarthritis, reduced fertility and certain cancers.

WEIGHT-LOSS MEDICATIONS AND DRUGS USED IN DENTAL PRACTICE

The development of medications to treat obesity focused more on efficacy (weight loss) and less on safety until postmarketing surveillance revealed cases in which patients had been harmed by use of the drugs.[12,13] Perhaps the most notable of these cases relating to clinical dentistry involved the fenfluramine-phentermine (fen-phen) combination, which was associated with valvular heart disease and required affected patients to receive antibiotic prophylaxis before undergoing invasive procedures.[14,15] (The updated American Heart Association guidelines for the prevention of infective endocarditis published in 2007 no longer recommend this practice.[16]) Case reports such as these have led to the withdrawal of many weight-loss drugs, including fen-phen, from the market, and only recently have new agents been approved for use in the United States (Figure).[17-19]

Table 2[19] lists the currently available weight-loss medications, according to mechanisms of action.

Inhibitor of fat absorption. *Orlistat.* Unlike other weight-loss medications, orlistat is a reversible inhibitor of gastric and pancreatic lipases; it inhibits absorption of dietary fats by up to 30 percent.[20] In a 2007 literature review, Friedlander and colleagues[21] found that there were few dental concerns for patients taking orlistat other than a 2 to 4 percent increase in gingivitis. Investigators in two recently published cases, however, reported that orlistat caused aphthous ulcerations.[22]

Orlistat may enhance the anticoagulant effect of warfarin and present a clinical challenge if a patient is taking both medications concurrently.[23,24] Practitioners should check the patients' international normalized ratio (INR) to ensure that it is not outside the target range (typically 2.0-3.5) before proceeding with dental treatment.[25] Because routine laboratory monitoring for patients taking warfarin is common, if they are routinely compliant with their medication regimen and their INRs typically are stable and have been measured during the week preceding treatment, rechecking their INRs may not be required. If an INR is needed, OHCPs may choose to have the patient obtain an INR through a laboratory blood draw, or, to facilitate a more timely result, OHCPs may choose to use a simple point-of-care test that can be performed in the office.[26] Beyond these considerations, dental treatment and medications that are used commonly in dentistry can be administered safely to patients taking orlistat.

Modifiers of central nervous system neurotransmission of norepinephrine, dopamine or serotonin. OHCPs should be concerned about patients who are taking weight-loss medications that modify the central nervous system neurotransmission of norepinephrine, dopamine or serotonin. These medications include phentermine, diethylpropion, benzphetamine, phendimetrazine, the phentermine and topiramate combination, and lorcaserin.

Phentermine. Since 1959, phentermine has helped reduce appetite by means of stimulating of the hypothalamus to release norepinephrine.[19] The key adverse reactions related to phentermine use and dental treatment include reduced salivary flow (normal salivary flow resumes after the patient stops taking the medication) and unpleasant taste.[27] Amphetamine derivatives such as phentermine may enhance the sympathomimetic response of epinephrine and levonordefrin in local anesthetic carpules leading to increased blood pressure and cardiotoxicity, especially in patients with a diagnosed cardiac condition.[28] Although this drug interaction may be theoretical, OHCPs should be aware of its potential clinical effect and closely monitor patients for increased blood pressure and heart rate during concomitant use of the drugs. Appropriate physiological monitoring of the patient and awareness of maximum recommended doses of local anesthetics can help ensure patient safety.[27]

ABBREVIATION KEY. **BMI:** Body mass index. **FDA:** Food and Drug Administration. **INR:** International normalized ratio. **OHCP:** Oral health care professional.