Anti-Obesity Pharmacotherapy: Fast Facts

Introduction

The prevalence of obesity (defined by BMI >30 kg/m2) continues to rise and may affect 50% of the adult population within the United States in the next 15-20 years. Multiple guidelines for the treatment of obesity exist and include behavior modification, pharmacotherapy, and bariatric surgery. Anti-obesity pharmacotherapy options now include both short and long term agents, each with its own mechanism of action and potential side effects. The majority of anti-obesity pharmacotherapy medications produce about 5-10% average weight loss, but this can be highly variable among individuals. Clinicians need to first consider anti-obesity pharmacotherapy as part of the obesity treatment plan for all patients who meet appropriate use criteria. Second, clinicians need to carefully select the best choices to keep low risk to benefit ratio. Finally, clinicians need to monitor patients at regular, frequent intervals while using anti-obesity pharmacotherapy.

Criteria for anti-obesity pharmacotherapy use:

- BMI 27 kg/m2 with obesity related comorbidities (HTN, T2DM, dyslipidemia, obstructive sleep apnea, NAFLD)
- BM > or =30 kg/m2
- Used in combination with lifestyle modification: dietary changes, increased physical activity and behavioral counseling
- **note: anti-obesity pharmacotherapy has NOT been well studied in super obesity (BMI >50)*

All weight loss medications contraindicated in pregnancy, and it is recommended that women of child bearing age on phentermine-topamax should be monitored with pregnancy tests regularly.

If <5% weight loss after three months on a medication, the dose should be increased (if able) or the medication should be discontinued, or changed to an alternative.

Adapted from: Bersoux S, Byun TH, Chaliki SS, Poole KG. Pharmacotherapy for obesity: What you need to know. *Cleveland Clinic Journal of Medicine* 2017; 84: 951-958 by Jessica Bartfield, MD.

FDA-approved Agents for Short-Term Use

Name (Brand Name)	Date of FDA Approval	Method of Action	Adverse Effects	Contraindications	Efficacy	Comment
Phentermine (Adipex) Also: • Phendimetrazine • ethylproprion	1959	atypical amphetamine analogue, acts on sympathetic nervous system and norepinephrine receptor in brain	dry mouth irritability palpitations difficulty with sleep	uncontrolled HTN cardiovascular disease glaucoma hyperthyroidism	3.6 kg greater weight loss than placebo from pooled analysis study of use from 2 weeks to 6 months [1]	most commonly prescribed anti-obesity medication in the United States.

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FDA-approved Agents for Long-Term Use

Name (Brand Name)	Date of FDA Approval	Method of Action	Adverse Effects	Contraindications	Efficacy
Orlistat (Xenical) (Alli) OTC	1999 2007	inhibits gastric and pancreatic lipase, increasing fecal undigested fat content	diarrhea, oily stools, gas, bloating, cramping, (Worse with high fat foods.) Liver toxicity (rare)		3.3 kg more than placebo after 2 years[2]
Phentermine-topamax (Qsymia)	2012	phentermine as above; Topamax method of action for weight loss still not well understood. Likely taste inhibition by carbonic anhydrase and GAMA receptor activity in the brain	dry mouth, difficulty sleeping, paresthesia, taste changes. *Topamax category X in pregnancy - causes fetal defects (cleft palate)*		9.9 kg with standard dose/ 12.9 kg with high dose after one year[3]
Locaserin (Belviq)	2012	activates 5-HT2C receptor specific to the brain (serotonin agonist), suppressing appetite	dry mouth, dizziness, headache	use of other SSRIs	5.8 kg after one year[4]
Naltrexone-Bupropion (Wellbutrin)	2014	naltrexone works at mu opiod receptor in the brain, bupropion prevents reuptake of dopamine and norephinephrine in the brain. Combination thought to decrease appetite and decrease reward feedback.	nausea, constipation, headache, dizziness, dry mouth, sleep disruptions	uncontrolled hypertension, seizure disorder, ESRD, opioid use	7.3 kg total weight loss at 1 year[5]
Liraglutide 3.0 mg (Saxenda)	2014	glucagon peptide-1 receptor agonist, slows gastric emptying, decreases food intake. Given as an once daily injection	nausea, vomiting, diarrhea, constipation, hypoglycemia. Pancreatitis, renal toxicity (rare)		8.4 kg after 56 weeks[6]

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