

MANAGEMENT OF ASTHMA AND OBESITY INCLUDING USE OF APPETITE SUPPRESSANTS

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Link Between Obesity and Asthma

- Obesity is major risk factor for asthma
- Obesity increases severity in asthmatic patients
- Endocrine regulation of airway nerves likely contribute to airway hyperactivity in obese states
- Obese patients with asthma may represent unique phenotype less responsive to ICS
- Modest weight reduction can improve clinical manifestations and asthma outcomes

Obesity Guidelines

- American Association of Clinical Endocrinologists (AACE) and American College of Endocrinology (ACE) Consensus Conference on Obesity: Building and Evidence Base for Comprehensive Action
- AACE and ACE Position Statement on the 2014 Advanced Framework for a New Diagnosis of Obesity as a Chronic Disease

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Framework for New Diagnosis of Obesity

Diagnosis	Anthropometric Component	Clinical Component
Overweight	BMI 25-29.9	No obesity related complications
Obesity	BMI ≥ 30	No obesity related complications
Obesity Stage 1	BMI ≥ 25	Presence of 1 or more mild to moderate obesity related complications
Obesity Stage 2	BMI ≥ 25	Presence of 1 or more severe obesity related complications

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Obesity Related Complications

- Metabolic syndrome
- Pre-diabetes
- Type 2 DM
- Dyslipidemia
- Hypertension
- Abnormal liver function
- PCOS
- OSA
- Osteoarthritis
- Urinary stress incontinence
- Disability/immobility

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Monitor

- Blood pressure
- Waist circumference
- Fasting glucose
- Fasting lipid panel (Total Chol, LDL, HDL, triglycerides)
- Creatinine
- Hepatic transaminases

- Above in addition to assessment of:
 - Diet
 - Meal pattern preferences
 - Physical activity

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Steps in Weight Loss Recommendations

- Weight loss less likely if emphasis in on physical activity vs. behavioral and healthy eating strategies
- Pharmacologic interventions should be considered only after 3-6 months if no change achieved with lifestyle interventions
- First confirm patient is not taking drugs that might produce weight gain
 - Some diabetes medications
 - Antidepressants
 - Anti-epileptics
 - Steroids

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OTC Products

- Not controlled by FDA if marketed as supplement
- Limited studies in humans
- Existing studies have small sample sizes
- Most sponsored by industry

OTC Products

- **Garcinia Cambogia**
 - MOA-might inhibit fat-producing enzyme and increase levels of serotonin
 - May cause modest weight loss however the effects are small
- **Caffeine**
 - MOA-boosts metabolism and increases fat burning
 - SE-anxiety, insomnia, jitteriness, irritability, etc.
 - Can have short term benefits but tolerance develops quickly
- **Hydroxycut**
 - MOA-contains “plant extracts and caffeine-action probably related to caffeine”
 - Few studies, no data on long-term effectiveness, can help with weight loss

OTC Products

- **Orlistat (Alli OTC, Xenical by rx)**
 - MOA-inhibits breakdown of fat in the gut
 - Effect-can increase wt. loss by 6 lbs.
 - SE-digestive SE
- **Raspberry Ketones**
 - MOA-in rats increase breakdown of fat and increase levels of adiponectin
 - No human studies, massive doses used in rat studies
- **Green Coffee Bean Extract**
 - MOA-caffeine increases fat burning Chlorogenic acid (CA) can slow breakdown of carbs in the gut
 - SE-caffeine related SE and CA can cause diarrhea
 - May cause modest weight loss

OTC Products

- Glucomannan
 - MOA-from fibrous plant, increases feelings of fullness
 - Three human studies showed 8-10 lb. loss in 5 weeks when used with a healthy diet
 - Can lower BS, chol and trigs and helps constipation
 - SE-bloating, flatulence and soft stool
 - Can interfere with some oral meds if taken at the same time
- Meratrim
 - MOA-combination of two plant extract that may change metabolism of fat cells
 - Modest weight loss but only 1 study
 - SE-none reported

OTC Products

- Green Tea Extract
 - MOA-can increase fat burning especially in the abdominal area, contains some caffeine
- Conjugated Linoleic Acid (CLA)
 - MOA- may reduce appetite and boost metabolism
 - Effectiveness-caused wt. loss of about 0.2 lbs./week for up to 6 months
 - SE-digestive side effects and may have harmful long term effects contributing to fatty liver, insulin resistance and increased inflammation

OTC Products

- Forskolin
 - MOA-raises level of cAMP which may stimulate fat burning
 - Effectiveness-One study showing some benefit another no benefit
 - SE-very limited data. Recommendation to avoid this supplement until more research is done
- Bitter Orange/Synephrine
 - MOA-contains synephrine which is related to ephedrine which has been banned. Reduces appetite and increases fat burning
 - SE-cardiac effects and may be addictive

Prescription Drugs -- Short-term Use

- Approved for less than 12 weeks
- Controlled substances with potential for abuse
- Not recommended if patient has:
 - Heart disease
 - High blood pressure
 - Hyperthyroidism

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Didrex (benzphetamine)

- For short term use (< 12 weeks) in patients 12 and up
- Drug class-amphetamine
- MOA-decreases appetite, increases feeling of fullness
- Dosing-25-50 mg 1-3 times a day
- Possible SE
 - Increased BP and HR
 - Nervousness
 - Insomnia
 - Dry mouth
 - Constipation

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Didrex (benzphetamine)

- Possible interactions
 - MAO inhibitors within 14 days may precipitate hypertensive crisis
 - Decrease the hypotensive effect of antihypertensives
 - May enhance the effect of tricyclic antidepressants

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Tenuate (diethylpropion)

- For short term use (< 12 weeks) in patients 16 and up
- Drug class-monoamines
- MOA decreases appetite, increases feeling of fullness
- Dosing 25 mg po tid ac or 75 mg once a day in midmorning
- Possible SE
 - Headache
 - Increase BP and HR
 - Nervousness
 - Insomnia
 - Dry Mouth
 - Constipation

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Tenuate (diethylpropion)

- Possible interactions
 - Antidabetic drug requirements may be altered
 - Concurrent use with general anesthesia may result in arrhythmias
 - Pressor effects may be increased when used with other drugs
 - May interfere with antihypertensives
- **Not recommended in patients who used any anorectic agents within the prior year.**

Adipex-P, Suprenza (phentermine)

- For short term use (< 12 weeks) in patients 16 and up
- MOA
 - Decreases appetite, increases feeling of fullness
- Dosing 18.75-37.5 mg po daily
- Possible SE
 - Primary pulmonary HTN
 - Headache
 - Increase BP and HR
 - Nervousness
 - Insomnia
 - Dry Mouth
 - Constipation

Adipex-P, Suprenza (phentermine)

- Possible interactions
 - Phentermine has serious interactions with at least 42 different drugs
 - Phentermine has moderate interactions with at least 172 different drugs

Prescription Drugs -- Long-Term Use

- The following drugs are approved for long term use

Belviq (lorcaserin)

- Indicated in patients 18 and up
- MOA-Serotonin agonist
 - Decreases appetite, increases feeling of fullness
- Dosing 10 mg po bid
- Possible SE
 - Headache
 - Nausea
 - Dry Mouth
 - Dizziness
 - Fatigue
 - Constipation

Belviq (lorcaserin)

- Possible interactions
 - Drugs that may affect the serotonergic neurotransmitter systems (triptans, MOA, etc.)
 - SSRIs
 - Dexamethorphan
 - Tricyclic antidepressants
 - Cytochrome P450 substrates
 - Use with caution in drugs that are CYP 2D6 substrates

Contrave (naltrexone & bupropion* ER)

- MOA
 - Decreases appetite, increases feeling of fullness
- Dosing-increasing doses for first 4 weeks (8/90mg)
 - Week 1--1 tab in AM
 - Week 2--1 tab AM and PM
 - Week 2--2 tab AM 1 PM
 - Week 4 and beyond 2 tab AM and PM
- Possible SE
 - Nausea
 - Constipation
 - Headache
 - Vomiting
 - Dizziness

*** Can increase risk of suicidal thoughts and behaviors**

Contrave (naltrexone & bupropion* ER)

- Possible interactions
 - MAOs
 - CYP 2P D6
 - SSRI antidepressants
 - antipsychotics
 - Phenobarbital
 - Many others
 - digoxin
 - dopamine
 - anti-virals
 - beta blockers
 - Drugs that lower seizure threshold

Phendimetrazine

- MOA-Decreases appetite, increases feeling of fullness
- Indicated in patients 17 and up
- Dosing-ER 105 mg po daily 30-60 min before AM meal, immediate release 35 mg 2-3 times a day 1 hour before meals
- Possible SE
 - Increase BP and HR
 - Nervousness
 - Insomnia
 - Dry Mouth
 - Constipation

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Phendimetrazine

- Possible interactions
 - MAO
 - ETOH
 - Caffeine
- Side effects
 - Nervousness
 - Palpations
 - Elevated BP
 - Nausea or vomiting

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Xenical (orlistat)

- MOA-Blocks absorption of fat
- Approved for 12 and up
- Dosing-120 mg po tid with meals
- Possible SE
 - Decreased absorption of fat-soluble vitamins
 - Oily spotting
 - Intestinal cramps
 - Gas with discharge
 - Diarrhea
 - Fecal urgency
 - Incontinence

Xenical (orlistat)

- Possible interactions
 - Fat soluble vitamins
 - Cyclosporine
 - Levothyroxine
 - Anticoagulants
 - Amiodarone
 - Anti-epileptics
 - Anti-retrovirals

Qsymia (phentermine* & topiramate ER)

- MOA
 - Decreases appetite, increases feeling of fullness
 - **Increased risk of birth defects**
 - Dosing
 - 3.75/23 po in AM for 2 weeks
 - Then 7.5/46 If no wt loss in 2 weeks d/c
 - If wt loss continues can increase to 11.25/69
 - 15/92 dose for increase wt loss
 - Possible SE
 - Insomnia
 - Dry Mouth
 - Dizziness
 - Constipation
 - Pins and needles feeling
 - Changes in sense of taste or smell
- * Potential for abuse

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Qsymia (phentermine* & topiramate ER)

- Possible interactions
 - Same as those for phentermine

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Saxenda (liraglutide)

- MOA
 - Slows gastric emptying, increases feeling of fullness
 - Administered by injection (SQ) once daily
- Dosing Start with 0.6 mg qd then increase weekly by 0.6 mg until 3 mg dose reached
- Possible SE
 - Nausea
 - Vomiting
 - Pancreatitis
 - hypoglycemia
- **Boxed warning thyroid gland tumors in animal studies**

Saxenda (liraglutide)

- **Contraindications**
 - Personal or family history of medullary thyroid carcinoma
 - Multiple endocrine neoplasm syndrome type 2
- **Interactions**
 - Monitor for increased side effects association with oral medications due to delayed gastric emptying

