Case Studies in the Medical Management of Obesity

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Disclosure

- Novo Nordisk – Consultant and speakers bureau – Inspiration Network for Saxenda
Objectives

- Recognize measurements for diagnosing obesity
- Identify appropriate history of eating and activity for patients with the disease of chronic obesity
- Analyze plan of care to provide medical management of chronic obesity based on the history and physical of individual patients
- List the reasons for referral for patients with chronic obesity to specialists including bariatric surgeons
Epidemiology

Pt w Obesity  Pt Diagnosed w Obesity  Pt Receiving Medical Tx

Chronic Disease is a long-lasting condition that can be controlled but not cured.

Definition from Center for Managing Chronic Disease accessed March 1, 2015
## Classes of obesity

<table>
<thead>
<tr>
<th>WEIGHT STATUS</th>
<th>BODY MASS INDEX (BMI), kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
</tr>
<tr>
<td>Normal range</td>
<td>18.5 – 24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 – 29.9</td>
</tr>
<tr>
<td>Obese</td>
<td>≥ 30</td>
</tr>
<tr>
<td>Obese class I</td>
<td>30.0 – 34.9</td>
</tr>
<tr>
<td>Obese class II</td>
<td>35.0 – 39.9</td>
</tr>
<tr>
<td>Obese class III</td>
<td>≥ 40</td>
</tr>
</tbody>
</table>

Diagnosing disease of obesity

- Currently definition of obesity and overweight
  - BMI
    - BMI > 30 obesity
    - BMI > 25 overweight
    - BMI > 27 treatment of obesity if with comorbidity
    - Asians may be more accurate with waist circumference
  - Body Fat Percentage Measurement
    - Women > 32%
    - Men > 25%
  - Waist circumference
    - Women greater than 35 inches
    - Men greater than 40 inches
Chronic Disease Comorbidities

OBESITY – The Complications

- Sex Hormone Imbalance
- Increased Free Fatty Acids
- Physical Stress
- Quality of Life

Metabolic Syndrome
- Insulin resistance
- Hypertension
- Dyslipidemia

Metabolic Syndrome Complications
- Sleep Apnoea
- Osteoarthritis
- Low Back Pain

Other Conditions
- Hormone Dependent Tumours
- Type 2 Diabetes Mellitus
- Cardiovascular Disease

DISABILITY
- MORTALITY
- PSYCHOLOGY

Potential Low Economic Outcomes
- Disordered Eating Patterns
- Low Self Esteem
- Low Self Efficacy
- Anxiety

Pathophysiology
Figure 1. Interactions among hormonal and neural pathways that regulate food intake and body-fat mass. α-MSH, α-melanocyte-stimulating hormone; GHRH, GH secretagogue receptor; INSR, insulin receptor; LEPR, leptin receptor; MC4R, melanocortin receptor type 4; Y1R, Y1 receptor; Y2R, Y2 receptor. [Adapted from J. Korner and R. L. Leibel: To eat or not to eat - how the gut talks to the brain. N Engl J Med. 2003;349:926-928 (24), with permission. © Massachusetts Medical Society.]
HPI

- 7 day tracking of food and activity
- History of obesity in lifetime
- Attempts at weight loss – successful and unsuccessful
- Previous use of any weight loss medications or OTC’s
- Perceived obstacles to optimal health
ROS/PMH/FH

- History
  - Screen for eating disorders
  - Alcohol abuse, illicit drug use or abuse
  - Psych: Suicide ideation or attempts, untreated or uncontrolled depression, bipolar disorder
  - Hx of stroke, cardiovascular disease, arteriosclerosis, valvular heart disease, uncontrolled hypertension, glaucoma, hyperthyroidism, seizures, renal disease, or pulmonary hypertension, pancreatitis
  - FH of thyroid cancer, obesity (as well as the usual)
Physical Examination

- Measurement for obesity diagnosis
- Cutaneous
  - intertriginous rashes from skin-on-skin friction; hirsutism in women, acanthosis nigricans, and skin tags
- HEENT/Thyroid/Neck
- Cardiac and respiratory
- Abd
  - Hepatomegaly
  - Striae
Diagnostics

- Standard laboratory studies:
  - CBC
  - Fasting lipid panel
  - Liver function studies
  - Thyroid function tests
  - Fasting glucose and hemoglobin A1c (HbA1c)
  - Vitamin D
Diagnostics

- Other possibilities (primarily to R/O secondary causes or items that R/O a medication
  - EKG, EHCO
  - Sleep study
  - 24-hour urinary free-cortisol test
  - Insulin levels
Review of Medications

- Considerations
  - Obesigenic in DM2: Insulin, sulfonylureas, thiazolidione
  - Consider wt loss promoters: metformin, pramlintide, GLP-1 analogs, SGLT-2 inhibitor
  - Obesigenic in HTN: beta-adrenergic blockers
  - Consider: ACEI, ARBs, and calcium channel blockers
  - Oral contraceptives: injectables oral contraceptives are suggested over injectable medications because of weight gain with injectables, provided that women are well informed about risks and benefits (ie, oral contraceptives are not contraindicated).
Patient Visit for Chronic Obesity

Treatment Decisions
CORE PRINCIPLES

- Obesity is a chronic and often progressive condition
- Obesity management is not about simply reducing numbers on the scale
- Early intervention means addressing root causes and removing roadblocks
- Success is different for every individual
- A patient’s ‘best’ weight may never be an ‘ideal’ weight

Adapted from http://www.obesitenetwork.ca/5As
Overall Management Goals

Adult patient with overweight or obesity

- Improve patient health
- Improve quality of life
- Improve body weight and body composition
Eating Plans

- Low calorie diet 800-1500 kcal/day
  - Ideally 500 kcal a day less than previous intake
- VLC < 800 kcal/day
- Initially – meal replacement program ~ 800-1000 calories
- Long term – has to be sustainable
  - Restricted dietary carbohydrate
  - Restricted dietary fat
  - Vegan
  - Paleo

TRACKING
Activity

- Consider evaluation to start exercise
- Start low – find patients baseline
- Utilize pedometer and apps
- Leisure time activities
- Improve daily activity
Behavior Therapy

- Frequent encounters
- Education
- Finding causes
  - Stimulus control
  - Cognitive restructuring
- Goal Setting
- Self Monitoring
- Contracting
- Problem solving
Pharmacology today

- phentermine (Adipex-P, Suprenza)
- orlistat (Xenical)
- lorcaserin (Belviq)
- phentermine-topiramate (Qsymia)
- naltrexone-bupropion (Contrave)
- liraglutide (Saxenda)
phentermine

- Class: stimulant
- Action: sympathomimetic/increases satiety
- Dosing: 15-37.5mg PO qam – short term treatment (13 weeks)
- DEA Schedule: IV
- Pregnancy: X
- Monitoring: possible CV at baseline, periodically and after D/C
- Adv. effects: palpitations, tachycardia, increased BP, overstimulation, tremor, insomnia, HA

Additional information is available on resource slides at the end
orlistat

- **Class:** lipase inhibitor
- **Action:** blocks the digestion and absorption of fat in your stomach and intestines
- **Dosing:** 120 mg po tid rx (60 mg OTC)
- **DEA Schedule:** N/A
- **Pregnancy:** X (rx) B (OTC)
- **Drug interactions:** decreases fat-soluble agent absorption
- **Adv. effects:** oily and frequent bowel movements, bowel urgency, fecal incontinence, flatus

Additional information is available on resource slides at the end
Long-term Drug Treatment for Obesity: A Systematic and Clinical Review

- Obesity medications approved for long-term use, prescribed with lifestyle interventions = additional weight loss relative to placebo
- D/C medication in patients who do not respond with weight loss of at least 5%, to decrease their patients’ exposure to the risks and costs

Chronic Weight Management
Pharmacology General Measures

- Newer medications are approved for long term management
- Chronic weight management in adult patients with an initial body mass index (BMI) of 30 or greater (obese) or 27 or greater (overweight) in the presence of at least one weight-related comorbid condition (e.g., hypertension, type 2 diabetes mellitus, or dyslipidemia)
- If no clinical improvement in 12 weeks (at least 5% decrease in weight) consider alternative
- BMI and baseline body weight are measured end points
  - obesity and overweight may be more accurately assessed
- Expected weight loss 5% average
- Pregnancy tests at baseline – consider a disclosure signature
lorcaserin

- Class: Obesity
- Action: exact mechanism unknown, activates 5-HT2C receptors, promoting satiety (selective serotonin agonist)
- Dosing: 10 mg bid
- DEA Schedule: IV
- Pregnancy: X
- Monitoring: sx of depression/suicide, glucose at baseline, CBC
- Adv. effects: HA, fatigue,
- Contraindications: CrCl <30 avoid, CHF, valvular heart disease, pregnancy, depression, DM, bradycardia
- Ave wt. loss 5%

Additional information is available on resource slides at the end
phentermine-topiramate

- Class: Obesity
- Action: phentermine – short acting sympathomimetic and topiramate – long acting neurostabilizer
- Dosing: 3.75/23 starting dose, titrate to 7.5mg/46mg, 11.25mg/69mg, top dose 15mg/92mg
- DEA Schedule: IV
- Pregnancy: X
- Monitoring: depression, CV evaluation at baseline, hypokalemia
- Adv. effects: paresthesias, insomnia, HA
- Misc: may alter the exposure OCP causing irregular menstrual bleeding but not increase in pregnancy, avoid alcohol
- Ave wt. loss ranged from 6.7% to 8.9%
- REMS program

Additional information is available on resource slides at the end.
naltrexone-bupropion

- **Class:** Obesity
- **Action:** naltrexone, an opioid antagonist, and bupropion, an antidepressant – might help with cravings
- **Dosing:** 8/90mg, 1 tab po qam titrating to max of 2 tabs po q am and 1 tab po q pm
- **Pregnancy:** X
- **Monitoring:** Cr at baseline, BP, HR, depression/suicide
- **Adv. effects:** nausea, headache, insomnia
- **Contraindications:** seizure disorders, eating disorders, chronic opioid use
- **Ave wt. loss ranged from 5 -10%
- **Black Box Warning:** Suicidal Thoughts and Behaviors; and Neuropsychiatric Reactions

Additional information is available on resource slides at the end
liraglutide

- Class: Obesity
- Action: glucagon-like peptide-1 receptor agonist
- Dosing: Initiate at 0.6 mg per day SQ for one week. In weekly intervals, increase the dose until a dose of 3 mg is reached.
- Pregnancy: X
- Monitoring: monitor for medullary thyroid carcinoma, pancreatitis, cholelithiasis or cholecystitis, hypoglycemia (especially if patient on sulfonylurea), HR, renal impairment, and depression or suicidal thoughts.
- Adv. effects: nausea, hypoglycemia, diarrhea, fatigue, dizziness, abdominal pain, and increased lipase.
- Ave wt. loss ranged from 5 -10%
- REMS program

Additional information is available on resource slides at the end
Guidelines

- 2013 American Society of Bariatric Physicians Obesity Algorithm
- 2013 institute for Clinical Systems Improvement Health Care Guideline Prevention and Management of Obesity for Adults
- 2014 VA/DoD Clinical Practice Guideline for Screening and Management of Overweight and Obesity
Referrals

- Obesity specialist
  - Primary care treatment is ineffective – eating plan with decreased calories, increased activity, and behavioral therapy with or without medication
  - When approved medications have not been successful

- Bariatric surgical programs
  - BMI $\geq 40$ kg/m$^2$ or BMI $\geq 35$ kg/m$^2$ with obesity-related comorbid conditions
  - have not responded to behavioral treatment with or without pharmacotherapy to achieve targeted health outcome goals
Future

- An ideal anti-obesity drug would produce sustained weight loss with minimal side effects.

- Pathway target in metabolic tissues:
  - Adipocytes, liver, and skeletal muscle
  - Peptidergic signaling of hunger and satiety
  - Ghrelin, cholecystokinin (CCK), peptide YY (PYY), and glucagon-like peptide-1 (GLP-1), and leptin
Future

- Chronic disease model
  - People with obesity that are receiving treatment and BMI now < 30 with no co-morbidity
    - Controlled obesity – similar to controlled hypertension, controlled diabetes –
      - We don’t quit treating those
  - Multiple Medication possibilities

- Guidelines for prescriptions and evidenced-based practice
- Payment models and changes in insurance companies
Case Study - Anna

- 34 year old female – 5’3” 225 pounds BMI 39.9 – here to talk about her weight
- VS: 136/82 HR 88 RR 16 pOx 98
- HPI
  - 7 day tracking – average 2500 calories a day, 15% protein, 50% carbohydrates, 35% fat, sedentary
  - Obese all her life – has tried many of the organized weight loss programs, two that were medically supervised (latest one with HCG injections, phentermine, and 500 calories food restrictions). She was able to lose weight on all of them but gains the weight back plus a bit more.
  - States has tried every OTC weight loss – raspberry ketones, green tea, multiple other supplements – only rx medication tried for weight loss is phentermine
  - Obstacles – patient states she has no will power and believes that her fat is killing her but “can’t seem to do anything about it – I just like food like all my family)
History - Anna

- Has never vomited intentionally after eating, does have problems with overeating at a sitting, but states that she often craves sugar items “they call her name”
- No history of alcohol abuse or illicit drugs
- States ex-husband said she snored and gasped in sleep at times (no longer married and not sexually active)
- Medical history – positive for depression (treated for past three years with Celexa). No history of bipolar. No history of CVA, CV dx, HTN, DM, seizures, pancratitis, or thyroid disease.
- FH: mother and both sisters have obesity and DM. No history of thyroid cancers in the family
PE - Anna

- 5’3” 225 pounds BMI 39.9 – body fat 36.5%
- VS: 136/82 HR 88 RR 16 pOx 98
- Alert and oriented x 4, judgment intact
- Skin has significant number of skin tags
- Neuro, thyroid, resp, CV, abdomen – no abnormalities noted
Diagnostics - Anna

- CBC – nl
- Lipids – TC 212, HDL 47, LDL 147, TG 163
- TSH 2.6 (no reflex to T4)
- Fasting glucose 98  HgbA1C 5.6
- Vitamin D 10.8

- No history of CV and exam showed no indication for concern about this so no EKG or ECHO needed
- Consider sleep study with history of snoring
- PQH9 needed as patient has history – score 11
Treatment plan - Anna

- Discuss multiple eating plans
  - VLC with fastest early results
    - Meal replacement programs
  - Calorie restriction – 1200-1500/day
- Tracking
- Activity
  - Start with tracking steps everyday – then increase this
  - Look for activities to increase over next few weeks
Treatment plan - Anna

- Behavioral interventions
  - Education about pathology of obesity
  - Course of chronicity of the disease – plateaus and relapses
  - GOAL SETTING

- See again in one week for evaluation of eating plan, evaluation of activity, behavior therapy and consideration of medication
Angie’s Algorithm for Selecting Medication

1) first if you are looking at long term – phentermine alone is out based on the label
2) check for any contraindication – that can rule out a medication
3) is there a co-morbid condition that allows using the medication for two reasons
4) is there something in the patients history that might help you decide on a medication to try first
5) next review the secondary considerations, advantages and side effects with patients to assist in making the final decisions.
<table>
<thead>
<tr>
<th>Medication name (alphabetical order)</th>
<th>Liraglutide</th>
<th>Lorcanerin</th>
<th>Naltrexone-bupropion</th>
<th>Orlistat</th>
<th>Phentermine</th>
<th>Phentermine-topiramate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraindications (not all inclusive but &quot;the big one&quot;)</td>
<td>Medullary thyroid cancer history, MEN type 2 history, history of pancreatitis</td>
<td>pregnancy and breastfeeding, caution with some medications (ex. Antidepressants, triptans, desmethylmorphine)</td>
<td>Uncontrolled HTN, seizure disorder, anorexia or bulimia, drug or alcohol withdrawal, chronic opioid use, MAO inhibitors</td>
<td>Chronic malabsorption syndrome, pregnancy and breastfeeding, cholestatic, some medications (ex. warfarin, antiepileptic, levothyroxine)</td>
<td>Not long term (13 weeks by label) Anxiety disorder, CV disease, MAO inhibitors, pregnancy and breastfeeding, hyperteroidism, hx of drug abuse, glaucoma</td>
<td>pregnancy and breastfeeding, hyperteroidism, glaucoma, some medications (ex. MAOI, sympathomimetics)</td>
</tr>
<tr>
<td>Co-morbid reasons for use</td>
<td>Patients with prediabetes or type 2 diabetes due to the GLP1 affects</td>
<td>Patients with depression may find some advantage with the bupropion (although it is not a therapeutic dose for depression)</td>
<td>Food addiction or cravings may find this a beneficial choice, but if patient using a chronic opioid this is not a good choice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient history that may help with decision (i.e. cravings,</td>
<td></td>
<td></td>
<td>This would be avoided in patients on a serotonin medication for depression as it has serotonin activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary considerations (insurance coverage/copay cards)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advantages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE (not all inclusive)</td>
<td>N/V, pancreatitis</td>
<td>HA, nausea, constipation, fatigue, dizziness</td>
<td>Nausea, constipation, HA, dizziness</td>
<td>Decreased absorption of fat soluble vitamins, steatorrhea, flatulence, fecal incontinence</td>
<td>HA, increased BP and HR, insomnia, constipation, anxiety, palpitations, changes in libido</td>
<td>Insomnia, constipation, dizziness, paraesthesia, dysgeusia, dry mouth</td>
</tr>
</tbody>
</table>

DISCLAIMER: VERY brief information provided in above chart Chart created by A. Golden using multiple resources and meant as an overview of medications for selection not to be sued for full prescribing purposes
Medication choice +/- Anna

- Will you prescribe for Anna?
- Any contraindications
- Any co-morbid conditions
- Anything in the patients history
- Secondary considerations, advantages, side effects
Follow-up

- One to two weeks
  - Review medication for side effects
  - Review patients tracking of eating and activity
  - Do another IBT session
Case Study - Paul

- 29 year old male 6’1” 379 lbs BMI 50 Fat percentage 58%
- VS 138/84, P 88, RR 16 pOx 97%
- HPI
  - 7 day tracking – average 3200 calories a day, hi fat with 10-15 times a week fast food, sedentary
  - Obese since graduating from college (was a linebacker) – has tried many of the organized weight loss programs, two that were medically supervised (latest one with phentermine, and liquid diet). He was able to lose weight on all of them but gains the weight back within months.
  - Only rx medication tried is phentermine
  - Obstacles – patient states he just needs help
History - Paul

- Denies any cravings and no history of binging or anorexia
- No history of alcohol abuse or illicit drugs, however does drink 4 beers a day and sometimes more on the weekend
- States wife says he gasps and quits breathing at night
- Medical history – positive for HTN, DM. Takes a beta blocker and metformin
- FH: Siblings and parents have obesity, HTN and DM. No history of thyroid cancers in the family
PE - Paul

- 6’1” 349 lbs  BMI 50  Fat percentage 58%
- VS  138/84, P 88, RR 16 pOx 97%
- Alert and oriented x 4, judgment intact
- Skin has significant number of skin tags and acanthosis nigricans on back of neck
- Neuro, thyroid, resp, CV, abdomen – no abnormalities noted
Diagnostics - Paul

- CBC – nl
- Lipids – TC 198, HDL 42, LDL 127, TG 148
- TSH 2.6 (no reflex to T4)
- Fasting glucose 118  HgbA1C 6.8
- Vitamin D 25

- History of CV do EKG
- Consider sleep study with history of snoring
- PQH9 3
Treatment plan - Paul

- Discuss multiple eating plans
  - VLC with fastest early results
    - Meal replacement programs
  - Calorie restriction – 1500-2000/day
- Tracking
- Activity
  - Start with tracking steps everyday – then increase this
  - Look for activities to increase over next few weeks
Treatment plan - Paul

- Behavioral interventions
  - Education about pathology of obesity
  - Course of chronicity of the disease – plateaus and relapses
- GOAL SETTING
- See again in one week for evaluation of eating plan, evaluation of activity, behavior therapy and consideration of next steps
Medication choice +/- Paul

- Would you prescribe for Paul?

- Are their other options?
Medication choice +/- Paul

- Any contraindications
- Any co-morbid conditions
- Anything in the patients history
- Secondary considerations, advantages, side effects
Follow-up

- One to two weeks
  - Review patients tracking of eating and activity
  - Do another IBT session
  - Discuss medication or referral
Thank you and Q&A

Angela Golden
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References


- [http://www.obesitynetwork.ca/5As](http://www.obesitynetwork.ca/5As) *(Accessed March 1, 2015)* patient and provider resources


References


- Bray GA: Why do we need drugs to treat the patient with obesity? Obesity (Silver Spring) 2013 21:893-899.


Additional medication resource slides
Phentermine

- **Class:** stimulant
- **Action:** sympathomimetic/increases satiety
- **Dosing:** 15-37.5mg PO qam – short term treatment (13 weeks)
- **DEA Schedule:** IV
- **Pregnancy:** X
- **Monitoring:** possible CV at baseline, periodically and after D/C
phentermine

- Drug interactions: lowers threshold
- Adv. effects: palpitations, tachycardia, increased BP, overstimulation, tremor, dizziness, insomnia, dysphoria, HA, dryness of mouth, diarrhea, constipation
- Contraindications: CV dx, uncontrolled HTN, hyperthyroidism, glaucoma, drug abuse hx, MAO inhibitor in past 14 days
orlistat

- Class: lipase inhibitor
- Action: blocks the digestion and absorption of fat in your stomach and intestines
- Dosing: 120 mg po tid rx (60 mg OTC
- DEA Schedule: N/A
- Pregnancy: X (rx) B (OTC)
- Drug interactions: decreases fat-soluble agent absorption
orlistat

- Adv. effects: oily and frequent bowel movements, bowel urgency, fecal incontinence, flatus, increase risk of cholelithiasis and urinary oxalate (rare), post marketing reports of liver injury, may decrease absorption of fat soluble vitamins

- Contraindications: chronic malabsorption syndromes, pregnancy, bulimia, organ transplant

- Misc: Alli reduced-strength version sold OTC
lorcaserin

- Class: Obesity
- Action: exact mechanism unknown, activates 5-HT2C receptors, promoting satiety (selective serotonin agonist)
- Dosing: 10 mg bid
- DEA Schedule: IV
- Pregnancy: X
- Monitoring: sx of depression/suicide, glucose at baseline, CBC
lorcaserin

- Drug interactions: safety unknown – SSRI, SNRI, MAO-I, triptans, bupropion, dextromethorphan, St. John’s Wort
- Adv. effects: HA, dizziness, fatigue, nausea/vomiting, dry mouth, constipation, cough, bradycardia, hyperprolactinemia, hypoglycemia (diabetic patients), musculoskeletal pain, depression, valvular heart disease, serotonin syndrome, neuroleptic malignant syndrome
- Contraindications: CrCl <30 avoid, CHF, valvular heart disease, pregnancy, depression, DM, bradycardia
- Misc: D/C if wt. loss < 5% after 12 weeks, renal dosing CrCl 30-50: caution advised
- Ave wt. loss 5%
phentermine-topiramate

- Class: Obesity
- Action: phentermine – short acting sympathomimetic and topiramate – long acting neurostabilizer
- Dosing: 3.75/23 starting dose, titrate to 7.5mg/46mg, 11.25mg/69mg, top dose 15mg/92mg
- DEA Schedule: IV
- Pregnancy: X
- Monitoring: depression, CV evaluation at baseline, hypokalemia
- Drug interactions: may potentiate CNS depressants, potentiate hypokalemia of non-potassium paring diuretics

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phentermine-topiramate

- Adv. effects: paresthesias, constipation, dysgeusia, insomnia, dizziness, HA, nausea, back pain, fatigue, diarrhea, blurred vision, anxiety, alopecia, hypoesthesia, irritability, attention disturbance, GERD, tachycardia, metabolic acidosis, nephrolithiasis, osteoporosis, hyperthermia, pulmonary HTN, SJS,

- Contraindications: MAO-I within 14 days, pregnancy, breastfeeding CV dx, hyperthyroidism, glaucoma, drug abuse history,

- Misc: may alter the exposure OCP causing irregular menstrual bleeding but not increase in pregnancy, avoid alcohol

- Ave wt. loss ranged from 6.7 - to 8.9 %
phentermine-topiramate

- REMS program:
  - Counsel females of reproductive potential at initial and all follow-up visits on the increased risk of orofacial clefts in infants exposed to phentermine-topiramate during the first trimester of pregnancy.
  - Counsel females of reproductive potential to have a pregnancy test before starting phentermine-topiramate and monthly thereafter during therapy.
  - Discuss the need for consistent use of effective contraception during therapy.
naltrexone-bupropion

- Class: Obesity
- Action: naltrexone, an opioid antagonist, and bupropion, an antidepressant
- Dosing: 8/90mg, 1 tab po qam titrating to max of 2 tabs po q am and 1 tab po q pm
- Pregnancy: X
- Monitoring: Cr at baseline, BP, HR, depression/suicide
- Drug interactions: opioid analgesics, interaction with CYP2D6 metabolized medications, beware drugs that lower seizure threshold
naltrexone-bupropion

- Adv. effects: nausea, constipation, headache, vomiting, dizziness, insomnia, dry mouth and diarrhea
- Contraindications: use within 14 days of MAO-I, uncontrolled HTN, seizure disorders, eating disorders, chronic opioid use, pregnancy
- Misc: naltrexone-bupropion should not be taken with a high-fat meal because of a resulting significant increase in bupropion and naltrexone systemic exposure, reduced alcohol intolerance reported so needs to be minimized
- Ave wt. loss ranged from 5 -10%
- Black Box Warning: Suicidal Thoughts and Behaviors; and Neuropsychiatric Reactions
liraglutide

- Class: Obesity
- Action: glucagon-like peptide-1 receptor agonist
- Dosing: Initiate at 0.6 mg per day SQ for one week. In weekly intervals, increase the dose until a dose of 3 mg is reached.
- Pregnancy: X
- Monitoring: monitor for medullary thyroid carcinoma, pancreatitis, cholelithiasis or cholecystitis, hypoglycemia (especially if patient on sulfonylurea), HR, renal impairment, and depression or suicidal thoughts.
- Drug interactions: delays gastric emptying so may impact oral oral medications taken at the same time.
liraglutide

- Adv. effects: nausea, hypoglycemia, diarrhea, constipation, vomiting, headache, decreased appetite, dyspepsia, fatigue, dizziness, abdominal pain, and increased lipase.

- Contraindications: Personal or family history of medullary thyroid carcinoma or Multiple Endocrine Neoplasia syndrome type, Pregnancy

- Ave wt. loss ranged from 5 -10%
liraglutide

REMS:

Potential Risk of Medullary Thyroid Carcinoma

- Liraglutide causes dose-dependent and treatment-duration-dependent thyroid C-cell tumors at clinically relevant exposures in both genders of rats and mice.
- It is unknown whether liraglutide causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as the human relevance of liraglutide-induced rodent thyroid C-cell tumors has not been determined.

Risk of Acute Pancreatitis

- Based on spontaneous post marketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis, has been observed in patients treated with liraglutide.
- In clinical trials studying liraglutide, there were more cases of pancreatitis in patients treated with liraglutide than in patients treated with placebo.