



Regions I & II Conference



Kroger/SNPhA Clinical Skills Competition
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PATIENT CASE

Kevin Miller is a 52-year-old Caucasian male with a past medical history of depression, type 2 diabetes mellitus, obesity, and hypothyroidism. His depressive symptoms are well managed. His diabetes is uncontrolled and he is having trouble losing weight. He has trialed Metformin and Jardiance together, but his A1c has remained above 11% for the past six months. After a visit to his Endocrinologist's office, he became concerned with the possibility of gaining weight from the new medication that was prescribed. He's at Kroger Pharmacy to pick up his new medication.

His job as a high school bus driver has reduced his mobility. He works for two companies, so he drives for most of the day. He is coming to Kroger Pharmacy to pick up his new medication along with his other medications which are ready to be picked up. At the pick-up counter, Mr. Miller states he has been experiencing symptoms of heartburn and pain after eating for the past three days. He would like for the pharmacist to make a recommendation for treatment.

Current Medication Profile

NEW Victoza® (Liraglutide) 0.6 mg injection once daily for 1 week
- then increase to 1.2 mg once daily

Glucophage® (metformin) 1000 mg: take 2 tablets by mouth twice daily

Zoloft® (sertraline) 100 mg: take 1 tablet by mouth twice daily

Synthroid® (Levothyroxine) 112 mcg: take 1 tablet by mouth once daily

Zantac® (Ranitidine) 150 mg: take 1 tablet by mouth twice daily

Allergies: No allergies on profile

Influenza Vaccine - 09/2018

Clinical Counseling Pearls

- Counsel on new prescription(s)
- Advise patient on potential drug-drug and/or drug-food interactions
- Counsel on diabetes pen technique
- Counsel patient on OTC medication(s) and/or nonpharmacologic interventions
- Recommend therapeutic lifestyle modifications

IMPORTANT NOTE

The information provided in this answer key is detailed for completeness. Student pharmacists are expected to use professional judgement to educate the patient with the most pertinent counseling points within the allotted time (5 minutes).

Student pharmacists are evaluated on professional knowledge, clinical pearls, communication skills, and patient interaction during the counseling session.

ANSWER KEY

New Prescription

Liraglutide - diabetes medication

- Inject 0.6mg subcutaneously once daily for 1 week, then increase to 1.2mg once daily
- This drug may cause headache, diarrhea or constipation, upset stomach or cause you to vomit, cause you to not feel hungry, or you may see irritation at the site of injection
- Report any signs of allergic reactions such as (hives, itchiness; red, swollen, blistered skin), signs of gallbladder problems such as (pain of the upper right belly area, yellow skin or eyes, fever with chills) signs of kidney problems such as (inability to pass urine, blood in urine, or large weight gain) and dizziness
- It is best to inject this medication into a fatty part of the skin such as (top of the thigh, belly area, or upper arm) and it is best practice to rotate the site of injection
- Do not use if solution changes color
- If you miss a dose of this medicine, skip the missed dose and go back to your regular dosing schedule. Never take extra medicine to make up for a missed dose. If you miss a dose **for 3 days or more**, call your physician to talk about how to restart your treatment
- Store unopened pens in a refrigerator, and discarded used pen after 30 days
- Protect from excessive heat and sunlight. Avoid storing directly adjacent to the cooling compartment in the refrigerator. Do not freeze or use a pen that has been frozen
- Warning/Precautions
 - Contraindicated in patients with prior serious hypersensitivity to liraglutide or history/family history of Medullary Thyroid Cancer
 - Use with caution in impaired renal and pancreas function
 - Use with caution in depression

Drug Interactions

Drug-Drug Interactions

- Antidiabetic agents and somatostatin analog (major)
 - Concurrent use may result in impaired glucose regulation
- Antidiabetic agents and fluoroquinolone (major)
 - Concurrent use may result in changes in blood glucose and increased risk of hypoglycemia or hyperglycemia
- Antidiabetic agent and thioctic acid (major)
 - Concurrent use may result in an increased risk of hypoglycemia
- Liraglutide and insulin (moderate)
 - Concurrent may result in an increased risk of hypoglycemia

Drug-Food Interactions

- Ranitidine and cranberry juice (moderate)
 - may result in reduced effectiveness of histamine-2 blockers
- Levothyroxine and soy (moderate)
 - may result in decreased effectiveness of levothyroxine
- Levothyroxine and enteral nutrition (moderate)
 - may result in hypothyroidism

OTC Medication

Famotidine – Gastrointestinal esophageal reflux disease (GERD) relief

This medication is an H2 receptor antagonist (H2RA) and in the same class as one of the patient's current medications, Zantac® (Ranitidine). Recommending this agent is a therapeutic duplication and would be considered an inappropriate recommendation.

Calcium Carbonate – heartburn relief

This medication is an antacid that is used to treat heartburn. The maximum oral dose should not be taken daily for more than two weeks. These agents are not considered first-line, so it would be considered an inappropriate recommendation. May be used in addition to first-line agents.

Omeprazole – GERD relief

This medication is a proton pump inhibitor and is one of the first two options in the management of GERD's initial heartburn symptoms, according to the American College of Gastroenterology. The patient failed treatment with an H2RA which makes this the appropriate recommendation.

Directions for use:

- Take one (1) 20 mg tablet once daily for a maximum of 14 days.
- Follow up with pharmacist or physician for further intervention if GERD symptoms persist
- Do not use more than directed

Diabetes Injectable Device Techniques

- To reduce the risk of IM injections and for better tolerance, use 4, 5, or 6 mm needles in all patients regardless of BMI or age
- Injections should be given at a 90-degree angle to the skin surface
- When injecting into limbs or a slim abdomen, use a lifted skin fold (4 and 5 mm needles) or 45-degree angle (6 mm needle)
- Do not share pens with other patients
- When used concomitantly with insulin, do not mix in the same syringe. Injections may be given in the same body regions, but should not be adjacent

Lifestyle Modifications

- DASH-like diet high in fruits, vegetables, and whole grains, and low in sugar and saturated fat
- Weight reduction through diet and exercise
- Incorporate physical activity into a daily routine
 - Moderate to vigorous weight-bearing, resistance exercise
 - At least 30 minutes about 5 times per week
- Raising head end of the bed
- Avoiding meals within 3 hours of bedtime
- Update immunization record
 - Annual flu shot
 - Td once + Td booster every 10 years
 - Pneumovax (PPSV23), if the patient has not received it previously
 - Indication: diabetes
 - Shingrix
 - If the patient has not received the first dose, then next in 2 to 6 months

Additional Considerations

Hypothyroidism

- The American Association of Clinical Endocrinologists and the American Thyroid Association recommend patients being treated for established hypothyroidism should
 - Have serum TSH measurements done at 4-8 weeks after initiating treatment or
 - After a change in dose
- Once an adequate replacement dose has been determined, periodic TSH measurements should be done after 6 months and then at 12-month intervals
 - Or more frequently if the clinical situation dictates otherwise

Additional Counseling (Existing Prescriptions)

Metformin – diabetes medication

- Take two 1000 mg tablets twice daily with meals.
- Side effects may include diarrhea, dyspepsia, flatulence, nausea, vomiting, headache, increased sweating, or asthenia.
- Avoid excessive amounts of alcohol.
- If a dose is missed by more than a couple of hours, skip it and return to the regular dosing schedule. Do not double doses.
- Stay well hydrated during therapy by drinking plenty of fluids.
- Monitor for symptoms of hypoglycemia (increased thirst, headaches, trouble concentrating, blurred vision, frequent urination, fatigue).
- Store in a cool, dry place away from sunlight and children
- Warnings/Precautions
 - Contraindicated in patients with impaired renal function and impaired hepatic function

- Temporarily discontinue therapy when undergoing radiologic studies involving parenteral administration of iodinated contrast material because of effects on renal function
- Do not use in patients with acute or chronic metabolic acidosis, including diabetic ketoacidosis
- Fatal lactic acidosis may occur in patients with elevated blood levels of metformin or if the patient is dehydrated
- Monitor renal function to avoid drug accumulation

Sertraline – depression medication

- Take one 100 mg tablet once daily
- Side effects may include ejaculation failure, dry mouth, increased sweating, somnolence, dizziness, tremor, fatigue, diarrhea, dyspepsia, nausea, insomnia, or reduced libido.
- report worsening depression, suicidal ideation, or unusual changes in behavior
- Avoid the use of alcohol while on this drug
- Symptomatic improvement may not be seen for a few weeks
- If you miss a dose, take a dose as soon as you remember. If it is almost time for your next dose, wait until then and take a regular dose. Do not double dose due to miss
- Avoid activities requiring mental alertness or coordination until drug effects are realized
- Store at room temperature, away from heat, moisture, and direct light
- Warnings/Precautions
 - Contraindicated in patients with hypersensitivity to sertraline or any other component of the product and concomitant use of MAOIs (including linezolid or IV methylene blue, within 14 days of sertraline discontinuation or use of sertraline within 14 days of discontinuing an MAOI) - increased risk of serotonin syndrome
 - QTc prolongation and Torsade de Pointes have been reported
 - Avoid sudden discontinuation of the drug, as this may cause dysphoric mood, irritability, agitation, dizziness, sensory disturbances, anxiety, confusion, headache, lethargy, emotional lability, insomnia, or hypomania
 - Monitor and report symptoms of serotonin syndrome (eg, mental status and neuromuscular changes, gastrointestinal symptoms, and seizures)
 - The potential loss of glycemic control, including hypoglycemia and hyperglycemia

Levothyroxine – thyroid medication

- Take one 112 mcg tablet by mouth every morning on an empty stomach (30-60 minutes before breakfast or any other medications).
- Take this medication 4 hours apart from any antacids, iron, calcium supplements, or foods rich in calcium or iron (e.g. dairy, red meats).
- Improvement of symptoms may not be evident for several weeks.
- Do not suddenly discontinue this drug.

- Side effects include hyperthyroidism (fatigue, heat intolerance, fever, sweating, hyperactivity, tremors, palpitations, myocardial infarction) or seizures.
- If a dose is missed, take it as soon as possible. If it is closer to the time of the next dose than the dose that was missed, skip the missed dose and return to the regular dosing schedule. Do not double doses.
- Store in a cool, dry place away from sunlight and children
- Warnings/Precautions
 - Use is relatively contraindicated in patients with diagnosed but as yet uncorrected adrenal cortical insufficiency, untreated thyrotoxicosis, and in patients with acute myocardial infarction
 - Use with caution in nursing mothers, in patients with cardiovascular disorders (such as angina pectoris), hypopituitarism, or diabetes, and in patients currently taking oral anticoagulants

Ranitidine – gastric acid suppression medication

- Take one 150 mg tablet twice daily with meals.
- Side effects may include bradyarrhythmia, abdominal pain, constipation, diarrhea, nausea, vomiting, dizziness, headache, insomnia, somnolence, agitation, and fatigue
- Patients who are elderly, have chronic lung disease, **diabetes**, or are immunocompromised are at higher risk for developing community-acquired pneumonia while taking this drug
- Take drug 30 to 60 minutes before having foods/drinks that cause their heartburn
- If a dose is missed by more than a couple of hours, skip it and return to the regular dosing schedule. Do not double doses.
- Store in a cool, dry place away from sunlight and children
- Warnings/Precautions
 - Contraindicated in patients with hypersensitivity to ranitidine or any product ingredient
 - Limited testing has found unacceptable levels of a probable human carcinogen, N-nitrosodimethylamine (NDMA), in samples of ranitidine
 - Avoid use in patients with a history of acute porphyria due to risk of precipitation of acute porphyric attacks
 - The symptomatic response does not preclude the presence of gastric malignancy