Scenario: Type I DM

You work in the diabetes (DM) center at a large teaching hospital where you meet K.W. She is a 20-year-old Hispanic woman who was released from the hospital 2 days ago after being diagnosed with type 1 DM.

Nine days ago, K.W. went to see the provider after a 1-month history of frequent urination, thirst, severe fatigue, blurred vision, and some burning and tingling in her feet. She attributed those symptoms to working long hours at the computer. Her random glucose level was 410 mg/dL (22.8 mmol/L). The next day her laboratory values were as follows: fasting glucose 335 mg/dL (18.6 mmol/L), A1C 8.8%, cholesterol 310 mg/dL (8.03 mmol/L), triglycerides 300 mg/dL (3.39 mmol/L), HDL 25 mg/dL (0.65 mmol/L), LDL 160 mg/dL (4.14 mmol/L), ratio 12.4, and creatinine 0.9 mg/dL (80.0 mcmol/L). Her body mass index was 29.6 with a BP 160/96 mm Hg. She was admitted to the hospital for control of her glucose levels and the initiation of insulin therapy with carbohydrate (CHO) counting. After discharge, K.W. has been referred to you for diabetes education. You are to cover 4 areas: pharmacotherapy, glucose monitoring, basic nutrition therapy, and exercise.

1. What is the overall teaching goal with a patient newly diagnosed with type 1 DM?

> To provide education on how to best mange DM while support the patient and their needs. Important points include diet, medications, exercise, and lifestyle modifications

2. What assessments do you need to make before starting your session?

> Her prior knowledge of type 1 DM, education needs, any emotions, physical abilities

3. K.W. was started on sliding scale lispro (Humalog) four times daily and glargine (Lantus) insulin at bedtime. What are the significant differences between the 2 therapies?

Humalog is rapid acting insulin that acts within 10-20 minutes of administration & woks for 3-5 hours. It is best taking before a meal due to how quickly it works.
Lantus is long-acting insulin that has an onset of 1 hour and works 20-26 hours. It's commonly used at night to prevent blood sugar spikes during sleep due to long-acting nature.

4. Outline important content to include about insulin therapy.

Teach her how to self-administer, the side effects & complications to look out for, when to take it, & how to store it

5. What specific points would you include about managing insulin therapy? **Select 5 options.**

a. Store unopened insulin in the freezer.

b. The insulin can be used if it is yellow but not expired.

c. The fastest subcutaneous absorption is from the abdomen

d. Administer the lispro (Humalog) within 15 minutes of eating.

e. Ideally, the glargine (Lantus) should be administered at bedtime.

f. A prefilled syringe can be stored for 24 hours at room temperature.

g. Always administer the injections in the same, easy-to-reach location.

h. The current vial of lispro (Humalog) can be kept at room temperature for 1 month.

i. Two injections will be needed to administer lispro (Humalog) and glargine (Lantus).

6. What is the best way to determine whether K.W. can safely self-administer insulin?

a. Having her describe the process step-by-step

b. Evaluating her A1C levels and daily glucose logs

c. Observing her draw up and administer an insulin dose

d. Asking her to rate her confidence in her ability to give a self-injection

7. Outline important content to review about glucose monitoring.
It helps monitor & manage blood glucose levels. For patient receiving insulin multiple times a day they should monitor the glucose level 4-8 times a day. She should check her glucose level before meals & whenever they are feeling hypoglycemic. Always was wash & dry hands before testing. Follow the instructions for the specific reader.

8. K.W. states her diet is mostly fast foods. The foods she cooks at home are high in starch and fat. Her mealtimes often vary from day to day because of her work schedule. What is CHO counting? Why might this method work well for K.W.?

CHO counting is a method used to help adjust insulin dosage based on number of servings and what the insulin dose would be. It would help her plan meals and make better food choices, along with better glucose control.

9. Outline important points to cover about a basic nutrition plan with CHO counting.

We should teach her how to read food labels & understand the amount of CHO she is consuming each meal. We can also teach her what are some healthier CHO options such as fruits, vegetables, & whole grains.

10. K.W. states that she currently does not exercise at all. What benefits will K.W. receive from taking part in an exercise program?

Decreased insulin resistance, lowering of blood glucose, weight loss, improved cardiovascular health

11. What do you need to teach K.W. about safe exercise?

It's important to eat before exercise and check blood glucose prior. She should include a warm up & cool down period with each time she exercises. Use appropriate footwear, & don't overdo it. A brisk walk is a good form of exercise that is relatively easy.

12. Describe 3 suggestion you can make to help her deal with her condition and follow the treatment plan.

Provide education material to have her take home so she can reference it later. Recommend join a support group or seeing a diabetic educator. Answer questions & let her voice any concerns she may have

13. What outcomes could you use to determine if your teaching with K.W. was effective?

Her demonstrating how to self-administer insulin & check glucose, recognizing s/sx of hyper & hypoglycemia, creating a meal plan, how to properly exercise.

CASE STUDY PROGRESS

K.W. calls the clinic several days later reporting that she has "the flu." She has been nauseated and vomited once during the night. She has had 2 loose stools. She states that she does have a few chills and may have a low-grade fever but does not have a thermometer. She did not check her glucose level this morning or take her insulin because she has not eaten.

15. Based on these findings, you recognize that K.W. may be experiencing _____1_____. The priority intervention is to ____2____.

Options for 1	Options for 2
hyperglycemia	administer the normal morning insulin dose
hypoglycemia	ingest a rapid acting carbohydrate
	measure her glucose level

CLASS PREP: Endocrine

Use an X to indicate whether the instructions below are Indicated (appropriate or necessary) or Contraindicated (could be harmful) for K.W. about managing illness and DM.

Instruction	Indicated	Contraindicated
a. Check glucose level every 2-3 hours throughout the day.	X	
b. Maintain strict NPO status		X
c. Use over-the-counter medications for symptom control.		X
d. Obtain a yearly influenza vaccine.	X	
e. Take insulin as ordered; call back if there you have concerns so the HCP can adjust insulin doses	X	
f. Someone should be with her in case of an emergency.	X	