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?

> Pharmacotherpy: multiple daily injections (4+ per day) or continuous insulin infusion via pump, without insulin will develop diabetic ketoacidosis. Glucose monitoring: . Basic nutrition therapy: day to day consistency in timing and amount of food eaten makes it easier to manage glucose levels. Exericise: daily exericise is best recommendation

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

> What her biggest concerns are, what she is experiencing pertaning to symptoms, her occupation and daily life (does she have a car, live alone, stress, who does grocery shopping), and how much does she know overall about her condition

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: rapid acting, starts working quickly, peaks in 1 to 2 hours, duration is 3 to 4 hours and its used to lower blood sugar after meals or before meals. Lantus: logn acting, starts to work in a couple of hours, minimal peak, duration is about 24 hours, and its for basal insulin coverage and covering blood sugar through the night.

4. Outline important content to include about insulin therapy.

> Know the s/sx of hypoglycemia, how to administer insulin and when to administer because she has two different types to take that dont work the same

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.

Glucose monitoring is essential so you dont get hypoglycemia and you have to monitor before and after meals

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 carbohydrate counting for people with diabetes that involves tracking the total number of carbohydrate grams consumed at each meal and snack to help manage blood sugar. This will work well because of her day to day is not the same for consuming foods

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

What foods have CHO, how to read the food labels, how to measure
food on a scale or measuring cups

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?

K.W will lose weight, make friends, and make a healthy lifestyle choice
that could become a habit

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

I need to teach K.W to take it easy for the first
couple days to and gradually increase

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

check blood glucose before you eat, no skipping meals/delaying, keep a food journal to
document what you are eating on a daily

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

If in the food journal you see daily
intake of what K.W is eating along with
her times of meals being consistent
and her blood glucose level

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	