

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?

managing glucose with medication and understanding glucose levels. Foods low in carbs, sugars, and fats along with daily exercise

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

Assess willingness to learn and their baseline understanding of the diagnosis. What their normal diet/cooking looks like.

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 for meal time and lantus is long term

4. Outline important content to include about insulin therapy.

- how to administer
- how measure glucose
- how to draw dose
- know when to get 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.

how to understand and interpret glucose reading, different ways to track glucose (self vs. continuous)

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 is for tracking the amount of carbs eaten to help manage diabetes. This method would work well for her because it is a simple way to measure carbs from her diet and calculate how much insulin she needs to administer.

CLASS PREP: Endocrine

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

- understanding food labels
- be consistent with carbohydrate intake at each meal
- determining the amount of insulin needed to cover carbohydrate intake

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?

- lowers blood sugar
- improves body response to insulin
- weight management which leads to diabetes management

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

- aerobic exercising helps improve cardiovascular health (walking, swimming)
- make sure your glucose levels are safe prior to exercise

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

- provide print out of foods to incorporate and foods to avoid
- educate on using a daily log to track glucose levels
- provide simple learning handouts to further understanding of diagnosis

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

- they can name 5 low carb foods
- 3 healthy alternatives to some unhealthy foods she currently eats
- she comes up with a realistic exercise routine

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