

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?

sugar management

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

what is her normal diet, knowledge of diabetes,

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?

lispro: rapid acting insulin, works within 15-30min, peaks 30-90 min, lasts 2-4hr

glargine: long acting insulin, works within 1-2hr, peakless, lasts 24hr

4. Outline important content to include about insulin therapy.

proper injection techniques, blood glucose monitoring, sliding scale insulin, signs of hypoglycemia

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.

take glucose levels before eating, interpreting the data, adjusting treatment based on glucose levels, potential issues of hypoglycemia and hyperglycemia

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.?

carbohydrate counting is meal planning that tracks the amount of carbohydrates consumed to help manage blood sugar levels and optimizes insulin dosages. i think this would be beneficial for K.W. bc she will be able to keep track of what she is eating exactly, and she will always have something healthy to eat with her work schedule

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

understanding how different carbs impact blood sugar, using unprocessed foods, reading labels, consider other health factors that may need different diets such as low sodium high proteins

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 risk for diabetes related complications, enhanced overall well being, improved insulin sensitivity

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

check blood sugar before exercise, adjust insulin dose before, plan for hypoglycemia

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

support groups, educate family/friends so they know how they can help, follow a good meal plan and exercise regimen to manage diabetes

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

sugars controlled and managed well with an A1C

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

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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	