## 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?

> The goal for a newly diagnosed patient with Type 1 DM is to help manage their chronic disease by first learning about what it is and understanding lieflong treatment mesaures that will be needed. Such as self insulin injection, dietary modifications, maintaining physical activity, learning how to monitor glucose checks at home.

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

> Ensuring patients level of being able to understand information, seeing if there are an barriers in learning and if there is a need for multple handouts. As well as assessing any support system the patient may have, as it is going to be emotionally helpful to have support.

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 inslun that helps lower the blood glucose.
> Glargine- Long acting insulin that delays and prolongs the absorption of insulin.

4. Outline important content to include about insulin therapy.

> How to self administer insulin, s/s of insulin therpay (hyperglycemia, hypoglycemia), methods for insulin delivery.

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.

Instruction and demonstration of how to use a glucose monitor, how many times a day to check glucose levels, s/s of hyper and hypoglycemia.

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 dietray management technique that is tyoicallt used by people with diabetes to help control blood sugar levels. It tracks the amount of snacks, sugar and carbs intake throughout the day. This method would be good for K.W. because she eats alot of starches and fats at her meal times because of her work schedlue, this way is more flexable and makes he more aware what she is intaking.

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

Carb sources, portion control, to still check blood sugar.

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?

Improved physical and mental health, reducing the risk for chronic disease and it will overall help improve the action of insulin.

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

Monitor blood glucose before activity and to know the s/s of low blood sugar and precautuons to take when starting feel that way.

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

Starting a journal or writing in a planner to keep track of everything, checking blood sugar at the same time everyday so it can become a habit, always keeping extra supplies on hand.

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

Have her demonstrate what was jsut taught to her or even ask her questions to see if she can answer them or has any further questions.

## 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 | |