

Scenario

R.P. is a 19-year-old female who has been complaining to her mother of being thirsty all the time and that she has to frequently leave class to go to the bathroom. R.P.'s mother takes her to the local clinic. R.P.'s vital signs are T 98.6 F., HR 80 beats/min, RR 18 breaths/min. and blood pressure 138/88 mm Hg. She weighs 161 pounds and is 5 feet, 4 inches tall with a BMI of 28.7

The HCP orders lab work and she is to return to the clinic in 1 week. R.P.'s lab results are

WBC 5200/mm ³	RBC 5 million/mm ³
BUN 22 mg/Dl	Creatinine 1.4 mg/Dl
↓ Potassium 3.5 mEq/L	↑ Sodium 144 mEq/L
Fasting BG 212 mg/Dl	Hb A1C 9.8% T/Hgb
↑ Total cholesterol 230mg/Dl	↑ Triglycerides 167 mg/Dl
↑ LDL 200 mg/Dl	↑ HDL 40 mg/Dl

R.P. is diagnosed with T2DM and prescribed metformin 500 mg twice daily with food.

1. The patient's mother asks which blood sugar test is the most significant one in determining a person is diabetic. What is your best response as a nurse? . . .

That the hemoglobin A1C test is the most accurate because it is an estimate of the glycemic control over the last 2 to 3 months.

2. You are discussing the metformin with R.P. and her mother.
 - a. What is the classification of the drug? **Biguanide**
 - b. What is the best explanation for the use of this drug?
Metformin is used to lower blood sugar. When it's used alone it lowers fasting and postprandial blood glucose levels. The drug inhibits glucose production in the liver. It reduces glucose absorption in the gut. Metformin does not stimulate insulin release from the pancreas.
 - c. What side effects are most common with metformin?
Decreased appetite, nausea, diarrhea, lactic acidosis
 - d. Prolonged use of metformin placed RP at risk for what vitamin deficiency?
B12 and Folic Acid
 - e. Which lab value will be monitored while RP is taking metformin?
B12, Albumin to creatinine ratio, glomerular filtration rate, liver function test, CMP, CBC, UA
3. R.P.'s current BMI is 28.7, what health promotion strategies would be included in patient health teaching?
Talking to the patient about ways to lose weight while maintaining glycemic control. Discuss an exercise regimen. Make sure the patient understands the effects exercise has on her blood glucose.

Six months later RP returns to the clinic for a follow-up visit. Her BG is not well controlled, and the HCP adds glipizide 4 mg by mouth daily. RP is also given a glucose monitor with instruction to check her BG every morning and every evening before meals. RP has not managed to lose weight.

1. RP asks why she has to take another medication. What is the nurses best response?

That since her blood glucose is not well controlled the health care provider ordered another antidiabetic drug to help lower her blood sugar.

2. You are discussing the glipizide with R.P. and her mother.
 - a. What is the classification of the drug?

Sulfonylurea

- b. What is the best explanation for the use of this drug?

It helps to control blood glucose by helping your pancreas produce insulin.

- c. What side effects are most common this medication?

Diarrhea, constipation, gas, dizziness, drowsiness, tremors, skin rash, redness, or itching.

One year later R.P. leaves work with due to nausea and vomiting. When she arrives home, she tells her mother she has abdominal pain, muscle pain, and headache. Her mother gives RP an over the counter medication for nausea and vomiting. Several hours later her mother observes that RP is very drowsy and has a weak, rapid pulse. Her mother checks RP's blood glucose, and it is 720 mg/Dl. After arriving at the emergency department, RP admits she quit taking her medication one month ago.

Lab & Diagnostic Testing Results

↑ Serum glucose 421	Sodium 145	↑ Potassium 6.0
↑ BUN 40	↑ Creatine 2.0	↑ AST 21 IU/L
↑ ALT 27 IU/L		
Serum ketones - positive		Serum pH – 7.42
Urine ketones – positive		

After viewing the lab results the HCP orders an insulin infusion of regular insulin in 100 ml of 0.9% saline titrated per protocol orders.

1. The nurse is aware the regular insulin will begin the correct which laboratory values?

Serum glucose and potassium

2. What is the priority nursing intervention while RP is receiving intravenous insulin?

To monitor the patient for signs and symptoms of hypoglycemia.

3. The regular insulin infusion was begun at 0730. When will the nurse begin to monitor for any symptoms of hypoglycemia?

As soon as the infusion starts.

R.P. recovers and will be going home with insulin glargine 36 units subcutaneous injection once daily.

1. What patient teaching should R.P. receive before leaving the hospital? Should RP's mother be present during the teaching?

The proper way to administer subcutaneous insulin and where the appropriate places on her body are.

How to use the injection device.

That the injection sites need to be rotated.

Yes the mother should be present in case her daughter is unable to perform her injections on her own, or has an emergency.

2. What side effects or complications of insulin glargine should you teach RP about?

The S/S of hypoglycemia and what to do if she finds herself in that situation.

Inform the patient about the S/S of pancreatitis and anaphylaxis.

Teach the pt how to handle special situations, like illness, stress, missed doses, accidental overdose, and anything else that could affect her blood glucose adversely.