

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?**
 - The HbA1C test is the gold standard for diagnosing DM. That test takes an average of R.P.'s BG levels over the past 2-3 months and gives a result in a percentage. The fact that R.P.'s HbA1C percentage is over 6.5%, it would be confirmed that she is diabetic. Any result lower than 6 would be consider normal range and a result of 6-6.5% would be determined pre-diabetic.
- 2. You are discussing the metformin with R.P. and her mother.**
 - What is the classification of the drug?** Non-sulfonylureas
 - What is the best explanation for the use of this drug?** Metformin is started immediately after being diagnosed with DM or even pre-diabetes. This drug helps lower BG levels and improves glucose tolerance
 - What side effects are most common with metformin?** GI upset and rarely lactic acidosis
 - Prolonged use of metformin placed RP at risk for what vitamin deficiency?** Vitamin B12
 - Which lab value will be monitored while RP is taking metformin?** Serum creatinine
- 3. R.P.'s current BMI is 28.7, what health promotion strategies would be included in patient health teaching?**
 - Promoting healthy eating (low-fat, low-calorie), physical activity, medications and emotional well-being. It's important to find enjoyable and engaging exercise programs/regimens and recipes that still seem "fun" to make and eat. Being able to arrange one's lifestyle while still finding it enjoyable it will help aide in her emotional health. The patient can do things like creating a cookbook or journal to see her progress in weight loss. It's very important to utilize diet, activity and medications altogether.

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?**
 - a. This medication will help promote insulin release which can help aide in controlling her BG levels.

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?** This drug help your pancreas produce insulin
 - c. **What side effects are most common this medication?** Hypoglycemia, constipation, and weight gain

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, potassium

2. **What is the priority nursing intervention while RP is receiving intravenous insulin?** Continuously monitor BG levels to make sure the patient doesn't go hypoglycemic to quickly

3. **The regular insulin infusion was begun at 0730. When will the nurse begin to monitor for any symptoms of hypoglycemia?** 2-3 hours after (0930-1030) as that is when the peak would occur

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?**

- a. How to administer her insulin injections and monitoring her BG levels (involving teach back method), going over her medications (SE, dosages, routes, reason...teach back as well), informing her about diet, activity, and foot care
- b. Yes, I would also space out these teachings so it wouldn't be an information overload for them and that way they can retain the information.

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

- a. Glargine may cause drowsiness. If blood sugar gets too low, symptoms might include: hunger, shakiness, sweating, chills, dizziness, fast HR, HA, or irritable
- b. It is also important to teach the pt to change injection sites as repeated pokes at one site can cause lipohypertrophy.