

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.

- 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?
Hb A1C. This test measures the average blood glucose level over the prior 2- 3 months. The test is reported as the percentage of total blood. The normal level is considered 6.0. The level that indicates that a person has diabetes is greater than or equal to 6.5.
- You are discussing the metformin with R.P. and her mother.
 - What is the classification of the drug? Biguanides
 - What is the best explanation for the use of this drug? Decreases blood glucose and improves glucose tolerance
 - What side effects are most common with metformin? GI upset, rarely lactic acidosis
 - Prolonged use of metformin placed RP at risk for what vitamin deficiency? B12
 - Which lab value will be monitored while RP is taking metformin? Serum glucose and Hgb A1C
- R.P.'s current BMI is 28.7, what health promotion strategies would be included in patient health teaching?
Education about diet and nutrition. Also educate on the benefits of exercise.

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.

- RP asks why she has to take another medication. What is the nurses best response?
Step 3 of the Approach to treatment for T2DM is lifestyle changes, metformin, and a second drug. Adding glipizide will help promote insulin release while the metformin helps with lowering the BG and improves the glucose tolerance. Giving RP a glucose monitor will help her control her levels and also help her with her diet as she needs to be mindful with counting CHO.
- You are discussing the glipizide with R.P. and her mother.
 - What is the classification of the drug? Sulfonylureas
 - What is the best explanation for the use of this drug? Promotion of insulin release

- c. What side effects are most common this medication? **Hypoglycemia 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, and Potassium**
2. What is the priority nursing intervention while RP is receiving intravenous insulin? **Monitor for hypoglycemia and hypokalemia**
3. The regular insulin infusion was begun at 0730. When will the nurse begin to monitor for any symptoms of hypoglycemia? **The peak of regular insulin is 2-3 hrs. the nurse should check for signs and symptoms around 0930.**

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? **Insulin glargine is a long acting insulin and should be administered once daily, at the same time everyday.**
2. What side effects or complications of insulin glargine should you teach RP about? **Teach about rotating injection sites to avoid lipohypertrophy.**

