

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?
 - Hemoglobin A1C is a single blood draw that averages the last three months levels
- 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?
 - It helps lower the blood glucose and improves glucose tolerance
 - What side effects are most common with metformin?
 - GI upset
 - 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?
 - Creatinine, serum vitamin B12, pH
- R.P.'s current BMI is 28.7, what health promotion strategies would be included in patient health teaching?
 - Teach R.P. to slowly begin frequent exercises like walking, or lifting small weights
 - Teach R.P. how important a healthy diet and using correct portion sizes for meals.

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?
 - "Our current approach of Metformin and the lifestyle changes are not working. If we add this second medication with your current treatment of metformin and lifestyle changes, It will help treat the diabetes more aggressively . But remember that our priority for type 2 diabetes is lifestyle changes such as diet and exercise. If you can care for yourself, you can get rid of your type 2 diabetes and wont need the second medication."

2. You are discussing the glipizide with R.P. and her mother.
 - a. What is the classification of the drug?
 - Sulfonylureas
 - b. What is the best explanation for the use of this drug?
 - A diabetic medication that controls the blood glucose levels by helping the pancreas to create more insulin
 - 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, creatine, potassium, BUN, ketones
2. What is the priority nursing intervention while RP is receiving intravenous insulin?
 - Verifying that the insulin is regular since this is the only IV form of insulin, verifying with another nurse and setting it at the correct rate.
3. The regular insulin infusion was begun at 0730. When will the nurse begin to monitor for any symptoms of hypoglycemia?
 - Anywhere from 0930- 1030 since the peak is 2-3 hours

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?
 - Teach how important it is to take all the medication as prescribed, do not stop taking them unless directed otherwise.
 - When sick you need to increase fluid intake and make sure it is caloric as well. Such as chicken broth. Monitor your BG, test for ketones, and if you are vomiting more than once and have diarrhea more than 5x, contact PCP.

- Make sure that insulin Glargine is taken at the same time every day and continue to monitor your BG regularly.
- Teach patients how important it is to maintain a healthy diet and exercising.
- Yes R.Ps. mother should be present during the teaching, because R.P. lives with her and might need her assistance.

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

- Hyperglycemia Teach the patient that it has to be given once a day, at the same time everyday