

**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 <sup>3</sup>	RBC 5 million/mm <sup>3</sup>
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? **Hgb A1C because it's an average of BG over 3 months**
2. You are discussing the metformin with R.P. and her mother.
  - a. What is the classification of the drug? **Biguanides**
  - b. What is the best explanation for the use of this drug? **Quick acting, lowers BG and improves glucose intolerance**
  - c. What side effects are most common with metformin? **GI upset, Lactic acidosis (IV dye (renal failure))**
  - d. Prolonged use of metformin placed RP at risk for what vitamin deficiency? **B-12**
  - e. Which lab value will be monitored while RP is taking metformin? **Hbg A1C, CBC (BUN and Creatin), electrolytes, CMP, fasting BG levels**
3. R.P.'s current BMI is 28.7, what health promotion strategies would be included in patient health teaching? **Exercising, calorie counting**

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 are the nurses best response? **If your diabetes cant be controlled through dieting and exercise the Dr. has to get you on some medication to control it and sometimes it takes more than one kind because different insulins work differently such as onsets, peaks, and duration and we need to make sure your whole day is covered adequately**
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? **This drug promotes natural 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? **Dehydration, K+**
2. What is the priority nursing intervention while RP is receiving intravenous insulin? **Cardiac monitoring**
3. The regular insulin infusion was begun at 0730. When will the nurse begin to monitor for any symptoms of hypoglycemia? **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? **Mother should be present for support, teaching should be how important it is to take the insulin as prescribed and even when sick to still take the insulin**
2. What side effects or complications of insulin glargine should you teach RP about? **Can cause rapid weight gain, SOB, take at the same time every day**