Case Study 1: Patient N.B.

Diabetic Ketoacidosis

Patient Profile
N.B., a 34-year-old Native American man, was admitted to the emergency department after he was found unconscious by his wife in their home.

Subjective Data (Provided by Wife)
- Was diagnosed with type 1 diabetes mellitus 12 mo. ago
- Was taking 50 U/day of insulin: 5 U of lispro insulin with breakfast, 5 U with lunch, and 10 U with dinner Plus 30 U of glargine insulin at bedtime
- States a history of gastroenteritis for 1 wk with vomiting and anorexia
- Stopped taking insulin 2 days ago when he was unable to eat

Objective Data
Physical Examination
- Breathing deep and rapid
- Fruity acetone smell on breath
- Skin flushed and dry

Diagnostic Studies
- Blood glucose level 730 mg/dL (40.5 mmo1/L)
- Blood pH 7.26

Discussion Questions
1. Briefly explain the pathophysiology of the development of diabetic ketoacidosis (DKA) in this patient.

The patient was diagnosed with type 1 which led to the body having no insulin. The body was not able to get glucose into the cells for energy since insulin is required. This led to the body having to burn fat (ketones) for energy which led the symptoms he was experiencing above. He also was ill and stopped taking his insulin, which can lead to hyperglycemia and eventually DKA.

2. What clinical manifestations of DKA does this patient exhibit?

Vomiting, anorexia, breathing deep and rapid, fruity acetone smell on breath

3. What factors precipitated this patient's DKA?

Stopping the insulin use, feeling ill with gastroenteritis, not eating

4. Priority Decision: What is the priority nursing intervention for N.B.?

Monitor for fluid and electrolyte replacement effectiveness

5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia?

A patient with HHS usually has enough insulin so that DKA does not occur. With hypoglycemia, there is a low blood sugar versus DKA that has a high blood sugar. The patient has type one and DKA usually happens in type 1 diabetics.

6. Priority Decision: What is the priority teaching that should be done with this patient and his family?

To make sure he is taking his insulin, especially in a time of illness and make sure he is not skipping meals.

7. What role should N.B.'s wife has in the management of his diabetes?

Making sure he still takes his insulin and trying to help him make sure he eats. Also, make sure he drinking fluids to stay hydrated.

8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses? Are there any collaborative problems?

Moving them every 2hours, so they don't get skin breakdown. The priority nursing diagnosis would be risk for skin breakdown. The patient is unconscious, so there may be a risk of pressure ulcers.

9. Evidence-Based Practice: N.B.'s wife asks you if she should have given her husband insulin when he got sick? How would you respond?

Yes, because when the body is under stress or the individual is sick the sugar goes up even more. The patient may even need more insulin.