FRANCHESCA SAUCEDA

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.
   - DKA can quickly develop, in this patient he is experiencing physical stress due to the gastroenteritis. This patient also taking too little of insulin.

2. What clinical manifestations of DKA does this patient exhibit?
   - The patient is experiencing deep, rapid breathing, acetone smell on his breath along with his skin being flushed and dry.

3. What factors precipitated this patient's DKA?
   - Because the patient was experiencing a lot of vomiting due to the gastroenteritis which probably led to the decrease of calorie intake given that he is experiencing anorexia. He also stopped taking his insulin which led to glucose not being the primary energy source. This causes fat that is store and proteins to be used as energy. The patient's pH level is also in balanced and acidosis developed.

4. Priority Decision: What is the priority nursing intervention for N.B.?
   - Maintaining the patient's airway and administering oxygen.

5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia?
   - HHS most commonly occurs in the older adult patient with type 2 diabetes. Also, the HHS patient produces enough insulin to prevent DKA.

5. Priority Decision: What is the priority teaching that should be done with this patient and his family?
   - The patient's family should understand even if the patient experiences an illness, he should continue insulin and food intake. Food intake should be increased because of the of the required energy. The family should also know how often to check BG of patient. fluid intake is important to prevent dehydration. If the patient has a BG over 250, they should call HCP.

6. What role should N.B.'s wife have in the management of his diabetes?
    - She may have to take over monitoring BG and being an encouragement for food/fluid intake.

8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses? Are there any collaborative problems?
    - Some nursing diagnoses include decrease in fluid volume, imbalanced nutrition, and ineffective self-management of BG.
    - Problems: electrolyte disturbance

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?
    - It is important to take over the management of your husband's diabetes especially when he is sick. Monitoring his BG and administering insulin should be continued even if he becomes sick.