

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 mmol/L)
- Blood pH 7.26

Discussion Questions

1. Briefly explain the pathophysiology of the development of diabetic ketoacidosis (DKA) in this patient. Diabetic ketoacidosis occurs when your blood sugar raises dramatically because of a profound deficiency of insulin. It is characterized by hyperglycemia, ketosis, acidosis, and dehydration.
2. What clinical manifestations of DKA does this patient exhibit? The patient was experiencing vomiting, anorexia, Kussmaul respirations, and a fruity breath. These are all clinical manifestations of DKA.
3. What factors precipitated this patient's DKA? The patient developed an infection, gastroenteritis, which caused him to have vomiting and anorexia. He stopped taking his insulin 2 days ago which caused him to have an inadequate insulin dose therefore allowing his blood sugar to rise.
4. Priority Decision: What is the priority nursing intervention for N.B.? The patient needs to be re-hydrated so a bolus of normal saline will be started along with IV insulin.
5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia? HHS only occurs in T2DM. Also, in HHS there is enough circulating insulin to prevent ketoacidosis. As far as hypoglycemia, the patient would not experience this in DKA because they do not have insulin in their system meaning their blood sugar levels will be extremely high and not low.
5. Priority Decision: What is the priority teaching that should be done with this patient and his family? The patient needs to be taught that even on sick days insulin should still be given.
6. What role should N.B.'s wife have in the management of his diabetes? She should make sure he is getting his insulin and the correct dosages at the right times of the day.
8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses?

Are there any collaborative problems?

Deficient knowledge would be the priority nursing diagnosis for the patient since he was just diagnosed with Type 1 Diabetes Mellitus 12 months ago. He might not understand the importance of insulin and why his body needs it multiple times a day. I would teach the patient about adhering to his insulin regimen.

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, she should have given him insulin because you are never supposed to hold insulin even on sick days.