

Brenley Irvin

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.
DKA is caused by profound deficiency in insulin. When the patient stopped taking his insulin for 2 days, his blood sugar was uncontrolled due to lack of insulin production by the pancreas.
2. What clinical manifestations of DKA does this patient exhibit?
Breathing rapidly (Kussmaul respirations), fruity acetone smell on breath, anorexia, vomiting.
3. What factors precipitated this patient's DKA?
Gastroenteritis that caused vomiting and anorexia causing the patient to be unable to eat.
4. Priority Decision: What is the priority nursing intervention for N.B.?
Get pt rehydrated and restore electrolytes.
5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia?
His pH level was 7.26 which indicates acidosis, and his blood sugar was 730 which is Hyperglycemia.
6. Priority Decision: What is the priority teaching that should be done with this patient and his family?
"Sick day rules", maintain a normal diet if able to, increase fluids, continue taking antidiabetic medications, if normal diet is not possible, supplement with CHO containing fluids while continuing medications.
7. What role should N.B.'s wife have in the management of his diabetes?
Encourage N.B. to continue eating or supplementing for CHO containing fluids and encourage the continuation of antidiabetic medications.
8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses? Are there any collaborative problems?
The priority is to rehydrate the pt, give insulin and restore electrolyte imbalance. The pt was most likely already dehydrated due to vomiting and anorexia caused by gastroenteritis. Also should assess renal status with BUN.
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, diabetic should adhere to "sick day rules" and continue taking insulin even when they get sick.