

## **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 a profound deficiency of insulin characterized by hyperglycemia, ketosis, acidosis, and dehydration. N.B had gastroenteritis and insufficient insulin which lead to the development of DKA.
2. What clinical manifestations of DKA does this patient exhibit?  
Anorexia, vomiting, fruity breath odor, deep and rapid breathing (Kussmaul), Blood glucose level of 730mg/dL, blood pH 7.26
3. What factors precipitated this patient's DKA?  
Gastroenteritis, stopped taking insulin 2 days ago
4. Priority Decision: What is the priority nursing intervention for N.B.?  
Maintain a patent airway and O2 admin
5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia?  
In HHS, the patient would produce enough insulin to prevent DKA but not enough to prevent hyperglycemia.
6. Priority Decision: What is the priority teaching that should be done with this patient and his family?  
N.B. and his family should be taught that even when he is sick he needs to continue to take his insulin and try to eat.
7. What role should N.B.'s wife have in the management of his diabetes?  
She can be sure that N.B. is monitoring his blood glucose levels when sick.
8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses? Are there any collaborative problems?  
Deficient fluid volume, deficient knowledge, risk for injury.  
Collaborative problems: hyperglycemia
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?  
As N.B.'s family she should monitor his blood glucose when sick and know when to give it.