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.
    - **N.B. went into DKA because he stopped taking insulin while he was unable to eat due to nausea and vomiting. N.B. also had an increase in the release of counterregulatory hormones due to his body being under assault from gastroenteritis. The release of counterregulatory hormones opposing the effects of insulin in addition to the missed doses of insulin put him into DKA and raised his sugar extremely high to 730.**
2. What clinical manifestations of DKA does this patient exhibit?
    - **The clinical manifestations that the patient exhibited include skin flushed and dry, fruity breath, and Kussmaul respirations.**
3. What factors precipitated this patient's DKA?
    - **Precipitating factors include illness, gastroenteritis. The body was under assault and releasing counterregulatory hormones and then was worsened when he stopped taking his insulin.**
4. Priority Decision: What is the priority nursing intervention for N.B.?
    - **The priority nursing intervention with DKA is rehydration. Starting N.B on normal saline first and then giving IV insulin infusion.**
5. What distinguishes this case history from one of hyperosmolar hyperglycemic syndrome (HHS) or Hypoglycemia?
    - **DKA is more seen in type 1 diabetics, which N.B. has. HHS is seen more in elderly and type 2 diabetics. DKA also exhibits Kussmauls respirations and sweet fruity breath, while HHS and hypoglycemia do not.**
6. Priority Decision: What is the priority teaching that should be done with this patient and his family?
    - **Priority teaching would be to tell the patient that they should not have stopped taking the insulin even though they were unable to eat. Teach him to contact the health care provider first if they have any questions in regard to taking insulin, especially during other illness and infection because when the body is under assault it realses hormones that oppose the effects of insulin.**
7. What role should N.B.'s wife have in the management of his diabetes?

- **His wife should help him to manage his diabetes by being an active and following along with his medicine and blood glucose to help manage since he has only been diagnosed for a year he is probably still learning since diabetes is incredibly complex. She could help him by keeping track of his insulin to make sure he doesn't miss a dose.**

8. Priority Decision: Based on the assessment data presented, what are the priority nursing diagnoses? Are there any collaborative problems?
    - **The priority diagnoses is the dehydration. He has been vomiting and nauseous and we need to treat that above all else, then get him started on continuous IV insulin. It is a collaboration of dehydration from vomiting with the gastroenteritis and missing insulin doses causing him to go into DKA.**
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?
    - **I would say yes you should have still given him his insulin even though he was sick. Always take insulin no matter what, even if you are sick and if you have any doubts or concerns contact your health care provider**.