

Diabetic Ketoacidosis

Difficulty: Intermediate

Setting: Outpatient clinic, hospital emergency department

Index Words: diabetic ketoacidosis (DKA), type 1 diabetes mellitus (DM), crisis management

Scenario

You are working in an outpatient clinic when a mother brings in her 20-year-old daughter, C.J., who has type 1 diabetes mellitus (DM) and has just returned from a trip to Mexico. She's had a 3-day fever and diarrhea with nausea and vomiting (N/V). She has been unable to eat and has tolerated only sips of fluid. Because she has been unable to eat, she has not taken her insulin.

Because C.J. is unsteady, you bring her to the examining room in a wheelchair. While assisting her onto the examining table, you note that her skin is warm and flushed. Her respirations are deep and rapid, and her breath is fruity smelling. C.J. is drowsy and unable to answer your questions. Her mother states, "She keeps telling me she's so thirsty, but she can't keep anything down."

1. List four pieces of additional information you need to elicit from C.J.'s mother.

CASE STUDY PROGRESS

The mother tells you the following:

"Blood glucose monitor has been reading 'high' " (some glucometers do not read above 400 mg/dl).

"C.J. has had sips of ginger ale but that's all."

"She has been vomiting about every other time she drinks."

"When she first got home, she went [voided] a lot, but yesterday she hardly went at all, and I don't think she has gone today."

"She went to bed early last night, and I could hardly wake her up this morning. That's why I brought her in."

2. Describe the pathophysiology of diabetic ketoacidosis (DKA).

3. Explain the patient's presenting signs and symptoms (S/S). (List six.)

CASE STUDY PROGRESS

Her current vital signs (VS) are 90/50, 124, 36 and deep, 101.3° F (tympanic).

4. Are these VS appropriate for a woman of C.J.'s age? Why or why not? Discuss your rationale.

5. A decision has been made to transport C.J. by ambulance to the local ED. After evaluating C.J., the ED physician writes the following orders. Carefully review each order. Mark with an “A” if the order is appropriate; mark with an “I” if inappropriate. For each order you mark as “I,” explain why it is inappropriate and correct the order. In addition, identify any appropriate interventions that should be added to the list.

1. 1000 ml Lactated Ringer’s (LR) IV STAT
2. 36 units lente insulin and 20 units regular insulin SC now
3. CBC with differential; complete metabolic panel (CMP); blood cultures · 2 sites; clean-catch urine for urinalysis (UA) and culture and sensitivity (C&S); stool for ova and parasites, *Clostridium difficile* toxin, and C&S; serum lactate, ketone, and osmolality; arterial blood gases (ABGs) on room air
4. 1800-calorie, carbohydrate-controlled diet
5. Ambulate qid
6. Acetaminophen (Tylenol) 650 mg PO
7. Furosemide (Lasix) 60 mg IV push (IVP) now
8. Urinary output every hour
9. VS every shift

CASE STUDY PROGRESS

All orders have been corrected and initiated. C.J. has received fluid resuscitation and is on a sliding scale insulin drip via infusion pump. Her latest glucose was 347 mg/dl.

6. What is the rationale behind using an infusion pump for the insulin drip?
7. C.J. is ready for transport to the medical ICU. C.J.’s mother is beginning to realize that C.J. is more acutely ill than she thought. She leaves the room and begins to cry. How would you handle this situation?
8. C.J.’s mother asks where she can get more information on how C.J. can control her diabetes. What are some resources she may find useful?

CASE STUDY PROGRESS

C.J. is transported to the MICU in slightly improved condition. She continues to improve and is discharged from the hospital 3 days later.