

Scenario:

A 20-year-old male, with a recent diagnosis of Type 1 diabetes mellitus, is brought into the ED by his mother. His chief complaint is abdominal pain with nausea and vomiting for the last 48 hours. His nurse just recently ended orientation, and this is the first patient she is taking on her own. She immediately does an assessment and finds the patient is dehydrated, has fruity breath, is confused and blood glucose is 400 with high levels of ketones in his urine. When questioned by the nurse, the patient states that he hasn't been taking his insulin as much because he hasn't been eating since he felt sick. The nurse draws labs and they are all in normal range. It seems like the only thing that needs to be treated is the high blood sugar and dehydration. She suspects DKA and wants to check with another nurse or the provider, but the ED is slammed, and everyone is busy. Instead of interrupting any of her colleagues, the nurse decides to give him rapid acting insulin and start him on an insulin drip per hospital protocol, as well as NS 125 mL/hr. 30 minutes later, the patient is complaining of heart palpitations, extreme weakness, and muscle twitching. She hooks the patient up to an EKG and finds U waves and a flattened T wave. She immediately brings these results to the doctor. The doctor then asks if she checked the patient's potassium levels before administering the insulin, and she said that she has and the patient's potassium was 3.7 which is normal. The doctor angrily tells her to stop the insulin, draw labs to check potassium levels, and start the patient on the potassium drip. The nurse follows orders, gets the patient stable, and transfers him to the ICU.

Describe the scenario. In what way did the patient care or environment lack? Is this a common occurrence?

In this scenario, the new nurse has a patient in DKA. The new nurse knows to give fluids and insulin, but she forgets to closely monitor potassium. She wants to check with another person before initiating the protocols, however, the ED is very busy, and she doesn't want to slow anyone down. She gives the insulin and NS once she has checked that her labs are within normal limits. Her patient then becomes hypokalemic because of the insulin administration. The environment lacked because they were very busy, and the patient care lacked because the new nurse felt that there was no time to confer with another nurse. It is very common for the hospital to get overwhelmingly busy to the point where people cut corners and patient care suffers.

What circumstances led to the occurrence?

First, the patient did not know that he still needed to take insulin and check his blood sugar when he was sick. This is what put him into DKA. The next thing that went wrong was when the new nurse did not want to interrupt her colleagues to check to make sure she was giving the correct medications. She did not know that insulin puts glucose and potassium into the cells which will lower potassium levels. Although the patient had normal potassium levels when she first obtained labs, the potassium lowered once the insulin started putting glucose into the cells.

In what way could you measure the frequency of the occurrence? (interviewing nurses, examining charts, patient surveys, observation, etc)

You could perform monthly chart audits on patients who received insulin to see if this occurred. Also, interviewing nurses could help, but it may not give you as accurate results as medication charts, documentation, and lab results.

What Evidence based ideas do you have for implementing interventions to address the problem?

Many hospitals have an insulin protocol and a potassium protocol. However, I think there should be a DKA protocol. For example, if the patient's potassium is between 3.5-4.0 before giving insulin, then potassium should be given with insulin. Even though it is initially within a normal range, we know it will go down once insulin is administered. By giving potassium with the insulin, we can prevent hypokalemia and additional issues in these patients. Another intervention would be for another nurse to verify potassium level before administration of insulin. We know that insulin needs a 2-nurse verification, so when the other nurse is verifying the insulin, she could also ask was the patients potassium level. Additionally, there could be a mentor (another nurse in the hospital) program where the new nurse can call their mentor to make sure they are making the right decision and following protocols. Since the ED was very busy, the new nurse didn't want to slow anyone down by asking for guidance. If she had a mentor, then she could have called her to ask for advice. Also, additional nurse teaching/training is always a great way to prevent mistakes and to know what to expect when a nurse gets a patient with a disease that they are not familiar with.

How will you measure the efficacy of the interventions?

You can measure efficacy by doing chart audits and seeing how many times this mistake happens. Then you can implement the DKA protocol and do chart audits again 6 months to a year later and see if there were less occurrences of hypokalemia when giving insulin.