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Pharmacist's Letter
Hospital

Know Key Updates for Managing Diabetic Ketoacidosis

Managing diabetic ketoacidosis (DKA) will be in the spotlight, based on new Am Diabetes Association guidance...the first update in 15 years.

The focus is still IV fluids, insulin, and electrolyte replacement.

But be aware of key changes based on evolving evidence.

Treating DKA with subcutaneous rapid-acting insulin. New guidance carves out a role for this instead of IV insulin in select cases...based on data that it's effective, safe, and seems to reduce ICU admissions.

For example, consider using subcutaneous insulin for milder DKA cases...such as patients who are alert and hemodynamically stable with blood ketones under 6 mmol/L and serum bicarb above 15 mEq/L.

Develop a specific subcutaneous insulin DKA protocol.

Include initial fluid resuscitation with IV crystalloids (lactated Ringer's, etc). When glucose falls below 250 mg/dL, modify fluids to include IV dextrose...to prevent hypoglycemia as treatment continues.

Start subcutaneous rapid-acting insulin (lispro, etc) stat. Be aware, regimens vary. For instance, some protocols use 0.1 units/kg for the bolus...then 0.1 units/kg Q1H to start. Other protocols use 0.3 units/kg for the bolus...then 0.2 units/kg Q2H to start.

Monitor blood glucose frequently, such as every 1 to 2 hours, and reduce rapid-acting insulin doses as glucose improves. For example, step doses down to 0.1 units/kg Q2H when blood glucose is below 250 mg/dL.

Also monitor pH and electrolytes at least Q4H. If possible, use nursing-led protocols to replete electrolytes (potassium, etc).

Managing euglycemic DKA. Roughly 10% of DKA cases present with blood glucose under 200 mg/dL...due to SGLT2 inhibitor use, pregnancy, liver failure, etc.

Ensure your protocol addresses managing euglycemic DKA, usually with IV insulin. There are little data for subcutaneous insulin in these cases.

For example, provide guidance on starting IV insulin for DKA even if blood glucose is under 200 mg/dL...if patients meet other criteria, such as blood ketones of 3 mmol/L or higher and serum bicarb below 18 mEq/L.

And clarify that IV dextrose-containing fluids should start at the same time as insulin in these cases...to prevent hypoglycemia while waiting for ketoacidosis to resolve.

With SGLT2i-induced ketoacidosis, help weigh restarting the SGLT2i case by case at discharge...since safety data are lacking.

For instance, think about resuming the SGLT2i for a patient with a compelling indication (heart failure, etc). But lean away from resuming for a patient with recurrent DKA while on an SGLT2i.

Use our resource, Hyperglycemia in the Hospital, for more, including prevention and identification of ketoacidosis due to an SGLT2i.

Key References:

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