

Be Ready to Manage Ketoacidosis Due to an SGLT2 Inhibitor

You'll get **questions about how to manage euglycemic ketoacidosis due to SGLT2 inhibitors**...as their use increases.

Ketoacidosis due to an SGLT2 inhibitor (SGLT2i) is rare...occurring in less than 0.1% of patients. And it's easy to overlook...blood glucose is often normal or only slightly elevated.

Identification. Be alert for possible triggers of ketoacidosis in patients taking an SGLT2i, such as fasting...infection...reducing insulin doses...or surgery.

And monitor for symptoms that may suggest ketoacidosis...nausea, shortness of breath, unusual fatigue, etc.

With SGLT2i-induced ketoacidosis, expect the anion gap to be greater than 10 and serum bicarb below 18 mEq/L. But **UNLIKE** most DKA, these patients may have blood glucose below 250 mg/dL.

Check arterial blood gas and serum ketones for confirmation.

Don't rely on urine ketones to rule out ketoacidosis due to an SGLT2i...since urine ketone strips don't measure beta-hydroxybutyrate, the ketone body that's predominant in these cases.

Treatment. Focus on IV fluids, insulin, and electrolyte replacement, as with other cases of DKA...but be aware of nuances.

For example, start IV dextrose-containing fluids at the same time as insulin with SGLT2i-induced ketoacidosis...to prevent hypoglycemia while waiting for acidosis to resolve.

And rely on an IV insulin infusion...there are little data for subcutaneous insulin in these cases.

If needed, update your DKA protocol to include distinctions for managing euglycemic DKA, such as guidance on starting IV insulin even with blood glucose under 250 mg/dL.

Before discharge, help weigh restarting the SGLT2i case by case.

For instance, lean toward 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.

Prevention. Ensure you have policies and protocols to mitigate risk. For example, stop an SGLT2i 3 to 4 days before planned surgery and hold until oral intake is back to normal.

Reduce insulin doses cautiously if patients use an SGLT2i plus insulin at home. For example, avoid stopping insulin altogether...and discourage relying on sliding scale alone.

And avoid starting SGLT2i in patients with type 1 diabetes...even if there's a compelling indication (heart failure, etc).

Use our resource, *Hyperglycemia in the Hospital*, for additional guidance.

Key References:

- Selwyn, J.; Pichardo-Lowden, A.R. Managing Hospitalized Patients Taking SGLT2 Inhibitors: Reducing the Risk of Euglycemic Diabetic Ketoacidosis. *Diabetology* 2023, 4, 86-92.
- Mehta PB, Robinson A, Burkhardt D, Rushakoff R.J. Inpatient Perioperative Euglycemic Diabetic Ketoacidosis Due to Sodium-Glucose Cotransporter-2 Inhibitors - Lessons From a Case Series and Strategies to Decrease Incidence. *Endocr Pract.* 2022 Sep;28(9):884-888.

Cite this document as follows: Article, Be Ready to Manage Ketoacidosis Due to an SGLT2 Inhibitor, Hospital Pharmacist's Letter, November 2023

The content of this article is provided for educational and informational purposes only, and is not a substitute for the advice, opinion or diagnosis of a trained medical professional. If your organization is interested in an enterprise subscription, email sales@trchealthcare.com.

© 2024 Therapeutic Research Center (TRC). TRC and Hospital Pharmacist's Letter and the associated logo(s) are trademarks of Therapeutic Research Center. All Rights Reserved.

-Patel K, Nair A. A Literature Review of the Therapeutic Perspectives of Sodium-Glucose Cotransporter-2 (SGLT2) Inhibitor-Induced Euglycemic Diabetic Ketoacidosis. Cureus. 2022 Sep 27;14(9):e29652.

-ISayed NA, Aleppo G, Aroda VR, et al. 16. Diabetes Care in the Hospital: Standards of Care in Diabetes-2023. Diabetes Care. 2023 Jan 1;46(Suppl 1):S267-S278.

Hospital Pharmacist's Letter. November 2023, No. 391112

Cite this document as follows: Article, Be Ready to Manage Ketoacidosis Due to an SGLT2 Inhibitor, Hospital Pharmacist's Letter, November 2023

The content of this article is provided for educational and informational purposes only, and is not a substitute for the advice, opinion or diagnosis of a trained medical professional. If your organization is interested in an enterprise subscription, email sales@trchealthcare.com.

© 2024 Therapeutic Research Center (TRC). TRC and Hospital Pharmacist's Letter and the associated logo(s) are trademarks of Therapeutic Research Center. All Rights Reserved.