A Case of Euglycemic Diabetic Keto Acidosis

Dear sir,

Here with reporting a case of severe metabolic acidosis in a type 2 diabetic patient receiving Empagliflozin. Even though it is well known that SGLT 2 inhibitors may induce euglycemic diabetic ketoacidosis, to my knowledge, it is first case report from Kerala. I think it is our duty to sensitise our practitioners about this uncommon but dreadful complication especially when this class of drugs are becoming popular and affordable in our country.

A 52-year-old medical practitioner with Type 2 diabetes of 4 years receiving 20 units of Glargine, 1000 mg of Metformin (which was eventually discontinued due to gastric intolerance) and 25 mg of Empagliflozin, who was reported at the emergency room with history of weakness, poor oral intake, malaise and tightness of chest in the evening. Earlier, he had a busy day in his nursing home with history of being unwell, retching, nausea with two episodes of vomiting. He received 500 ml of intravenous isotonic saline and pantoprazole before being presented himself at the ER.

At the time of presentation, he was conscious and apprehensive, having clinical dehydration, tachycardia, acidotic breathing and a blood pressure of 100/70 mm/Hg.

Initial laboratory studies were as follows: Hemoglobin: 15 gm/dl, Urea: 62 mg/dl, Creat: 1.2 mg/dl, Na+: 140 mEq/L, K+: 3.5 mEq/L, HbA1C: 9.5%, glucose: 237 mg/dl, sodium: 141 mmol/L, potassium: 3.7 mmol/L, serum osmolality of 300 mOsm/kg, pH: 6.9, anion gap: 36 mEq/L, bicarbonate: 6.5 mEq/L and CO2 of 10 mmol/L. Urine and serum ketones were positive.

Possibility of acute coronary event and urosepsis were ruled out. After other aetiologies of anion-gap acidosis were excluded, he was treated for euglycemic diabetic keto acidosis (euDKA) with intravenous insulin and fluids, with
resolution of the acidosis. His anti-glutamic acid decarboxylase was negative (14 IU/ml [n/l value <30]) and he had a normal C-peptide (1.1 ng/mL [n/l range 0.9-4.3]). He was discharged on basal-bolus insulin regimen.

The two interesting points in this narration are that in spite of being a clinician himself, he did not realise him slipping in to severe keto-acidosis, and the occurrence of euDKA inspite of receiving basal insulin.

**Conclusion**

SGLT2 inhibitors have been associated with an increased risk of diabetic ketoacidosis, which led to a warning from the Food and Drug Administration (FDA) in May 2015.[1,2] SGLT2 inhibitors are associated with approximately twice the risk of diabetic ketoacidosis as compared to DPP4 inhibitors.[3] The increased risk of diabetic ketoacidosis with SGLT2 inhibitors are among the factors to be considered at the time of prescribing and throughout therapy if patients present with symptoms suggestive of diabetic ketoacidosis.[3]

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

**Conflicts of interest**

There are no conflicts of interest.