

Case Report: Euglycaemic Diabetic Ketoacidosis (euDKA) during an elective laparotomy for ovarian cancer secondary to SGLT2 inhibitor use in the perioperative period.

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INTRODUCTION

Sodium-Glucose co-transporter-2 (SGLT2) inhibitors are licenced in Europe for the treatment of Type 2 Diabetes Mellitus (T2DM). They have a risk of causing euDKA.

Current AAGBI/UK guidelines suggest stopping SGLT2i the day of surgery. Several recent warnings have been published on the use of SGLT2 inhibitors perioperatively.

We identify a case that should encourage the update of local and national guidance for their use.

CASE REPORT

Background A 76 year old female post midline laparotomy for ovarian cancer was admitted to our PACU for postoperative observations due to her frailty and multiple co-morbidities; T2DM, hypertension & hypercholesteraemia.

Medications Lisinopril (5mg), Cyanocobalamin, Gliclazide (80mg), Saxagliptin with metformin (2.5mg + 1000mg), Empagliflozin (10mg), Simvastatin 40mg.

Anaesthetic General Anaesthetic + spinal intrathecal diamorphine.

CLINICAL COURSE

Intraoperatively noted labile blood pressure and a metabolic acidosis despite minimal blood loss, 3L of crystalloid, adequate urine output and postoperative renal function. **Initial urinary ketones 4+.**

	1 st ABG	IV Bicarb Infusion	IV Insulin Infusion
pH	7.194	7.272	7.40
PCO2	5.15	4.38	4.47
PO2	30.9	17.5	11.9
BM	8.1	8.3	9.1
Lactate	0.9	0.8	0.8
BXS	-13.2	-11.7	-3.9
HCO2	14.8	15.9	21.5

DISCUSSION

- SGLT2 inhibitors prevent glucose reabsorption by the proximal convoluted tubule, reducing circulating glucose intravascularly. (1)
- Other benefits include; reduced HbA1c, weight loss, reduction in blood pressure, diabetic nephropathy protection with an overall decrease in cardiovascular deaths. (2)
- EuDKA is a rare but a serious complication of SGLT2i
- Recent guidance for perioperative consideration for SGLT2i:
 - UK - stop before major surgery or in acute serious medical illnesses, measure blood ketone levels (3)
 - US (FDA) - stop three days before surgery (4)
 - Australia & New Zealand - hold three days preoperatively, check blood ketones morning of surgery (5)

CONCLUSION There is a need for updated Local and National Guideline for perioperative management of SGLT2 inhibitors