**Title**

Cohort Analysis of SGLT2 Inhibitor-Induced Diabetic Ketoacidosis in hospitalised people with Type 2 Diabetes Mellitus.

**Background**

Sodium-glucose cotransporter-2 inhibitors (SGLT2i) are widely used agents for Type 2 Diabetes Mellitus (T2DM), and cardiac and renal disease. Diabetic ketoacidosis (DKA) is a possible serious adverse effect of SGLT2i use. Risk factors include infection, fasting, dehydration, surgery and non-adherence with medications; all are common during acute hospital care.

**Aim**

To analyse characteristics among T2DM in-patients who experienced SGLT2i-induced DKA (SGLT2i-DKA) and compare 2022-2024 trends.

**Method**

From 2022 patients referred to Liverpool Hospital Inpatient Endocrinology, with SGLT2i-DKA, have been analysed. Twelve months from 2022 were presented; here we present the 2024 analyses and at the conference the 12 months to months comparison.

**Results**

For 2024: 22 patients (50% male) were assessed; (mean±SD) age 67.2±15.6years, T2DM

duration 13.9±9.6years, HbA1c 9.7±2.1%, length of hospital stay to eDKA 1.0±0.9days.

Time from fasting to eDKA 5.9±7.5hrs; time to resolve eDKA 9.6±4.8hrs.

Empagliflozin 86%, dapagliflozin 14%. Admissions: Surgery: 6; Medicine 15; ICU directly 1.

Clinical status: directed fasting 11; infection 9, sepsis 1; directed fasting and infection 6.

SGLT2i-DKA labs: creatinine 84.5±50.5µmol/L, bicarbonate 18±5.4mmol/L, lactate 2±2.1mmol/L. Initial and worst respectively: pH (7.3±0.1,7.3±0.1), ketones (4±1.6mmol/L, 2.8±2.0mmol/L), BGLs (10.1±3.2mmol/L, 14.7±3.1mmol/L).

For SGLT2i-DKA management, 4 were transferred to ICU, 2 had procedures cancelled/delayed, 4 progressed their DKA.

For discharge, 2 died during the admission, 4 were new onto insulin, and 90% were discharged without restarting SGLT2i.

**Conclusion**

SGLT2i-DKA occurred in those with poor glycaemic control, in admissions via emergency and who had infection. Time to detection was short and cases treated and resolved within 24hours. Review of temporal trends can assist teams to stratify risk of SGLT2i-DKA, detect early and also better manage discharge advice.