**Prevalence and Determinants of Diabetic Ketoacidosis (DKA) Admissions and Recurrence: A 24-Month Retrospective Study**

**Aim:**
Diabetic ketoacidosis (DKA) imposes a significant healthcare burden. This study aimed to evaluate its prevalence, precipitants and identify determinants of recurrence in a single intensive care unit (ICU).

**Methods:**

Retrospective data was collected from the Australian and New Zealand Intensive Care Society (ANZICS) Database for all ICU admissions for patients ≥16 years diagnosed with DKA over a 24-month period (January 2022-December 2023) in a tertiary Sydney hospital. Electronic medical records were analysed to compare characteristics of patients with Type 1 diabetes (T1D) and Type 2 diabetes (T2D), and single versus recurrent admissions across the 24 months.

**Results:**

A total of 123 DKA admissions occurred in 94 patients. Compared with T2D, T1D patients were leaner (BMI 23.3 vs 28.1kg/m²;p<0.001) and younger (29 years vs 60 years ;p<0.001). Infection was the commonest precipitating factor in both T1D (34.1%) and T2D (39%), followed by treatment non-adherence in T1D (30.5%) and SGLT2-inhibitor use in T2D (24.4%). T2D patients exhibited greater illness severity with higher Acute Physiology and Chronic Health Evaluation (APACHE) III scores (55 vs 43;p<0.001) but presented with lower admission glucose (23 vs 30 mmol/L;p=0.018), and comparable pH (7.08 vs 7.07;p=0.7).

Among the 94 patients, 57% had T1D and 43% T2D. 69 patients had a single DKA admission, 6 patients had one readmission, and 7 patients had between 2 to 10 readmissions. T1D patients comprised 80% of those with recurrent admissions.Recurrent presenters were more likely to be smokers (48% vs. 16%;p=0.001), with a numerical but not statistical difference in age (35 vs. 45 years; p=0.12) and depression rate (36% vs. 19%;p=0.083).

**Conclusion:**

DKA is considerably driven by modifiable factors with a high prevalence of recurrent DKA, that disproportionately impacted T1D patients who were smokers. This underscores the need for targeted strategies and research into modifiable risk factors to mitigate recurrence.