

Characteristics of patients with SGLT2 inhibitors associated DKA between 2008 and 2020: a case series from King's College Hospital

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Introduction:

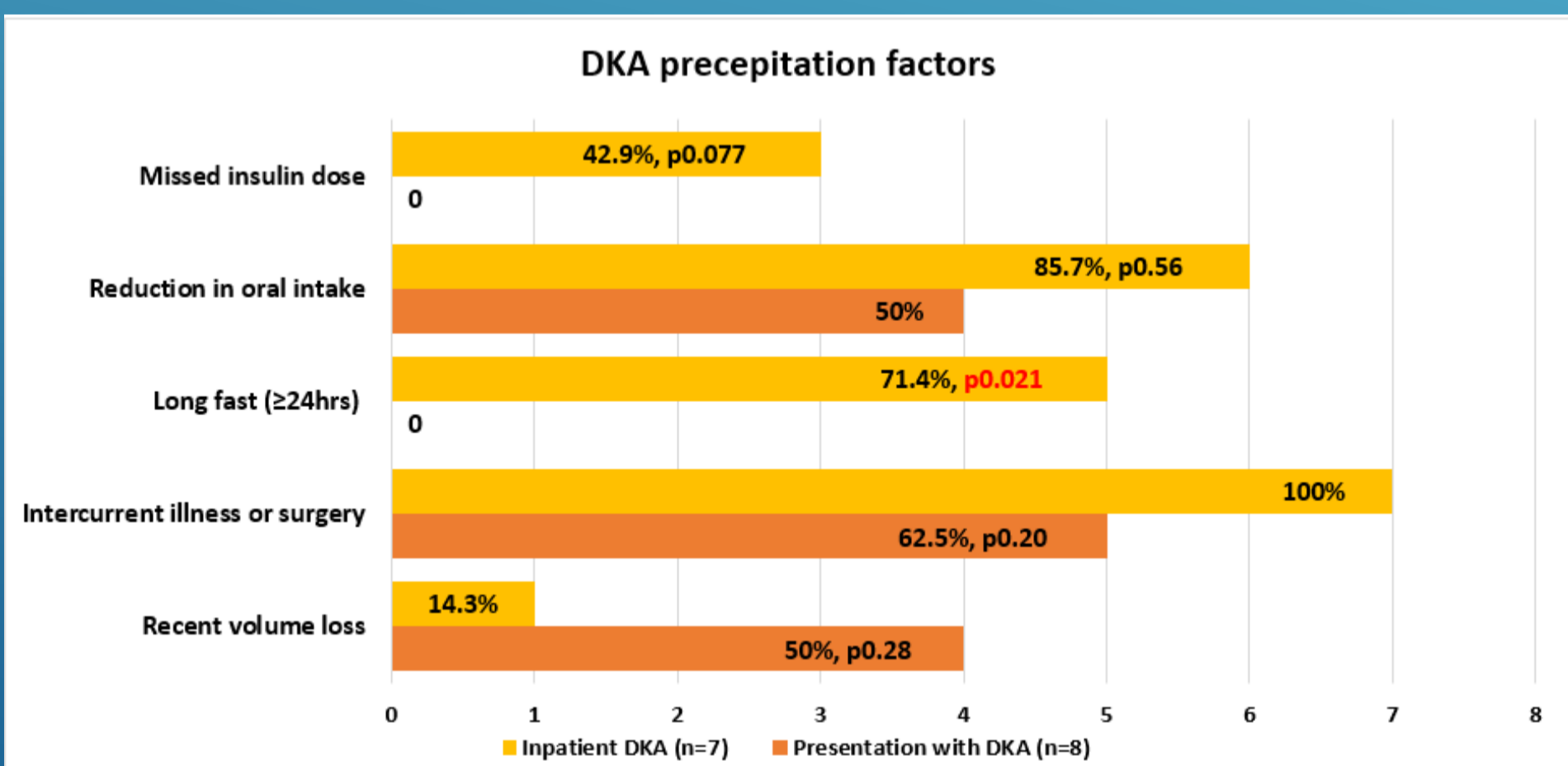
This case series aim to describe and define characteristics of patients treated for DKA associated with Sodium Glucose Co-transporter 2 inhibitors (SGLT2i) at King's College Hospital, London between 2018 and 2020.

Methods:

All DKA cases in patients with type 2 diabetes using SGLT2i between 2018 and 2020 were retrieved from inpatient diabetes referrals and case notes reviewed, and patient personal, diabetes and DKA related variables were retrospectively summarized, comparing in-hospital DKA with DKA occurring at presentation.

Results:

- ❖ 15 patients were identified with mean age of 57.3 ± 12.43 years. 7 (46.6%) patients were females.
- ❖ Seven (46.7%) of the DKA episodes occurred during hospitalisation, with a mean diagnosis delay of 14.17 ± 3.7 hours.
- ❖ SGLT2i was taken in the same day of DKA in 8 (53.3%) patients.
- ❖ Mean glucose at DKA diagnosis was 15.3 ± 6.1 mmol/l, with 6 (40%) patients had glucose ≤ 10 mmol/l.



Variables	DKA occurred in hospital (median [IQR])	Presentation with DKA (median [IQR])	p-value*
Delay in identifying DKA (hours)*	14.17 ± 3.68	4 ± 8.55	0.85
Diabetes duration (years)	17 [10-24]	9 [6-14.5]	0.202
Most recent HbA1c (%)	8.6% [7.1%- 9.0%]	10.95% [8.6%-12.4%]	0.021
Duration of SGLT-2I use (months)	12 [6-17]	17.5 [4.75 -49]	0.527
HbA1c within 2 months of SGLT2-I start (%)	9.05% [8.18- 11.05]	9.10%	1.00

*Mann Whitney U test. No difference in biochemical DKA characteristics

Discussion:

- In this case series of T2DM patients with SGLT2i induced DKA, patients tend to have longer duration and poor control of diabetes, with intercurrent illness or surgery as precipitating factor.
- Patients and healthcare professionals should be aware of sick day rules and to have clear guidance on when to check for ketones and to stop SGLT2i, when they are unwell or in preparation to procedures requiring fasting, to prevent this life threatening complication.