Real-world prevalence and characteristics of diabetic ketoacidosis in type 1 diabetes in the French SFDT1 cohort: the SFDT1-DKA study

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Disclosure

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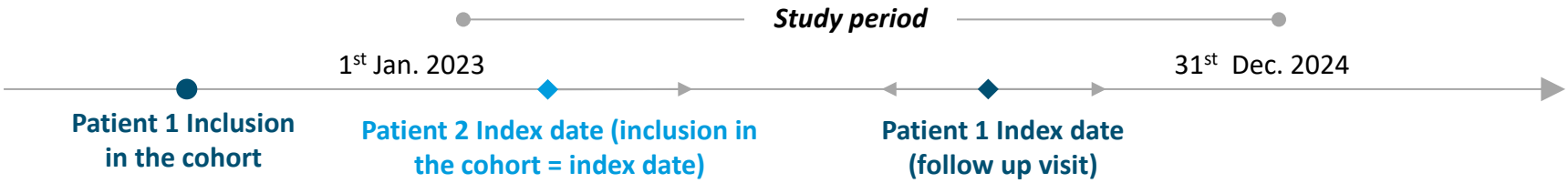
Context and objectives

- **SFDT1 = S**uivi en **F**rance des personnes avec un **D**iabète de **T**ype **1.**
- **Design:** prospective registry of French adults living with T1D.
- **Data sources:** Patient-reported outcomes (PROs); Face-to-face interviews; Physical examinations & clinical assessments; Biobank; Continuous glucose monitoring (CGM) measures; access to French reimbursement claims database.
- **Aim of this specific study:** To describe the real-world prevalence, socio-demographic characteristics and clinical events associated with DKA, both overall and for sub-populations of interest.

SFDT1 – retrospective study on DKA in T1DM

Study design and patient count



INCLUSION CRITERIA

- T1DM Patients
- Included in the SFDT1 cohort
- Latest available data collected between 1 Jan 23 – 31 Dec. 24 (inclusion or update)
- Registered contact (email and mobile phone)
- Not opposed to the use of their data as part of this specific research

	N patients
Patients included in SFDT1 as of 10 March 2025	4,677
Latest available data collected during the study period	3,155
Not opposed to data processing	3,127
With available data on glycemic outcomes	2,685

The full analysis set for the retrospective analysis includes 2,685 patients

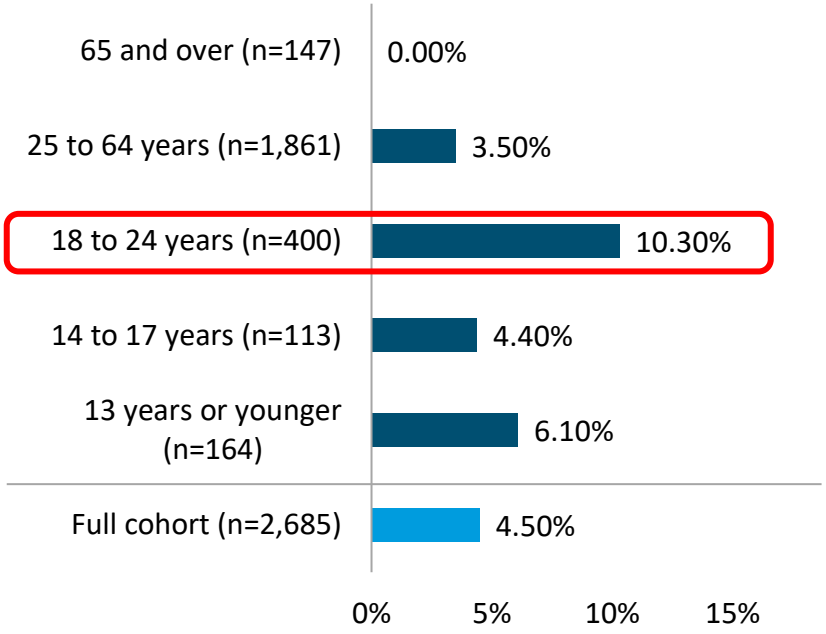
General characteristics of the selected population

`	TOTAL COHORT (N=2,685)
Male	**51.4%**
Mean Age	**36.5 years**
≤13 years	**6.4%**
14-17 years	**4.0%**
18-24 years	**15.4%**
25-64 years	**69.1%**
≥65 years	**5.1%**
Mean HbA1c (last recorded)	**7.7%**
Patients with mean HbA1c1 ≥7%	**70.6%**
Insulin Treatment	
Multiple daily injections	36.4%
Pump (not AID)	41.9%
Automated insulin delivery (AID)	21.7%
Glucose monitoring	
Using sensor (alone or with strips)	95.8%
Using strips alone	3.7%

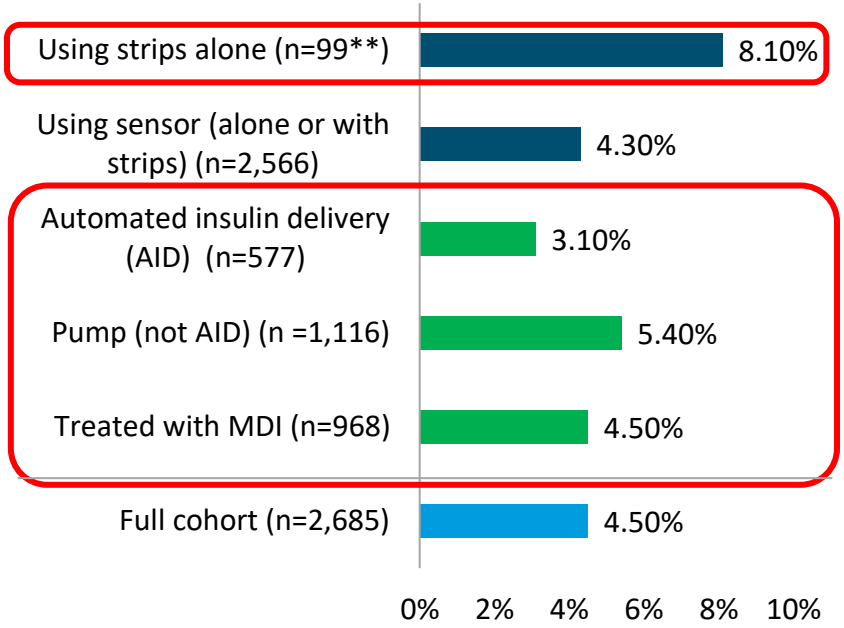
(continue table)	TOTAL COHORT (N=2,685)
Complications and comorbidities	
Diabetic retinopathy	27.8%
Chronic Kidney Disease	9.8%
Cardiovascular event (at least 1)	5.7%
Systolic Pressure (mean mmHg)	121.9
Diastolic Pressure (mean mmHg)	71.9

Patients reporting DKA over the last 12 months: 4.5%

BY AGE (%)



BY DIABETES TREATMENT AND MONITORING (%)



DKA prevalence is calculated considering the N of patients reporting DKA over the last 12 months before index date **low sample size

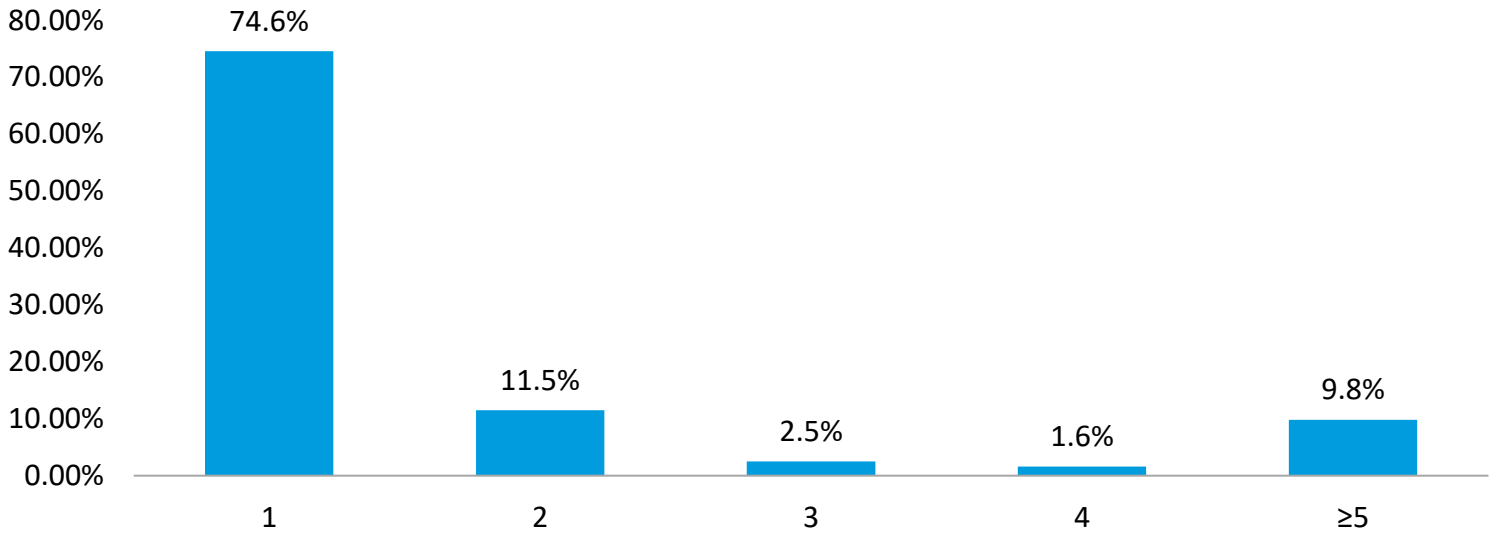
Characteristics of the population reporting DKA over the last 12 months

	REPORTED DKA (N=122)	NO DKA REPORTED (N=2,563)	P-VALUE
Baseline characteristics			
Mean age at index	**29.3**	**37.1**	**<0.001**
Mean age at diabetes diagnosis (years)	**14.1**	**16.2**	**0.015[1]**
Mean diabetes duration (years)	**15.2**	**21.0**	**<0.001[1]**
Mean % HbA1c*	**8.7**	**7.6**	**0.001**
Insulin regimen			**0.147**
Multiple daily injections (n, %)	**44 (36.1%)**	**924 (36.4%)**	
Pump (not AID) (n, %)	**60 (49.2%)**	**1,050 (41.6%)**	
AID (n, %)	**18 (14.8%)**	**559 (22.0%)**	
Pump users			
Pump (not AID) • Total daily insulin dose (UI/day) (mean)	**26.6**	**36.9**	**0.036[1]**
Automated insulin delivery (AID) • Total daily insulin dose (UI/day) (mean)	**34.8**	**48.1**	**0.041[1]**
Pump + sensor (not AID) • *Time to pump+sensor initiation* (mean)	**4.8 years**	**7.8 years**	**0.008[1]**
Glucose Monitoring			
SMBG (N patients, %)	**18 (14.8%)**	**222 (8.7%)**	**0.021[2]**

* Last reported %HbA1c [1]Wilcoxon rank-sum test [2]Chi-square test of independence

Distribution of patients reporting DKA by number of event in a year

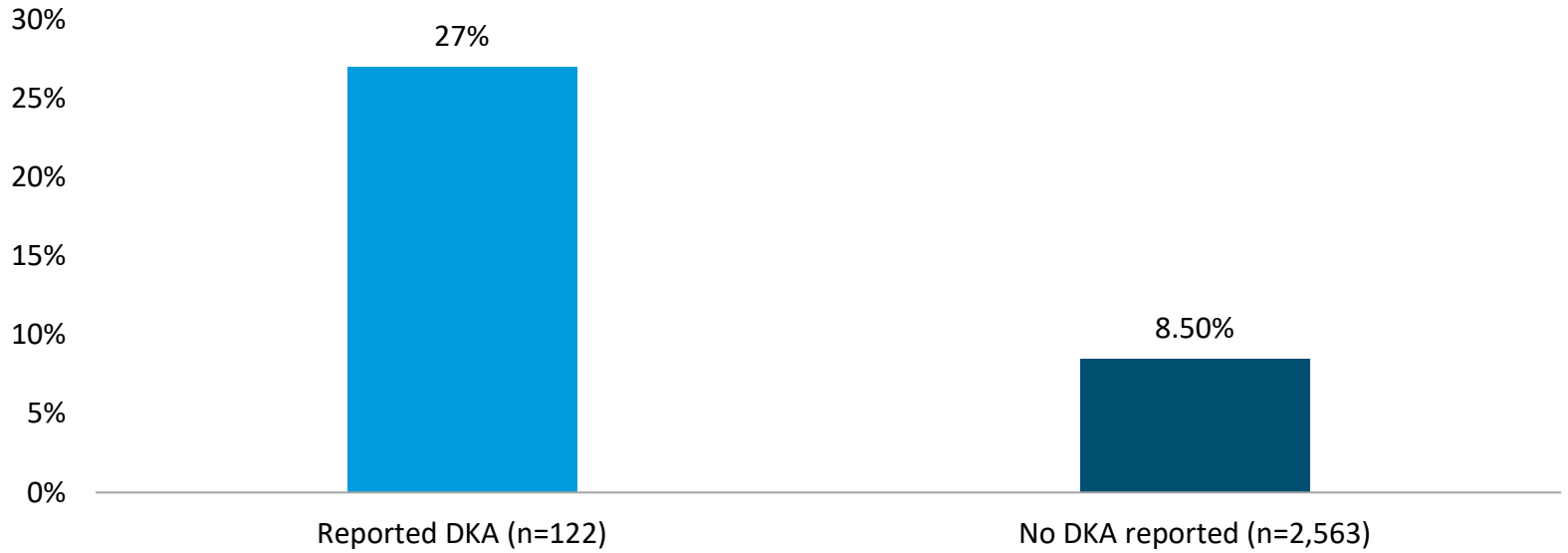
DISTRIBUTION OF PATIENTS BY NUMBER OF ANNUAL DKA EVENTS (N=122)*



*Patients reporting at least 1 DKA event in the year

Percentage of patients reporting severe hypoglycemia according to the presence of DKA the previous year

PROPORTION OF PATIENTS REPORTING ≥1 SEVERE HYPOGLYCEMIA IN A YEAR (N,%)



Statistically significant differences comparing both groups for both analysis A and B (p<0.001 ; respectively chi-square test and fisher's exact test) ; SH reported in the past 12 months before index date

Conclusion

- **DKA still prevalent: 4.5** % of the 2,685 participants had ≥1 episode — even with 95% CGM use and 22% on automated insulin delivery.
- **Distinct risk profile:** DKA linked to younger T1D, shorter disease duration, and higher HbA1c.
- Although CGM adoption has clearly reduced DKA rates, a residual burden persists – showing there is still important room for further improvement.
- Those with DKA also showed more **severe hypoglycemia episodes**, underscoring the importance of closely monitoring glycemic variability and supporting the **educational reinforcement of ketone monitoring**.
- These findings emphasize the need for personalised and data driven diabetes management.

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Notre CRO associée

Les experts qui nous accompagnent

Thank you for your attention