

Incidence and severity of new-onset paediatric Type 1 diabetes in the COVID-19 pandemic

— a UK multicentre perspective.

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Background

- Paediatric diabetes has been the focus of attention during the COVID-19 pandemic.
- There are reports of increased incidence of new-onset type 1 paediatric diabetes and concerns about delayed presentations to the Emergency Department (ED) due to parental fears of SARS-CoV-2, resulting in an increase in the incidence and severity of DKA in children with new-onset diabetes.

Aims

- > To investigate the perceptions
- > To investigate the proposed relationship of new-onset T1DM with SARS-CoV-2
- > To explore the incidence and severity of decompensation to DKA

Methods

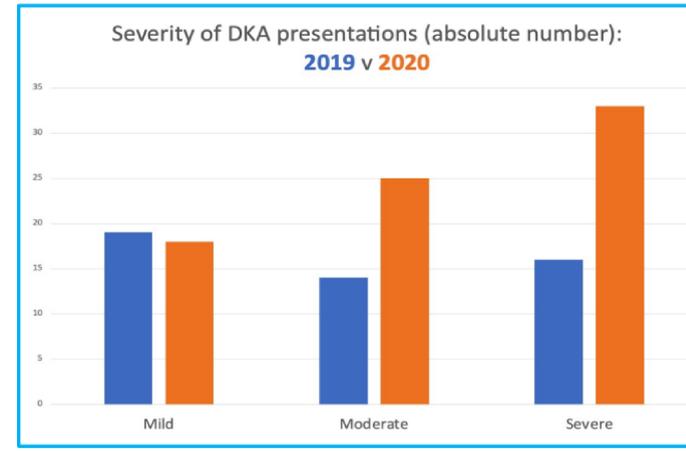
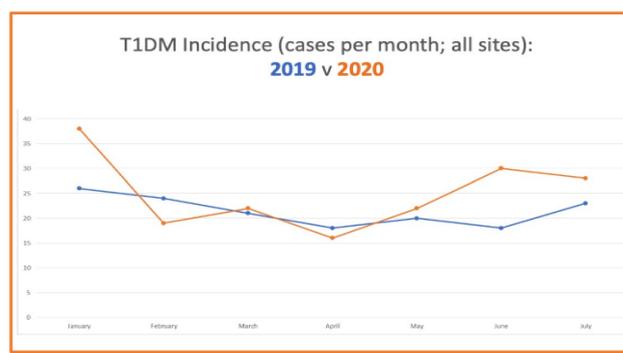
Multicentre, retrospective data of new-onset T1DM during the COVID-19 pandemic in children aged **6 months to 17 years** from **12 paediatric diabetes units (PDUs)** across South London, Kent, Brighton, and North East London. We compared the characteristics of **178 children** presenting with new-onset T1DM **between January to July 2020** with those of **150 children** who presented during the same period in 2019.

Results



A significant increase in the incidence of DKA during the pandemic

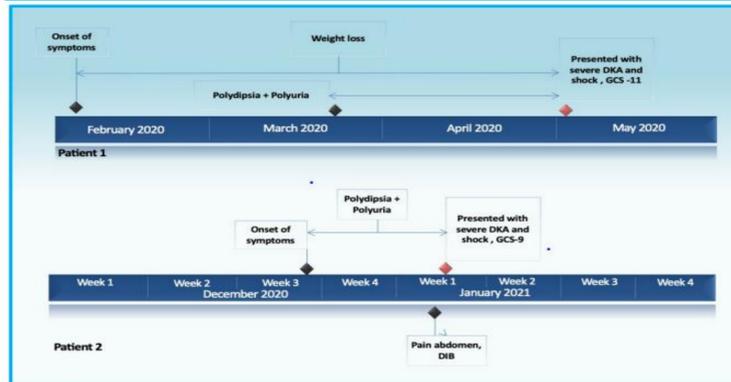
A significant increase in the absolute numbers of severe DKA: 2019 - 16 vs 2020 - 36



Peak in incidence in Jan, following by a trough in March to May, then unusual clustering of children with T1DM in June and July across all units

	2019			2020		
	All patients (n = 150)	Not in DKA (n = 101, 67.3%)	DKA (n = 49, 32.7%)	All patients (n = 178)	Not in DKA (n = 102, 57.3%)	DKA (n = 76, 42.7%)
Age						
<5 years	21 (14)	16 (16)	5 (10)	33 (18)	17 (17)	16 (21)
5 - 11 years	61 (41)	42 (41)	19 (39)	70 (40)	48 (47)	22 (29)
12 - 17 years	68 (45)	43 (43)	25 (51)	75 (42)	37 (36)	38 (50)
Gender						
Male	80 (53)	56 (55)	24 (49)	89 (50)	44 (43)	45 (59)
Female	70 (47)	45 (45)	25 (51)	89 (50)	58 (57)	31 (41)
Duration of symptoms before presentation						
<2 weeks	52 (35)	31 (31)	21 (43)	81 (46)	45 (44)	36 (47)
2 weeks or greater	98 (65)	70 (69)	28 (57)	97 (54)	57 (56)	40 (53)
Ethnicity						
White	106 (71)	79 (78)	27 (55)	122 (68)	69 (68)	53 (70)
Black	17 (11)	7 (7)	10 (20)	27 (15)	15 (15)	12 (16)
Asian	10 (7)	5 (5)	5 (10)	14 (8)	8 (8)	6 (8)
Mixed	5 (3)	4 (4)	1 (2)	3 (2)	1 (1)	2 (3)
Other	12 (8)	6 (6)	6 (12)	12 (7)	9 (9)	3 (4)
DKA Severity						
Mild	-	-	19 (39)	-	-	18 (24)
Moderate	-	-	14 (29)	-	-	25 (33)
Severe	-	-	16 (33)	-	-	33 (43)

Descriptive Study
Two children with new onset type 1 diabetes presented with **severe DKA and shock** and tested positive for **SARS-CoV-2**, providing evidence of a link with diabetes and SARS-CoV-2. See timelines below.



Conclusions

Increase in the **number** and **severity** of children presenting with **DKA** in 2020. 2020 was a high incidence year for **new onset T1DM** in children, **however COVID-19 pandemic is not dramatically increasing incidence of paediatric T1DM**. A mix of **qualitative** and **quantitative** aspects gives a signal that there **may be a link** between COVID-19 and new onset T1DM in children.

Recommendations

1. We recommend **universal COVID-19 serology testing** in children with new-onset diabetes in the pandemic.
2. It is vital to emphasise **early recognition and prevention of DKA** in children with new-onset paediatric diabetes given the high incidence in the pandemic.