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Demographic and disease related characteristics at the acute onset of childhood type 1 diabetes in relation to incidence

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Conclusion

The incidence of childhood diabetes in Helsingborg in southern Sweden has increased substantially over recent decades despite immigration from areas with lower diabetes risk. The causes for this, and the contribution by social, clinical and laboratory parameters at the onset, are still unclear.

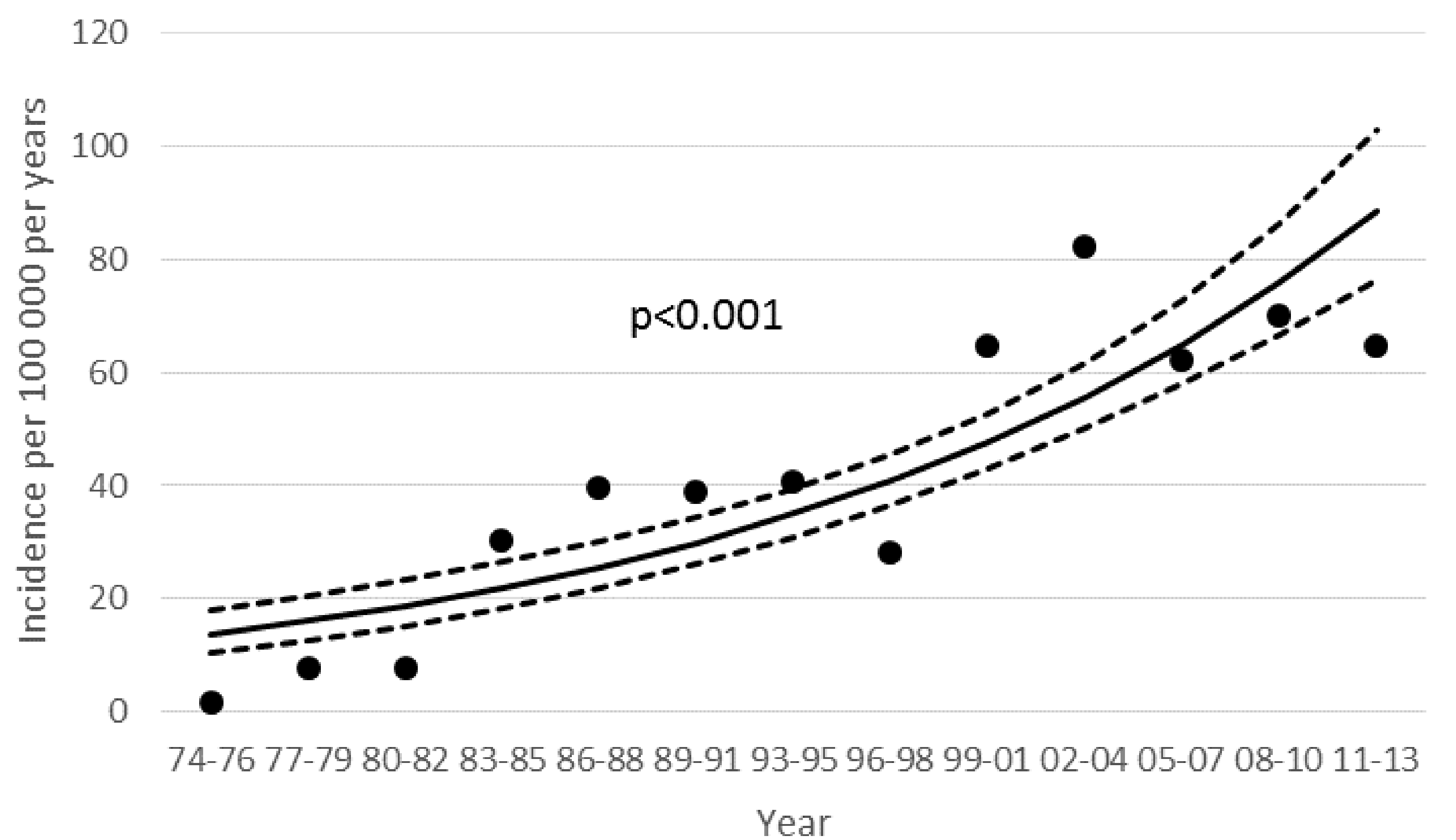


Figure 1. Incidence rate of childhood type 1 diabetes by years. Observed (points) and trend (line) rates with 95 % confidence interval (dashed line) predicted by a Poisson regression model.

Table 1. Comparison of characteristics at the acute onset of type 1 diabetes between two groups diagnosed in 1993 to 1998 and 2011 to 2013.

Characteristics	DM diagnosis 1993-98 n = 45	DM diagnosis 2011-13 n = 51	p-value
Female/Male	16/29	20/31	NS
Family history of DM (%)	26 (61.9) n=42	29 (56.9)	NS
Nordics (%)	45 (100)	45 (88.2)	0.01
Age at DM diagnosis (years)	10.2 (5.9-14.5)	9.1 (6.2-12.7)	NS
Duration of symptoms (days)	14.0 (7.0-21.0) n=44	11.5 (3.5-21.0) n=48	NS
Weight loss (%)	25 (75.8) n=33	30 (62.5) n=48	NS
BMI (kg/m ²)	16.4 (14.8-18.3) n=32	16.4 (14.5-18.4) n=46	NS
vP-glucose (mmol/l)	24.6±7.9 n=40	25.3±11.2 n=37	NS
HbA1c (mmol/mol)	90.0±20.5 n=44	82.6±27.4	NS
C-peptide (nmol/l)	0.25 (0.17-0.31) n=31	0.23 (0.15-0.46)	NS
vB-pH	7.4 (7.3-7.4) n=18	7.4 (7.3-7.4)	NS
Base excess (mmol/l)	-1.0 (-6.7-0.7) n=43	-1.0 (-11.0-1.0)	NS
Ketoacidosis (%)	14 (31.1)	16 (31.4)	NS
Intensive care (%)	1 (2.2)	8 (15.7)	0.03
Coeliac disease (%)	0 (0) n=43	5 (10) n=50	NS

The data are presented as mean ± SD, median (interquartile range) or number (percent)

Aim

The aim of this study was to retrospectively determine possible differences in demographic and disease related variables between patients with type 1 diabetes with onset during childhood when the incidence was lower respectively higher to further highlight the acute onset of childhood type 1 diabetes.

Materials and methods

Data collected from medical records of children and adolescents with onset of type 1 diabetes 1993-1998 (n=48) were compared with data from children and adolescents diagnosed 2011-2013 (n=51).

Results

The incidence of type 1 diabetes in our region was 35/100,000 children and adolescents per year during 1993-1998 and increased to 65/100,000 per year 2011-2013 ($p < 0.001$), Figure 1. All patients diagnosed in 1993-1998 were Nordics whereas only 88.2% in the latter group ($p = 0.01$). The use of intensive care was more common in the group with onset 2011-2013 ($p = 0.03$). No other significant differences were found between the groups, Table 1.