

SEX DIFFERENCES OVER TIME FOR GLYCAEMIC CONTROL, PUMP USE AND INSULIN DOSE IN PATIENTS AGED 10-20 YEARS WITH TYPE 1 DIABETES

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INTRODUCTION

Therapy in type 1 diabetes has undergone a fundamental change over the last several decades, especially by the use of technical devices. Another change that took place is the growing awareness of sex differences of all kind, e.g. as influencing factors of metabolic control.

AIM

Our study aimed to evaluate sex differences over two decades with regard to

- ✓ changes in glycaemic control
- ✓ trends in insulin pump use
- ✓ trends in insulin dose.

Migrant background was taken into account.

METHOD

Via DPV database (international diabetes registry) people with type-1-diabetes aged 10-20 for the time period 1999-2018 were identified. Linear regression analyses adjusted for age, diabetes duration, migration background and repeated measurements were used to create HbA1c-trends, trends about insulin pump use and insulin dose. Subsequently, stratification by migrant background was made.

RESULTS

The cohort's characteristics are shown in table 1. Figure 1 displays HbA1c-trends from 1999-2018, figure 2 shows the use of insulin pump over time and figure 3 trends in insulin dose.

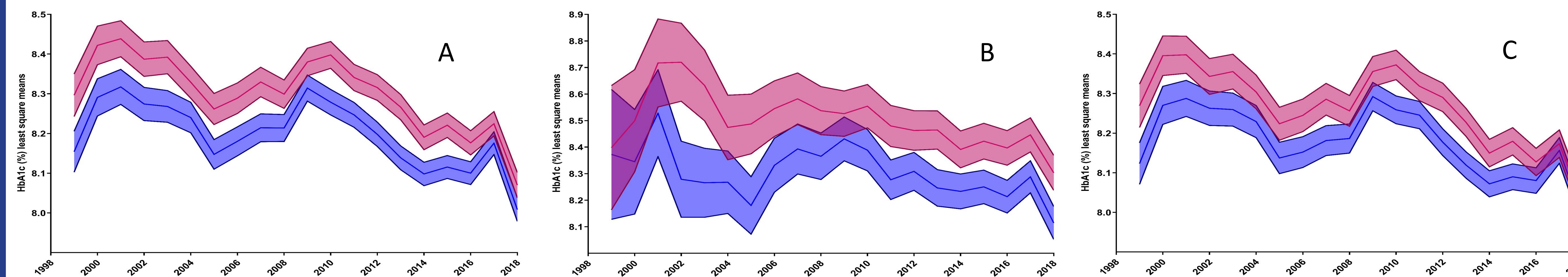


Figure 1 A-C: Least square means and 95% CI for HbA1c (%) over time for the whole group of boys and girls (A), for the group with (B) and without a migrant background (C); purple: females; blue: males.

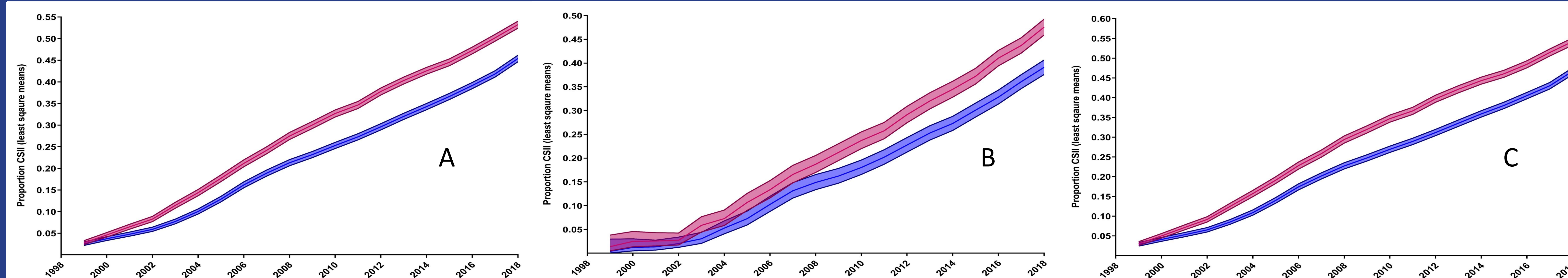


Figure 2 A-C: Least square means and 95% CI for proportions of insulin pump use over time for the whole group of boys and girls (A), for the group with (B) and without a migrant background (C); blue: males, purple: females;

Parameter		N
1st year of analysis	2009 (2004-2014)	68,662
Age (years)	12.0 (10.4-14.6)	68,662
Female/male sex (%)	46.8/53.2	68,662
Migrant background (%)	17.0	68,662
Diabetes duration (years)	1.9 (0.2-5.6)	68,662
Insulin pump use (%)	19.5	65,498
HbA1c (%)	7.73 (6.87-9.02)	67,095
Insulin dose (U/Kg/d)	0.75 (0.57-0.95)	64,534

Table 1: Characteristics of the population. Data are presented as median and lower-upper quartile or as percentage and represent the 1st year available per patient.

CONCLUSIONS

The gap in metabolic control between boys and girls with type 1 diabetes seems to close, but in adolescents without migrant background only. HbA1c improvements are accompanied by increased insulin pump use, especially in girls. Sex differences in people with type 1 and migrant background needs to be addressed.

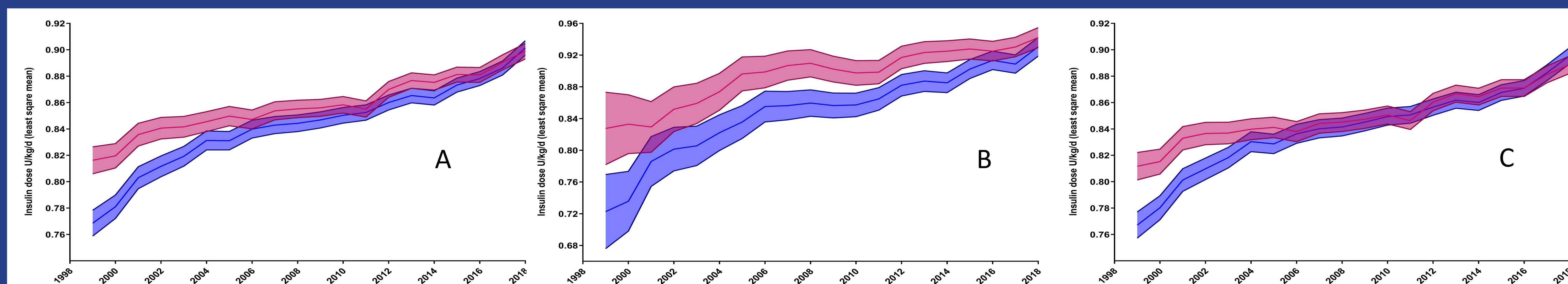


Figure 3 A-C: Least square means and 95% CI for insulin dose/kg/d over time for the whole group of boys and girls (A), for the group with (B) and without a migrant background (C); purple: females; blue: males.