



BACKGROUND

- To assess the impact of switching from real-time continuous glucose monitoring (rtCGM) with predictive alarms to intermittently-scanned CGM (isCGM) on person-reported severe hypoglycaemia episodes* (SHEs) in adults with type 1 diabetes (T1D) in Sweden

METHODS

- Retrospective study in the Swedish National Diabetes Register (NDR):
- Adults ≥ 18 years with T1D
 - Index date: reimbursement of isCGM after 1st June 2017 onwards
 - Previous use of rtCGM devices with predictive alarms
 - Outcomes measured included person-reported SHEs at 36 months before/after the index date
 - No specific exclusions

RESULTS

- Overall:** In 660 adults with T1D and prior use of rtCGM with predictive alarms, the rate of person-reported SHEs per 100 person-years decreased from 11.56 (95% CI 10.44, 12.77) to 8.90 (95% CI 7.48, 10.50) in the 36 months after switching to isCGM ($p=0.007$). The rate did not significantly change in the first two years (0-24 months). However, in the third year (+24-36 months) it dropped to 6.00 compared to 11.18 when they were using rtCGM ($p<0.001$)
- Cohort with well-optimised glycaemia:** Among 260 individuals with baseline HbA1c $<7.5\%$ (<58 mmol/mol), the rate of SHEs decreased from 15.01 (95% CI 13.05, 17.19) to 10.81 (95% CI 8.21, 13.97) events per 100 person-years ($p=0.0261$)

CONCLUSIONS

- This real-world study in Swedish adults with T1D indicates that isCGM users reported fewer SHEs after switching from rtCGM systems
- Reductions in person-reported SHEs were mainly seen in the subgroup of adults with HbA1c $<7.5\%$ (<58 mmol/mol), which is not unexpected, as the likelihood of low-glucose events is greatest for people with T1D managing to lower glycaemic targets
- This indicates that user experience and behaviour following a switch to isCGM was a key factor in reducing SHEs

FIGURE 1. Change in person-reported severe hypoglycaemia events for adult isCGM users with T1D and prior use of rtCGM systems with predictive alarms (n=660)

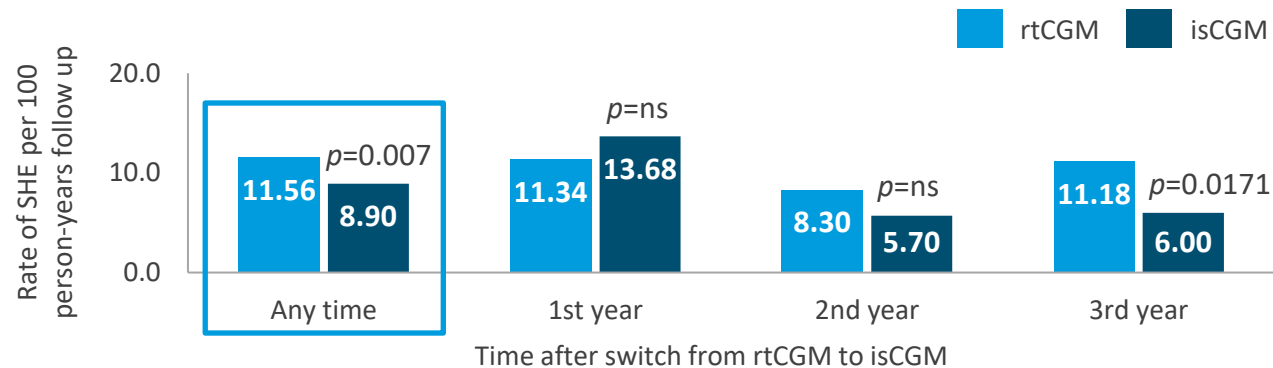
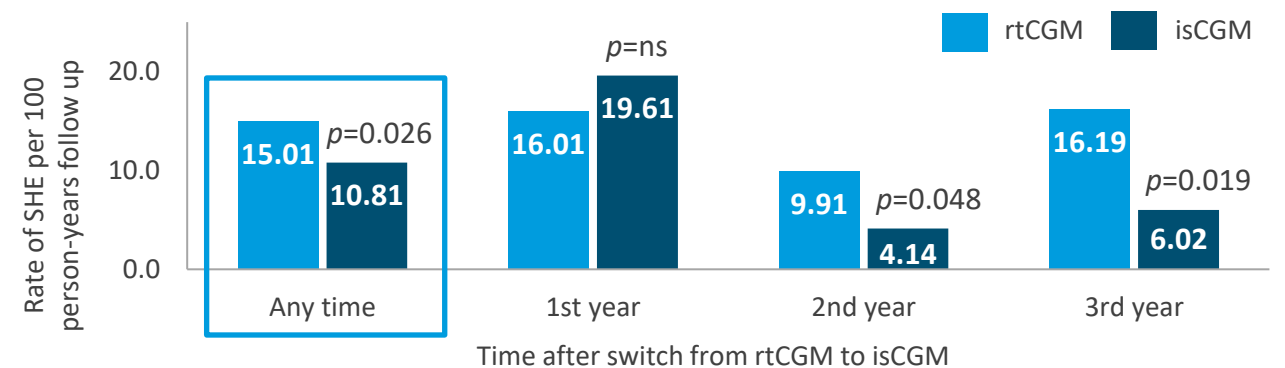


FIGURE 2. Change in person-reported severe hypoglycemia events for adult isCGM users with T1D and prior use of rtCGM systems with predictive alarms, with well-optimised glycaemia; HbA1c $<7.5\%$ (<58 mmol/mol) (n=260)



STRENGTHS OF ANALYSIS

- Large dataset with $>90\%$ coverage
- Selection bias is unlikely, but the group may have been chosen for reasons making them less suitable for rtCGM, so we cannot rule out this risk.

LIMITATIONS OF ANALYSIS

- No control group
- Reasons for discontinuing rtCGM unknown
- Registration of FreeStyle Libre system may indicate user received device training or specific diabetes education during initiation that may impact self-care and glycaemic control
- Relying on self-reported SHEs introduces recall bias and lack of objective time-below-range glucose metrics

REFERENCES

*Hypoglycaemic event data based on NDR records, as reported by patients in their annual visit

DECLARATION OF INTEREST

- This study was funded by Abbott
- FLG and CC are Abbott employees and stockholders