Comparing real-time (RT-CGM) and intermittently scanned continuous glucose monitoring (IS-CGM)* in adults with type 1 diabetes (ALERTT1): a 6-month, prospective, multicenter, randomised controlled trial†

Margaretha M Visser, Sara Charleer, Steffen Fieuws, et al.

Published Online June 2, 2021 https://doi.org/10.1016/S0140-6736(21)00789-3

Background

People with type 1 diabetes (T1D) can continuously monitor their glucose levels on demand with IS-CGM, or in real time with RT-CGM.

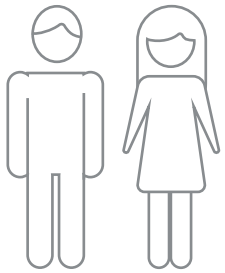
However, it is unclear whether switching from IS-CGM to RT-CGM with alert functionality offers additional benefits.

Objective

Evaluate if use of switching from IS-CGM to RT-CGM with alert functionality improves glycaemic outcomes and quality of life in adults with T1D.

Methods

Participants Eligibility



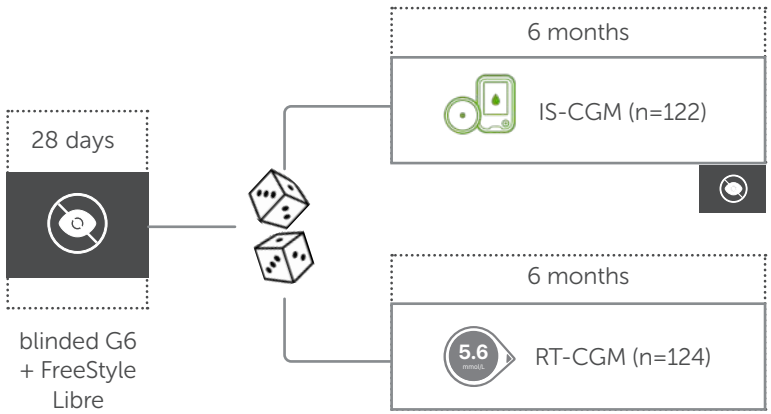
246

Participants

- Adults ≥18 years
- Participants with a diagnosis of T1D ≥6 mo
- Using FreeStyle Libre IS-CGM system ≥6 mo
- Participants are on intensified insulin therapy/ insulin pump therapy
- A1C ≤ 10%
- The participant is willing to wear the glucose monitoring device >80% of the time
- The participant is willing to download glucose monitoring data at regular intervals

Methods

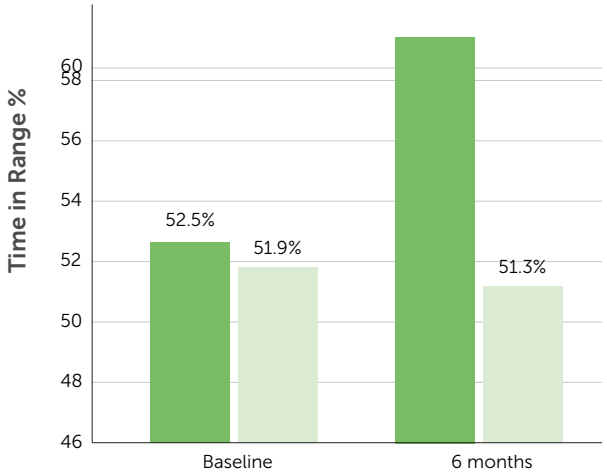
Multicenter, double arm, open label, parallel group, randomized clinical trial.



Results

Time in Range

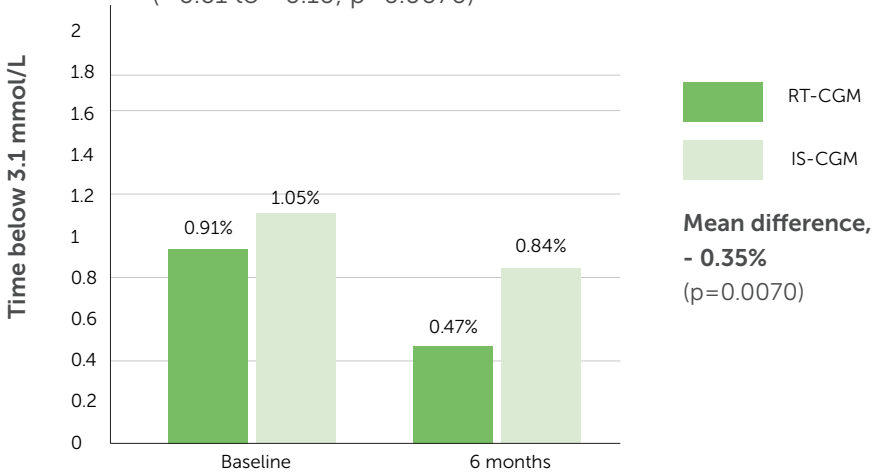
Difference in **Time in Range** (3.9-10 mmol/L) after 6 months between the control and intervention group.



Mean difference: 6.85% (on average 1 hr 39 min per day more in range when using RT-CGM) p<0.0001

Hypoglycaemia

After switching to RT-CGM, **time <3.1 mmol/L** almost halved, resulting at month 6 in a mean difference of −0.35% (−0.61 to −0.10; p=0.0070)



Mean difference, - 0.35% (p=0.0070)

A1C

A1C decreased in RT-CGM group compared to IS-CGM and this difference persisted up to 6 months.

-0.36% Mean difference at 6 months in A1C [95% CI, −0.48 to −0.24]; p<0.0001

Key takeaways

5.4 mmol/L

RT-CGM was superior to IS-CGM in allowing patients to achieve improved TIR‡, A1C, and less time in hypoglycaemia.

A1C

48% patients on RT-CGM reached an A1C <7% without severe hypoglycaemia.

Results show that the **participants had less fear of hypoglycaemia with RT-CGM** than IS-CGM use. Mean difference of -2.62% (p<0.0071).

For more information on Dexcom Continuous Glucose Monitoring systems, please contact us on **1300 851 056** or at **diabetes@amsl.com.au**

amsldiabetes.com.au

amsl diabetes

Dexcom is only indicated for use in people with type 1 diabetes over 2 years old and is not indicated for use in pregnancy or patients on dialysis treatment *IS-CGM used in this trial was FreeStyle Libre 14 day system. †This clinical summary of the published article is interpreted by Dexcom ‡ Recommendations from the International Consensus on Time in Range, 2019 recommend individualized glycemic targets for high risk and/or older adults with a focus on reducing the percentage of time spent less than 3.9 mmol/L and preventing excessive hyperglycemia.1. Comparing real-time and intermittently scanned continuous glucose monitoring in adults with type 1 diabetes (ALERTT1): a 6-month, prospective, multicentre, randomised controlled trial Visser, Margaretha M et al. The Lancet, Volume 397, Issue 10291, 2275 - 2283. AMSL is a subsidiary of Dexcom. ARTG 169241. PR-100-538 June 2022