

Continuous Glucose Monitoring System use in Insulin Treated Patients Undergoing Dialysis

ISRCTN Plain English Summary Report

Study Title

Continuous Glucose Monitoring System Use in Insulin Treated Patients Undergoing Dialysis.

Background & Rationale

Patients with diabetes undergoing haemodialysis can experience significant glycaemic variability, and accurate glucose monitoring in this population is challenging. Conventional capillary blood glucose monitoring provides limited insight into glucose trends, while the accuracy of continuous glucose monitoring (CGM) systems in this setting remains uncertain. This pilot study aimed to evaluate whether CGM systems provide accurate glucose measurements in patients receiving haemodialysis.

Study Aim

The primary objective of the study was to evaluate the FreeStyle Libre Flash Glucose Monitoring System (FreeStyle Libre) and the Dexcom G6 Continuous Glucose Monitoring System (Dexcom G6) in patients with diabetes undergoing haemodialysis.

Study Design

This was a prospective, single-centre, single-arm pilot study. Participants wore CGM sensors for up to 10 days.

Participants

A total of 13 participants with diabetes undergoing haemodialysis were enrolled. The first participant was enrolled on 17 November 2020, and the final study visit was completed on 24 December 2020.

Study Procedures

Participants concurrently wore both a FreeStyle Libre and a Dexcom G6 sensor for up to 10 days. They were asked to perform at least four capillary fingerprick glucose measurements per day. Accuracy of each CGM system was assessed by calculating the percentage of results in Zones A and B of the Consensus Error Grid relative to reference blood glucose measurements.

Outcome Measures

The percentage of results in Zones A and B of the Consensus Error Grid was;

- **FreeStyle Libre:** 100%
- **Dexcom G6:** 99.5%

Conclusion

Both CGM systems demonstrated acceptable performance in patients undergoing haemodialysis. These findings suggest that CGM may be a useful tool for glucose monitoring in this population. Further studies with larger sample sizes are warranted to confirm these findings and assess clinical impact.