Persistent hypoglycaemia is common in the newborn, due to prematurity or congenital hyperinsulinism (CHI) and is associated with the risk of poor neurodevelopmental outcome. Adequate monitoring is critical in prevention but is dependent on frequent blood sampling.

We aimed to introduce real-time CGM to provide insights into patterns of dysglycaemia and to support the management of infants with persistent hypoglycemia.

This is a single centre retrospective study of real-time CGM use over a 4-year period in babies with persistent hypoglycemia. We had used the mean absolute relative difference (MARD), Bland-Altman analysis and Clarke Error grid plots to explore the impact of CGM.

The CGM data highlighted marked fluctuations in glucose levels in babies with CHI, in contrast to preterm babies, and therefore the challenges of preventing hypoglycaemia in these babies when using intermittent blood glucose levels alone. The low sensitivity despite high specificity of CGM for hypoglycaemia means CGM results in high numbers of false positives but could help to reduce the frequency of blood sampling during normoglycaemia.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the families who are reported in this paper and thank the clinical team on the Neonatal Unit, the National Institute for Health Research Cambridge Biomedical Research Centre and Addenbrookes Charitable Trust.

CONTACT INFORMATION

Dr Myat Su Win
Addenbrooke’s Hospital, Cambridge Biomedical Campus, Hills Road, Cambridge, CB2 0QQ
m.win@nhs.net