

Continuous glucose monitoring in diabetic pregnant women lowers risk of complications

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Continuous glucose monitoring as part of antenatal care for women with diabetes improves maternal blood glucose control and lowers birth weight and risk of macrosomia (excessive birth weight in babies), according to a study published on bmj.com today.

During pregnancy it is important that women with diabetes keep their blood glucose under control. If not, there may be an increase in the amount of glucose reaching the baby, which makes the baby grow faster than normal, and may cause difficulties at birth as well as an increased longer term risk of insulin resistance, obesity and type 2 diabetes.

Evidence suggests that measuring glucose more often improves outcomes, but the optimum frequency of blood glucose testing is not known.

Dr Helen Murphy and colleagues examined whether continuous glucose monitoring during pregnancy can improve maternal glucose control and reduce birth weight and risk of macrosomia in babies of mothers with diabetes.

They recruited 71 pregnant women with type 1 and type 2 diabetes from antenatal clinics in the UK.

The women were randomly assigned to standard antenatal care (intermittent self monitoring of glucose levels using the finger prick technique) or intermittent monitoring plus continuous glucose

monitoring (using glucose values from subcutaneous tissues measured electronically every 10 seconds, giving up to 288 measurements a day).

Continuous glucose monitoring was used as a tool to aid patient education and optimise lifestyle and therapeutic management of blood glucose levels.

The researchers found that women in the continuous glucose monitoring group had lower mean levels of HbA1c (a measure of the amount of glucose attached to red blood cells) from 32 to 36 weeks' gestation, and improved blood glucose control during the third trimester, compared to women receiving standard antenatal care.

Babies of mothers who had continuous monitoring also had lower birth weight and reduced risk of macrosomia.

But because macrosomia rates were still 3.5 times higher in women using continuous glucose monitoring than in the general maternity population it shows that standard interventions including diet and insulin have failed to reduce rates of macrosomia enough, say the authors. This emphasises the need for novel educational and technological interventions especially in women with long duration type 1 diabetes, they add.

This trial provides evidence of the lasting benefits of continuous monitoring for the babies of mothers with diabetes and is a potentially important target for public health strategies that aim to reduce the burden of obesity in childhood, say the authors.

In an accompanying editorial, Professor Mario Festin says that continuous glucose monitoring increases the consistency and accuracy of glucose measurement which is vital for the nutritional and drug management of diabetes in pregnancy.

Continuous glucose monitoring is relatively cheap compared with a clinic based monitoring system and more widespread use may make it more affordable even in developing countries, he concludes.

Source: British Medical Journal

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