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The BMJ Press Release

No clear threshold to diagnose and treat diabetes during pregnancy

There is an urgent need to find the best threshold to balance benefits and harms of treatment, say experts

A study published by **The BMJ** today finds a consistent association between higher blood glucose (sugar) levels during pregnancy and increased risk of complications around the time of birth, but there is no clear evidence of a threshold effect.

The researchers say there is now an urgent need to work out the best threshold to balance the benefits and harms of treating women with high blood glucose levels during pregnancy.

Gestational diabetes - high blood glucose (sugar) levels during pregnancy - is associated with increased risk of a range of adverse outcomes around the time of birth and can affect the longer term health of mother and infant.

Although treatment can reduce the risk of these outcomes, the optimal glucose threshold to define gestational diabetes is unknown.

So a team of researchers, based across the UK and Republic of Ireland, set out to examine the association between blood glucose levels in pregnant women without pre-existing diabetes and birth outcomes, such as whether they needed a caesarean section.

They searched for all studies that had looked at the association between pregnancy blood glucose and outcomes for the mother and her baby.

They found 23 studies involving over 200,000 women and their infants, mainly from high income countries across Asia, Australasia, Europe and North America. There was no evidence from sub-Saharan Africa and little evidence from other low and middle income countries.

Although they cannot tell us about cause and effect, meta-analyses involving observational research are useful for pulling evidence together.

When the researchers combined results from all studies there was a straight line association between glucose levels and caesarean section, induction of labour, a heavy baby, and shoulder dystocia (the baby getting stuck as their mother gives birth).

This means that, for each blood glucose increase, the risk of these problems increased by a similar amount - and there was no clear evidence of a threshold effect.

This straight line pattern was similar when the team looked at studies separately to explore the potential impact of study quality, type of glucose exposure and different geographical regions.

These results show that there is no obvious level to diagnose gestational diabetes, say the authors.

“What we now need to work out is what the best threshold is for balancing the benefit of preventing pregnancy and birth problems by detecting and treating women with high blood glucose levels against the costs of detection and treatment and the problems of over treating some women and causing problems,” they conclude.

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Note to Editors

Research: Hyperglycaemia and risk of adverse perinatal outcomes: systematic review and meta-analysis

<http://www.bmj.com/content/354/bmj.i4694>

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