

Interventions before and between pregnancies better for reducing gestational diabetes

As part of the Journal's coverage of the 56th Annual Meeting of the European Association for the Study of Diabetes, Pam Brown focuses on "Prevention of GDM: pitfalls and hope", a presentation by Professor Fidelma Dunne (National University of Ireland Galway) from the Sweet Pregnancy symposium. Gestational diabetes (GDM), which is increasing in prevalence, can result in adverse pregnancy outcomes and long-term health risks for both mother and child. The article summarises the evidence on prevention of GDM and suggests positive measures that can be adopted in primary care.

- Gestational diabetes mellitus (GDM) continues to increase. One in 6 pregnancies globally is affected by hyperglycaemia, with 84% of these being GDM (IDF, 2017).
- Type 2 diabetes can be prevented, so it should be possible to prevent or reduce GDM. This is important as GDM can result in adverse pregnancy outcomes, neonatal problems and long-term health issues for mother and offspring.
- Pregnancy is an insulin-resistant state, but this is worsened in obesity. GDM is heterogeneous with regard to the time of onset and the underlying pathophysiology, and insulin secretion defects have also been identified in GDM.
- A Cochrane Review summarised the evidence base on interventions to prevent women from developing GDM (Griffith et al, 2020). The studies used different diagnostic thresholds and times of intervention, but the evidence quality was low to moderate.
- Some evidence for combined diet and exercise in reducing gestational weight gain, but not GDM.
- Supplementation with myo-inositol or vitamin D (if deficient) and metformin during pregnancy show limited evidence for reduction in GDM, but the studies are difficult to interpret as the populations were so different, uptake varied, and geography and ethnicity differed.
- Combinations of lifestyle, supplementation and medication or interventions **prior to and between** pregnancies should be considered. Weight loss, however achieved, is likely to be beneficial.

What else is new?

- A recent meta-analysis suggests an almost 10-fold increased risk of progression to type 2

diabetes in women with a history of GDM, higher than previously identified (Vounzoulaki et al, 2020). Postnatal screening and annual screening thereafter are important.

- HAPO Follow-Up Study (HAPO FUS) confirms higher childhood obesity and adiposity at ages 10–14 years associated with increasing maternal glucose levels during pregnancy.

What might we do differently?

- Ensure that we code those with gestational diabetes, so they can be identified by searches.
- Optimise postnatal testing (fasting blood glucose at 6–13 weeks postnatally or HbA_{1c} at >13 weeks), with annual screening thereafter.
- If postnatal fasting plasma glucose is 6–6.9 mmol/L or HbA_{1c} is 39–47 mmol/mol, manage as per non-diabetic hyperglycaemia (e.g. refer to NHS Diabetes Prevention Programme or signpost to lifestyle resources).
- Encourage lifestyle change and weight loss before, between and after pregnancy, and encourage breastfeeding.
- Measure and monitor high-risk children from GDM pregnancies and ensure early interventions if overweight or obesity develop.

References and further reading

- Griffith RJ, Alsweiler J, Moore AE et al (2020) Interventions to prevent women from developing gestational diabetes mellitus: an overview of Cochrane Reviews. *Cochrane Database Syst Rev* 6: CD012394
- International Diabetes Federation (2017) *IDF Diabetes Atlas* (8th edition). IDF, Brussels, Belgium
- Saravanan P; Diabetes in Pregnancy Working Group; Maternal Medicine Clinical Study Group; Royal College of Obstetricians and Gynaecologists, UK (2020) Gestational diabetes: opportunities for improving maternal and child health. *Lancet Diabetes Endocrinol* 8: 793–800
- Vounzoulaki E, Khunti K, Abner SC et al (2020) Progression to type 2 diabetes in women with a known history of gestational diabetes: systematic review and meta-analysis. *BMJ* 369: m1361



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