RESPONSE TO COMMENT ON HUGHES ET AL.

An Early Pregnancy HbA_{1c} ≥5.9% (41 mmol/mol) Is Optimal for Detecting Diabetes and Identifies Women at Increased Risk of Adverse Pregnancy Outcomes. Diabetes Care 2014;37:2953–2959

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Diabetes Care 2015;38:e93 | DOI: 10.2337/dc15-0401

We appreciate the opportunity to respond to the comments made by Anderson et al. (1) on our recent article (2). We agree, as highlighted under our study limitations, that the low participation rate in the oral glucose tolerance test (OGTT) could affect the validity of the HbA_{1c} sensitivity and specificity calculations. As women with lower HbA_{1c} (particularly <5.6% [38 mmol/mol]) were least likely to consent to an early OGTT, it is possible that the optimal HbA_{1c} threshold for identifying women with undiagnosed preexisting diabetes (not gestational diabetes mellitus [GDM]) is in fact lower than 5.9% (41 mmol/mol) and we invite others to replicate our study.

The pregnancy outcome data, however, are available for all women who delivered at our center. The finding that a booking HbA_{1c} within the prediabetes range (5.9–6.4%) was associated with adverse pregnancy outcomes in the absence of a subsequent diagnosis of GDM by OGTT criteria is significant, as current guidelines (2,3) do not recommend early intervention unless the HbA_{1c} is ≥6.5% (48 mmol/mol). In addition, as mentioned in our discussion, in a separate cohort of New Zealand women, Rowan et al. (4) reported that those with a nondiagnostic OGTT but an HbA_{1c} ≥5.9% have significant hyperglycemia with >90% referred before 24 weeks' gestation requiring pharmacotherapy. It is therefore possible that an HbA_{1c} measure is clinically more relevant than an OGTT in early pregnancy.

Women recruited for our study were from a primary care setting and invitations for an OGTT were by both telephone and mail. Women were approached in the same manner irrespective of their social or ethnic backgrounds. The ethnic split of women attending the early OGTT was similar to that of the women attending routine GDM screening in later pregnancy, with Maori women underrepresented despite being a high-risk group for diabetes. Interestingly, a greater proportion of Maori women attended for an early pregnancy HbA_{1c}. HbA_{1c} measurement may be a more acceptable screening test for preexisting diabetes, with a greater uptake than an OGTT in early pregnancy for certain ethnic populations.

We excluded the random plasma glucose (RPG) data from this article, as our goal was to present the HbA_{1c} data as clearly as possible. RPG and HbA_{1c} measurements did not correlate well; these data and the pregnancy outcome data related to RPG measurements will be published separately.

We acknowledge that iron deficiency, which is particularly prevalent in later pregnancy, can cause a slight upwards shift in HbA_{1c} measurements equating to about 0.1% (1–2 mmol/mol) (5). In our study, we measured HbA_{1c} in early pregnancy and ferritin was not measured at that time.

Importantly, because a diagnosis of diabetes or prediabetes has significant implications, we do not advocate labeling women based on an early pregnancy HbA_{1c} measurement and believe that glycemic status should be reassessed postpartum. However, in our population, HbA_{1c} was a useful marker to identify women with a higher risk of adverse pregnancy outcomes who may benefit from early intervention.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

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