

Are IADPSG defined GDM women with fasting glucose levels of 5.1 to 5.4mmol/L really at higher risk of adverse pregnancy outcomes?

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Background: The International Association of Diabetes and Pregnancy Study Groups' (IADPSG) diagnostic criteria for GDM, have a lower fasting plasma glucose (FPG) threshold relative to ADIPS 1998 criteria, (5.5vs5.1mmol/L) and a higher 2 hour post glucose load threshold (8.0vs8.5mmol/L). Some continue to use ADIPS 1998 criteria due to predicted increases in workload[1] and a lack of randomised controlled trial (RCT) evidence to support IADPSG criteria.

Aim: To review whether women with FPG of 5.1 to 5.4mmol/L and normal 2 hr post glucose load are at higher risk of adverse pregnancy outcomes

Methods: We reviewed data from the Bankstown-Lidcombe Hospital diabetes, obstetric and pathology databases, between 2011 and 2015. We compared: Group A; with FPG between 5.1 to 5.4mmol/L and Group B; NGT women excluding Group A . Group A would be re-classified as GDM according to new IADPSG criteria. However both groups were defined as normal glucose tolerance (NGT) according to ADIPS 1998 criteria[2], neither receiving treatment for GDM.

Antenatal maternal characteristics and perinatal outcomes, namely incidence of pre-eclampsia, prematurity (<37 weeks), induction of labour, caesarean section, low birth weight(<2500g) and macrosomia(>4000g), Apgars and need for neonatal ICU(NICU) admission were compared between groups.

Results: There were 245 women in Group A and 2001 women in Group B. At baseline Group A women had a higher pre-pregnancy BMI(27.9±5.8 vs 25.4±6.0kg/m²,p<0.0001), higher pre-pregnancy to booking visit weight gain(6.6±5.5 vs 5.8 ± 5.4kg,p<0.05) and greater proportion of Caucasian women(50.2vs 48.5%, p<0.01).

Significant differences in outcomes are summarised in Table 1

Table 1. Outcomes				
	Group A (n=245) mean±SD or cases / total (%)	Group B (n=2001) mean±SD or cases / total (%)	Odds Ratio	p-value
Birth Weight (g)	3499±582	3377±516		<0.001
Macrosomia >4000g (%)	43/245 (17.6)	200/2001 (10.0)	1.9 (1.3 - 2.7)	<0.001

Conclusion

Lowering FPG for diagnosis of GDM according to IADPSG criteria is justified, as women with FPG 5.1 to 5.4mmol/L appear to have babies of higher birthweight and the macrosomia rate is higher. It remains to be seen, however, whether treating these women will reduce the incidence of adverse outcomes.

References

1. Flack, J.R., et al., *Recommended changes to diagnostic criteria for gestational diabetes: impact on workload*. Australian & New Zealand Journal of Obstetrics & Gynaecology, 2010. **50**(5): p. 439-43.
2. Hoffman, L., et al., *Gestational diabetes mellitus-management guidelines*. The Australasian Diabetes in Pregnancy Society. Med J Aust, 1998. **169**(2): p. 93-7.

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