

## **A comparison of pregnancy outcomes in treated GDM women compared to those without GDM**

**Tang Wong<sup>1,2,3</sup>, Glynis P Ross<sup>1,3</sup>, Ngai W Cheung<sup>3,4</sup>, Robyn Barnes<sup>1,5</sup> and Jeff R Flack<sup>1,2,6</sup>.**

**<sup>1</sup>Diabetes Centre, Bankstown-Lidcombe Hospital, Bankstown NSW**

**<sup>2</sup>University of New South Wales**

**<sup>3</sup>University of Sydney**

**<sup>4</sup>Department of Endocrinology, Westmead Hospital, Westmead NSW**

**<sup>5</sup>University of Newcastle**

**<sup>6</sup>Western Sydney University**

**Background:** The Hyperglycemia and Adverse Pregnancy Outcomes study (HAPO) demonstrated continuous relationships between maternal glycaemia and adverse outcomes[1]. Randomised controlled studies have demonstrated that treatment of gestational diabetes (GDM) reduces this risk.

**Aim:** To compare outcomes of pregnant women treated for GDM with those of normal glucose tolerant (NGT) women.

### **Methods:**

We reviewed data from the Bankstown-Lidcombe Hospital diabetes, perinatal and pathology databases between 2011-2015. Women were classified as having GDM or normal glucose tolerance (NGT) according to ADIPS 1998 criteria[2].

Women diagnosed with GDM were educated on blood glucose monitoring, medical nutrition therapy and exercise. Insulin was commenced if glycaemic targets were not met. Metformin was not used.

Antenatal maternal characteristics and perinatal outcomes, including gestational weight gain (GWG), incidence of pre-eclampsia, prematurity (<37 weeks), induction of labour, caesarean section, low birth weight(LBW<2500g ) and macrosomia(>4000g), Apgars and neonatal ICU(NICU) admission were compared between GDM and NGT women. GWG was calculated as self reported pre-pregnancy weight subtracted from last maternal weight measured after 36 weeks gestation. Independent sample t-tests and chi-square analyses were used to assess for statistical significance.

### **Results**

There were 1503 GDM women and 9454 NGT women. At baseline, GDM women were older, had higher pre-pregnancy BMI, increased incidence of chronic hypertension, greater number of prior pregnancies >20 weeks, higher fasting and 2 hour glucose levels on oGTT. There was a greater proportion of non-caucasian ethnicities amongst GDM women.

Treatment of women with GDM reduced GWG and mean birthweight. There was a similar risk of low birthweight and macrosomia. Outcomes of women with GDM compared to those with NGT are summarised in table 1.

<b>Table 1 Outcomes</b>				
	GDM (n=1503) mean±SD or case/ total(%)	Non-GDM (n=9454) mean±SD or cases/ total	Odds Ratio	p-value
GWG (kg)	12.4±6.3	15.1±6.9	N/A	<0.0001
Induction due to Hypertensive Disease	8/591(1.5)	99/2138(4.6)	0.3 (0.1-0.6)	<0.001
Gestational Age at Delivery (wks)	38.6±1.3	39.0±2.2		<0.0001
Prematurity <37 weeks (%)	211/1503(14.0)	946/9454(10.0)	1.5 (1.3 - 1.7)	<0.0001
Induction of Labour (%)	572/1503(38.1)	2137/9454(22.6)	2.1 (1.9 - 2.4)	<0.0001
Caesarean Section (%)	213/895(23.8)	905/5419(16.7)	1.6 (1.3 - 1.8)	<0.0001
Birth Weight (g)	3332±504	3364±521		<0.05
Low Birth Weight <2500g (%)	68/1498(4.5)	376/9416(4.0)	1.1 (0.9-1.5)	NS
Macrosomia >4000g (%)	134/1503(8.9)	1044/9454(9.8)	0.9 (0.7 - 1.1)	NS
Apgars at 1 minute	8.5±1.3	8.6±1.3	N/A	NS
Apgars at 5 minutes	8.9±0.6	8.9±0.8	N/A	NS
NICU admission (%)	219/1503(14.6)	1044/9454(11.0)	1.4 (1.2 - 1.6)	<0.0001

## Conclusion

Treatment of GDM was effective in reducing rates of pre-eclampsia, macrosomia and low birthweight to the background rates observed in women with NGT, but obstetric intervention was more common.

## References

1. The HAPO Colaborative, *Hyperglycemia and adverse pregnancy outcomes*. New England Journal of Medicine, 2008. **358**(19): p. 1991-2002.
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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