

ETHNIC DIFFERENCES IN PREGNANCY OUTCOMES ACCORDING TO THE AMOUNT OF GESTATIONAL WEIGHT GAIN IN WOMEN WITH GESTATIONAL DIABETES MELLITUS.

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Background: We published data indicating gestational weight gain(GWG) is a predictor of large and small for gestational age birthweight(LGA, SGA) in women with gestational diabetes mellitus(GDM)¹. The 2009 Institute of Medicine(IOM) guidelines stated ethnicity did not modify the association between GWG and birth outcomes².

Aim: To compare the incidence of pregnancy outcomes in GDM women from different ethnic backgrounds according to IOM(2009) weight gain recommendations.

Methods: We compared de-identified prospectively collected data(1993-2013), from women diagnosed by ADIPS(1998) criteria³, in those with complete data including; ethnicity, pre-pregnancy BMI (based on self-reported weight), last clinic weight recorded <4 weeks pre-delivery, treatment modality and birth outcomes. We assessed GWG compared to IOM recommendations as <IOM, =IOM or >IOM across 4 BMI Categories: Underweight (BMI<18.5kg/m²); Healthy Weight (BMI ≥18.5≤24.9kg/m²); Overweight (BMI ≥25≤29.9kg/m²); Obese (BMI ≥30kg/m²). We thence assessed 5 outcomes: insulin use, caesarean delivery, SGA, LGA, plus 6-8 week post-partum oGTT data (where available), in the four largest ethnic groups (94.9% of our cohort): (European[Eth1], Middle Eastern[Eth2], South-East Asian[Eth3] and South Asian[Eth4]). Birthweights were categorized SGA(<10th percentile) and LGA(>90th percentile) using the website www.gestation.net⁴. Chi-squared analyses were undertaken; statistical significance p<0.05.

Results: There were 3017 records: 122 Underweight(4.0%), 1423 Healthy Weight(47.2%), 803 Overweight(26.6%) and 669 Obese(22.2%) in the 4 ethnic categories: Eth[1](n=705); Eth[2](n=858); Eth[3](n=1101); Eth[4](n=353), with post-partum oGTT data available for 1820(60.3%). There were no significant differences identified in any outcome in Underweight women, or in insulin therapy between ethnicities. Table1 shows the significant differences observed compared to Eth[1].

	Caesarean Delivery	SGA	LGA	Postpartum Abnormal oGTT
Health Weight - <IOM GWG		Eth[2] Less *		Eth[3] More *
Health Weight - =IOM GWG	Eth[2] Less *		Eth[3] Less *	Eth[4] More *
Health Weight - >IOM GWG	Eth[4] More *		Eth[3] Less *	
Overweight - <IOM GWG				Eth[3] More * Eth[4] More *
Overweight - =IOM GWG		Eth[2] Less *		Eth[3] More * Eth[4] More **
Overweight - >IOM GWG	Eth[4] More *			
Obese - <IOM GWG			Eth[2] More *	
Compared to Eth[1] * p<0.05 ** p<0.01 IOM: Institute of Medicine GWG: Gestational Weight Gain				
European[Eth1] Middle Eastern[Eth2] South-East Asian[Eth3] South Asian[Eth4]				

Conclusions: Significant differences were found in the rates of pregnancy outcomes by ethnicity in women with GDM whose GWG was excessive, recommended or inadequate within three of the four BMI categories. Although further research is needed, the risk of adverse pregnancy outcomes associated with maternal weight gain appears to differ significantly by ethnicity.

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References:

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