

Impact of Tobacco Abuse on Gestational Weight Gain and Pregnancy Outcome in the Obese Gravida

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Objective: To evaluate impact of tobacco abuse on gestational weight gain and pregnancy outcome.

Study Design: Retrospective cohort study of obese pregnant women. Outcomes were tracked and evaluated by smoking status. Univariate and multivariate analysis were used where appropriate.

Results: Of 320 obese gravidas, 77 (24.1%) were smokers and 243 (75.9%) were non-smokers. Hispanic women smoked less ($p=0.004$). Baseline characteristics with respect to gravidity, parity, intake BMI, DM, CHTN, and OSA were similar (Table 1). Smokers and non-smokers demonstrated similar rates of deviation from 2009 IOM guidelines for gestational weight gain (Table 2). Smoking did not protect against preeclampsia or significantly impact birth weight. However, smoking increased risk for cesarean delivery ($p<0.001$) and recreational drug use ($p<0.001$).

Conclusion: While smoking did not impact gestational weight gain, birth weight, or preeclampsia, obese smokers were more likely to abuse additional substances and had increased risk for cesarean delivery.

Table 1: Maternal Demographics and Comorbidities

	Smokers (77)	Non-Smokers (243)	
Race			$p=0.004$
Caucasian	34 (44.2%)	99 (40.7%)	
African American	39 (50.6%)	96 (39.5%)	
Hispanic	3 (3.9%)	48 (19.8%)	
Gravidity (median, IQ)	3 (2,4)	3 (2,4)	$p=0.242$
Parity	2 (0,3)	1 (0,2)	$p=0.348$
Intake BMI (mean,SD)	40.8 +/- 0.8	41.1 +/- 0.5	$p=0.781$
Preexisting Diabetes (DM)	9 (11.7%)	38 (15.6%)	$p=0.463$
Chronic Hypertension (CHTN)	18 (23.4%)	53 (21.8%)	$p=0.755$
Obstructive Sleep Apnea (OSA)	3 (3.9%)	5 (2.1%)	$p=0.405$
Non-Tobacco Substance Abuse	15 (19.5%)	12 (4.9%)	$p<0.001$, OR 4.66 (95% CI 2.16-10.70)

Marijuana	8 (10.4%)	6 (2.5%)	
Opiates	5 (6.5%)	1 (0.4%)	
Alcohol	4 (5.2%)	4 (1.6%)	
Cocaine	0	1 (0.4%)	
Multiple substances	2 (2.6%)	0	

Table 2: Pregnancy Outcomes

	Smokers (77)	Non-Smokers (243)	
Gestational Weight Gain(lbs) (mean,SD)	19.4 +/-2.1	18.8 +/-1.1	p=0.7901
Excess weight gain	34 (44.2%)	109 (44.9%)	p=0.917
Inadequate weight gain	23 (29.9%)	75 (30.9%)	p=0.877
Gestational Diabetes	10 (13.0%)	40 (16.5%)	p=0.589
Gestational Hypertension	5 (6.5%)	14 (5.8%)	p=0.786
Preeclampsia	10 (13.0%)	24 (9.9%)	p=0.524
Gestational Age at Delivery (wks) (mean,SD)	37.9 +/- 0.4	37.8 +/- 0.2	p=0.918
Cesarean Delivery	36 (60%)	109 (51.2%)	p<0.001, OR 0.22 (95% CI 0.14-0.34)
Indicated Delivery	24 (31.2%)	85 (35.0%)	p=0.342
Infant Birth weight (g) (mean,SD)	3026 +/- 100.5	3233 +/- 65.3	p=0.087