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BMI, Gestational Weight Gain and Angiogenic Biomarker Profiles for Preeclampsia Risk

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Objective: In May 2009, after considering short and long-term maternal/child outcomes, the Institute of Medicine (IOM) revised recommendations for gestational weight gain (GWG). However, preeclampsia diagnosis was dismissed as an outcome for GWG adherence. We hypothesized that weight gain in under-/normal-weight pregnancies could be adjusted by outpatient clinic weight gain targets to achieve IOM recommendations. Our objective was to test the association of GWG adherence and hypertensive disease of pregnancy.

Background

In May 2009, after considering short and long-term maternal/child outcomes, the Institute of Medicine (IOM) revised recommendations for gestational weight gain (GWG). However, preeclampsia diagnosis was dismissed as an outcome for GWG adherence. We hypothesized that weight gain in under-/normal-weight pregnancies could be adjusted by outpatient clinic weight gain targets to achieve IOM recommendations.

Materials & Methods

Analytic sample included 82 subjects (342 specimens). Subjects included in analyses 82 women (342 specimens) without multiples or missing outcomes. Pregestational DM was defined as fasting blood glucose at least 126 mg/dl, BMI ≥ 30 kg/m² as obesity, and either ≥ 27 or ≥ 30 BMI at delivery as overweight and obese, respectively. Under-/normal weight were defined as BMI ≤ 19.8 and > 19.8-25 kg/m², respectively. Adherence was defined by pre-pregnancy weight; thus preterm and term deliveries included. Mean sFlt1 lower in all windows in OG compared to U-AG (Figure 4) and in OW-OB compared to U-N (Figure 1). Mean sFlt1 lower in all windows in OW-OB compared to U-N. p=0.03. Mean (sFlt1+sEng)/PlGF lower in OG compared to U-AG at 31-36wks; however no windows with significant comparisons.

Results:

• Mean sFlt1 lower in all windows in OW-OB compared to U-N (Figure 1)
• Mean sFlt1 lower in all windows in OW-OB compared to U-N (Figure 2)
• Mean (sFlt1+sEng)/PlGF lower in OG compared to U-AG at 31-36wks; however no windows with significant comparisons.

Conclusions:

Findings suggest trends that OW-OB and excessive GWG associated with angiogenic biomarker profiles consistent with higher preeclampsia risks. Exploratory study investigation for preeclampsia risk alteration.

Limitations:

• Small sample size required collapsing of BMI and GWG adherence categories.

Conclusion:

• Findings suggest trends that OW-OB and excessive GWG associated with angiogenic biomarker profiles consistent with higher preeclampsia risks.

To evaluate preeclampsia risk by angiogenic-biomarker profile by both BMI and GWG-adherence.

Objective

Pregnant subjects ≤24 weeks gestation enrolled from outpatient prenatal care at Baystate Medical Health Care between May 2004 and January 2006.

• Study enrolled 92 women, however preeclampsia was dismissed due to insufficient evidence. Our objective was to test the association of GWG adherence and hypertensive disease of pregnancy.

• Numerous studies have revealed adipose tissue's ability to stimulate angiogenesis.

• Significant associations were shown between GWG and the following angiogenic (sFlt1, PlGF) and non-angiogenic (sEng) biomarkers for preeclampsia risk.

• Since change in recommendations, epidemiologic studies have since been published that support an association between GWG and hypertensive disease of pregnancy.

Materials & Methods

• Objective:

• In May 2009, after considering short and long-term maternal/child outcomes, the Institute of Medicine (IOM) revised recommendations for gestational weight gain (GWG). However, preeclampsia was dismissed due to insufficient evidence. Our objective was to test the association of GWG adherence and hypertensive disease of pregnancy.

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