Background

• In May 2009, after considering short- and long-term morbid metabolic outcomes, the Institute of Medicine (IOM) revised recommendations for gestational weight gain (GWG), however pre-gestation weight gain was disregarded due to insufficient evidence.

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

J Obstet Gynecol 2009

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

Cardiovasc Res 2000

Objective

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

Hypothesis

We hypothesized that overweight/obese (OW-OB) women and over-gainers (OG) would have altered angiogenic profiles as compared to underweight/normal-weight (U-N) and Under-gainers (UG), respectively.

Materials & Methods

• Pregnant subjects >24 weeks gestation enrolled from outpatient prenatal clinics at Memorial Health Care between May 2004 and January 2006.

• Each subject had >31 gestational weeks.

• Mean ratio [(sFlt1+sEng):PlGF] trended higher in OG compared to U-AG.

• Subjects recruited 127 from 94 women at high-risk clinics at UMass Memorial Health Care between 5/04-1/06, serial serum specimens collected from 94 women at high-risk clinics.

• Mean sFlt1 lower in all windows in OW-OB compared to U-N - significant only at 22-26wks (406.3(95%CI 438.1-584.9) vs 745.5(95%CI 548.5-957.1) p=0.01)

• Findings suggest trends that OW-OB BMI and excessive GWG associated with preeclampsia risk alteration.

• Exploratory study limited by small numbers. BMI and GWG as potentially modifiable factors merit further investigation for pre-eclampsia risk.

Conclusion

• Small sample size required collapsing of BMI and GWG-adherence categories, thus unable to test association within each BMI category.

• Secondary analyses not powered for this exploratory analysis.

• Only had total GWG at end of pregnancy.

• Findings suggest trends that OW-OB BMI and excessive GWG associated with angiogenic biomarker profiles consistent with higher pre-eclampsia risk by end of gestation.

• BMI and GWG as potentially modifiable factors merit further investigation for pre-eclampsia risk alteration.