

The Relationship of Adiponectin and Gestational Weight Gain during Different Stages of Pregnancy among Different Ethnic Groups

Jayshree Chauhan¹, Xinhua Chen, MD, MSCE¹

1. Rowan-Virtua School of Osteopathic Medicine, Department of Obstetrics & Gynecology, Stratford, New Jersey

Abstract

BACKGROUND: Gestational Weight Gain (GWG) is defined as weight gain between conception and birth. Adiponectin, a fat derived hormone, has an inverse relationship with weight gain. We investigated the relationship of maternal adiponectin concentration and GWG during different pregnancy stages among ethnic groups.

METHODS: Serum adiponectin levels were measured at entry (week 16) and trimester three (week 28) in pregnant women (n = 1634, age 22.0±5.3, pre-pregnancy BMI 25.7±6.3) which included Hispanic (47%), African American (37%) and Caucasian (16%) women. GWG was measured at week 24, 28, 32, and delivery and was divided into inadequate, adequate, and excessive according to Institute of Medicine guidelines. Multivariable analyses controlling for potential confounding variables were performed. IRB approval was obtained for this study.

RESULTS: Adiponectin levels differed among ethnic groups during early and late pregnancy. At entry, Hispanic (17.90±0.32 µg/ml) and African American (16.50±0.37 µg/ml) women had significantly lower levels compared to Caucasians (19.34±0.57 µg/ml; p<0.01 and p<0.05). Similar results were observed during trimester three. Women with inadequate GWG had lower adiponectin levels, compared to adequate GWG (at weeks 24, 28, 32 (p<0.05 for each)), but not at delivery. Lower adiponectin levels were found in women with excessive GWG; however, the difference was not statistically significant.

DISCUSSION/CONCLUSION: Our data suggests that ethnic differences in maternal adiponectin concentration may play an important role in the regulation of gestational weight gain.