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Maternal body composition measurements as a predictor of GDM**Yan Wang**

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Background & Aim: Recent years, research has found that the BC between abnormal blood glucose and normal glucose tolerance are very different, and body composition, especially waist circumference, percentage body fat waist-hip ratio, is closely related to glucose metabolism in humans. However, few reports on the relationship between BC (including muscle, body water, protein, minerals and body fat, etc.) and GDM morbidity of pregnant women who at low-risk are found. Body composition using Bioelectrical Impedance Analysis (BIA) is safe and reproducible in pregnancy. BIA uses segmental limb volume which allows for variance in pregnancy with the gravid uterus. This differs from other methods which take the maternofetal and placental unit as being a single entity. Furthermore, the aim of this study is examine which elements of body composition measurements taken before 24 weeks gestation are the strongest predictors of GDM in an at risk group of women.

Method: This was a retrospective, case-control study of 2698 pregnant women with singleton pregnancies. Women were recruited at 13-24 weeks. Maternal body composition was measured using segmental multi-frequency bioelectrical impedance analysis. All women were at low risk of GDM without previous GDM, family history of diabetes, PCOS and other confirmed risk factors and booked for a one-step 75 g Oral Glucose Tolerance Test (OGTT) between 24-28 weeks.

Results: There were 2698 women in the study. Of them, 475 individuals had a GDM. Age, fat mass, fat mass index, fat mass of left arm, ECW of right leg and ECW/TBW of trunk were independently associated with GDM. Fat mass was the strongest risk factor for GDM (aOR 4.986, P=0.008). And the OR increased 2.54 fold in the highest quartile of FMI compared with the lowest quartile. Fat mass of left arm, ECW of right leg and ECW/TBW of trunk were protective factors for GDM.

Conclusion: These risk/protective factors are theoretically plausible and provide important guidance to identify GDM in pregnant women who in a low risk. Clinicians should take preventive measures based on these factors, such as diet and exercise lifestyle interventions for pregnant women with high fat mass and fat mass index, even for low-risk pregnant women. The use of the bioelectrical impedance measurements of body composition can assist clinicians in early identification of GDM. This suggests that if conditions permit, we can carry out routine body composition measurement during pregnancy.

Biography

Yan Wang has completed her Bachelor's degree from Nursing School, West China Hospital of Medicine, Sichuan University, China.

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