

عنوان: Relationship between maternal 1st trimester anthropometry indexes and pregnancy-delivery complications and outcomes in clients of Tabriz health care centers, 2009-2010

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Background and Objective: Studies among non-pregnant women revealed that the health risks among overweight/obese women were greater compared with those with normal Body mass index (BMI) and waist circumference (WC) values and a number of studies confirmed that high WC independently predicted obesity-related disease but similar studies were rare among pregnant women, hence, this study was aimed to investigate and compare the prediction value of maternal early pregnancy BMI and WC relation to gestational complications and outcomes.

Material and Method: In this cohort study, demographic and obstetric history of pregnant women collected by questionnaire. Weight, height and waist circumference of 1140 nulliparous pregnant women delivered singleton babies were measured based on standard methods by a trained assessor at 1st trimester of pregnancy in Tabriz health care centers. BMI was calculated and was classified based on WHO classification. Abdominal obesity was defined as WC equal to 88 cm and more. After delivery, pregnancy-delivery complications and outcomes were recorded in the questionnaire. Data were analysed using and multivariate logistic regression by SPSS software (ver 15.0).

Results: Mean BMI and WC among nulliparous women at 1st trimester of pregnancy was 24.32 (kg/m²) and 81.84 cm respectively. Significant correlation was found between early pregnancy BMI and WC ($r=0.84$, $P<0.001$). In comparison with women of normal BMI and WC, obese women (BMI ≥ 30 kg/m² or WC ≥ 88 cm) were more likely to have gestational hypertension, preeclampsia and gestational diabetes. Odds of vaginal delivery conversely was lowest in overweight and obese women and women with high WC {OR= 0.49, CI 95%: 0.35 - 0.68}, {OR= 0.03, CI 95%: 0.02 - 0.07}, {OR= 0.31, CI 95%: 0.22 - 0.42}. Likelihood of cesarean delivery was more common among overweight and obese women and also in women with abdominal obesity {OR= 1.91, CI 95%: 1.36 - 2.68}, {OR= 17.28, CI95% 8.98 - 33.23} and {OR= 2.43, CI95% 1.73 - 3.41}. Macrosomia rate was higher in the overweight, obese women and those with high WC {OR= 3.23, CI95%: 1.12 - 8.59}, {OR= 12.12, CI95%: 4.64 - 31.68} and {OR= 9.28, CI95%: 2.76 - 31.21} in comparison with women who had normal BMI and WC. Obese women were more likely to have postpartum hemorrhage {OR= 4.28, CI95% 1.94 - 9.45}, {OR= 2.06, CI95% 1.03 - 4.12} and cesarean wound infection {OR= 6.48, CI95%: 3.14 - 13.36}, {OR= 3.18, CI95%: 1.55 - 6.49}. Preterm delivery and Birth weights less than 2,500 g were more common in two extent of BMI (underweight and also obese women), {OR= 21.14, CI95%: 8.24 - 54.19} and {OR= 3.72, CI95% 1.40 - 9.86}, {OR= 10.75, CI95%: 4.49 - 25.7} and {OR= 2.79, CI95% 0.94 - 8.3} respectively.

Conclusion: Results of this study indicated that BMI of early pregnancy could predict pregnancy-delivery complications and outcomes. WC as well as BMI could be a valid predictor of gestational complications and outcomes among pregnant women.

Key words: Body Mass Index, Waist Circumference, Pregnancy-delivery complications and outcomes.