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Measurement of Insulin Resistance as an Early Predictor of Gestational Diabetes Mellitus iin High Risk Pregnant Women

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Objective- The purpose of this study was to determine the predictability of gestational diabetes mellitus in in high risk pregnant women by measuring insulin resistance (HOMA-IR) before impaired glucose tolerance has developed.
Methods- It was longitudinal cohort study involved 123 women with one or more risk factors for the development of GDM were proceeded 75 g one step OGTT before 24 week and who developed GDM were excluded. BMI, fasting sugar, fasting insulin and (HOMA-IR) of these pregnant women were measured before 24 week. The second OGTT was performed at 24-28 weeks of gestation. The backward stepwise method was applied to estimate possible associations with GDM. Cutoff points were estimated using receiver operating characteristic curve analysis.
Results - GDM was found in 40 (32.5%) of high risk patients during 24 -28 week. The mean and median of variables, age, parity, BMI, fasting insulin, fasting glucose and HOMA-IR were significantly higher in GDM group. Logistic regression analyses showed HOMA-IR and BMI independently associated with GDM while HOMA-IR cutoff 2.25 with adjusted OR 6.324 (95 % CI 2.898-13.797), AUC 0.920, and BMI cutoff 26.6 kg/m2 with adjusted OR 1.166 (95 % CI 1.020- 1.334), AUC 0.796, can predict development of GDM.
Conclusions – The prediction for development of GDM in later gestation can be achieved based on maternal BMI and HOMA-IR in early week of gestation particular, if BMI is >26.6 kg/m2 and the HOMA-IR score 2.25.