



## World Congress on **Diabetes and Pediatric Endocrinology**

### **Maternal serum placental growth factor (PIGF) concentration at 11-14 weeks of gestation as a predictor of gestational diabetes Mellitus (GDM)**

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**Background:** Gestational diabetes mellitus (GDM) is a well-known complication during pregnancy. Early detection and management of GDM can rationalize the antenatal care and reduce the frequency of adverse pregnancy outcome. Placental growth factor (PIGF) is an angiogenic factor that plays a vital role in the development of the placental vasculature. GDM induced hyperglycemia is associated with abnormal placental development. Several studies have found that 1st trimester PIGF was elevated in women who subsequently developed GDM, indicating a hyperglycemic and proinflammatory state stimulates the release of PIGF in maternal serum early in pregnancy. As there are evidences regarding the association between early trimester serum PLGF and subsequent development of GDM, the objective of the study was to evaluate the maternal serum PIGF in early pregnancy as a predictor of GDM.

**Methods:** A prospective cohort study was carried out involving 130 women in early gestation (11-14 weeks) attending the antenatal clinic of Bangabandhu Sheikh Mujib Medical University during the period of July 2019 – December 2019. Maternal serum was taken for measurement of PIGF and OGTT at 11-14 weeks of gestation. Then the subjects were followed up between 24 – 28 weeks and blood was collected for OGTT. Those who did not develop GDM at this time were further tested at 32-36 weeks for diagnosis of GDM. The women diagnosed with GDM were followed up two weekly or more frequently where needed. Collected data were processed and analyzed using SPSS (Statistical Package for Social Sciences), version 22.0. The accuracy of PIGF and other maternal factors in predicting the development of GDM were calculated using multiple logistic regression. ROC (receiver operator curve) was used to decide the best cut off point of PIGF values.

**Result:** A total of 9 (6.9%) patients had developed GDM. The Mean ( $\pm$ SD) age of the non-GDM (group I) and GDM (group II) patients were 25.02( $\pm$ 4.981) years and 26.33( $\pm$ 6.144) years respectively. The parameters such as age, BMI, and parity were statistically not significant between two groups ( $p>0.05$ ). The Mean ( $\pm$ SD) PIGF MoM of the patients were 1.09 $\pm$ 0.07 in group I and 1.14( $\pm$ 0.15) in group II which was statistically significant ( $p<0.05$ ) between two groups. Multivariate logistic regression analysis demonstrated that a subject with PIGF MoM had 1.675 (95.0% C.I 1.065 to 1.275) times increase in odds was significantly associated with predictor of GDM. Other factors like age, weight, parity and BMI were not significant ( $p>0.05$ ) predictors of gestational diabetes. In receiver-operator characteristic (ROC) the best combination of sensitivity and specificity for prediction of gestational diabetes mellitus (GDM) which gave PIGF(pg/ml) cut off value of 87.25 pg/ml with 88.89% sensitivity and 78.51% specificity for prediction of gestational diabetes mellitus (GDM).

**Keywords:** First trimester screening; Gestational diabetes mellitus; Placental growth factor.

### **Biography**

Sanzida Mahmud is working in Department of Feto-maternal Medicine at Bangabandhu sheikh Mujib Medical University, Shahbagh, Dhaka. Sanzida Mahmud published many paper in interenational journals.