

**Maternal and neonatal outcomes in women with pregestational and gestational diabetes mellitus in an African- and Caribbean-American inner-city population**

Pregestational Diabetes Mellitus (Pre-GDM) and Gestational Diabetes Mellitus (GDM) are risk factors for adverse maternal and neonatal outcomes. The objective of this retrospective chart review study is to determine the association between pre-GDM, GDMA1 (diet-controlled GDM) and GDMA2 (oral hypoglycemic-controlled GDM) on maternal and neonatal outcomes in an African- and Caribbean-American inner-city population. Data from the University Hospital of Brooklyn between 2014 and 2018 was analyzed. GDM was considered as serum glucose  $\geq 105$  mg/dl while fasting,  $\geq 190$  mg/dl,  $\geq 165$  mg/dl, and  $\geq 145$  mg/dl at 1-, 2- and 3-hours post glucose load respectively. Among 6426 singleton live births, 490 (7.6%) mothers were found to be diabetic during pregnancy, 51% of which had GDMA1, 44% GDMA2, and 5% pre-GDM. The mean age of the study population was 32 years and mean BMI was 36.1kg/m<sup>2</sup>. Maternal outcomes revealed a 16% incidence of preeclampsia and chronic hypertension and a 56% C-section rate. The mean gestational age was 37 weeks. Preterm birth (delivery at gestational age  $\leq 37$  weeks) was observed in 19% of pre-GDM mothers, 8% GDMA1 and 13% GDMA2. Infants born to pre-GDM mothers had lower 1-minute APGAR scores, 23% having a score  $\leq 7$ . However, there were no differences in the 5-minute APGAR scores between the 3 groups. 15% of neonates born to women with pre-GDM were large for gestational age, 10% GDMA1, and 13% GDMA2. The proportion of hyperbilirubinemia was similar between the 3 groups while neonatal hypoglycemia was higher in the pre-GDM group (34.6%) compared with GDMA1 (13.9%) and GDMA2 (23%) mothers. Neonates born pre-GDM mothers also had higher rates of respiratory distress at birth requiring respiratory support (27%) as opposed to 15% and 16% in the GDMA1 and 2 groups respectively. In conclusion, pre-GDM is associated with worse neonatal outcomes than GDM. Optimizing maternal glucose control before and during pregnancy may help alleviate some of these adverse neonatal outcomes.