



## Correspondence

**Maternal glycemia and neonates birth weight in Asian Indian women<sup>☆</sup>**

The Various demographic, maternal and paternal anthropometric and maternal metabolic factors have been correlated with fetal growth [1]. Among them the maternal hyperglycemia is the most common and significant factor associated with fetal macrosomia [1]. Increasing carbohydrate intolerance in women without overt gestational diabetes was associated with a graded increase in the incidence of macrosomia [2]. We attempted to elucidate the glycemic level above which this occurs.

A total of 200 pregnant women underwent the 75 gm OGTT recommended by WHO and the plasma glucose was estimated by GOD-POD method. Women with a 2 h PG  $\geq 140$  mg/dl were diagnosed to have GDM [3]. All of them underwent routine clinical examination. Their BMI was estimated from the pre-pregnancy weight. GDM women whose 2 h post meal plasma glucose remained  $\geq 120$  mg/dl with medical nutrition therapy, were advised Insulin. Women with 2 h PPG  $< 140$  mg were considered to be normal and no advice was given. All of them were followed till delivery.

We analyzed the data of 198 women who completed the study. Statistical methods employed were chi – square test, trend chi square test and logistic regression using SPSS version 10 package.

The mean age of the study population was  $24.79 \pm 3.65$  years. The BMI of this population was  $22.37 \pm 3.66$ . The mean week of gestational period during which the test was done was  $26.1 \pm 4.6$ . Among

them, 20.5% (41) had 2 hr post glucose  $\geq 140$  mg/dl. The mean gestational week at which the women delivered was  $36.6 \pm 0.85$ . The number of babies with birth weight  $\geq 3.5$  kg was 33 (16.7%). Macrosomia was defined as birth weight of 3.5 kg or more in our population [4] and this cut off level was found to be the 85<sup>th</sup> percentile in our study. None of the infants developed any neonatal complications.

Out of the 33 mothers who delivered big babies, 12 (36%) of them were GDM, whereas 21 (63.6%) were non GDM (2 h  $< 140$  mg). We categorized the women with 2hr PG  $\geq 140$  mg/dl as Group 1 and women with 2hr  $\geq 120$  mg/dl as Group 2. The unadjusted odds ratio for the two groups was 2.68 (95% C.I.- 1.19–6.05) and 3.23 (95% C.I.- 1.48–7.03) respectively with statistical significance ( $p < 0.05$ ). The adjusted odds ratio after considering the covariates such as maternal age, BMI, gravida and 2 h PG level, we found that the odds ratio for Group 1 was 2.29 (95% C.I.- 0.90–3.19) and for Group 2 it was 3.02 (95% C.I.- 1.30–7.00). The odds ratio for predicting big babies with respect to a cut off level of 2 h  $\geq 120$  mg/dl was also statistically significant ( $p < 0.05$ ) (Table 1). Paul W. Franks et al also observed that the maternal glycemia of 2 h PG  $> 120$  mg during pregnancy was associated with increased birth weight [5].

Increased birth weight of neonates was observed even when the mother's glucose tolerance was less than the glycemic criteria recommended by WHO for diagnosing GDM. The occurrence of macrosomia was continuum as the 2 h plasma glucose increased from 120 mg/dl (Table 2) and thus this level needs cognizance.

<sup>☆</sup> This original work was carried out in Dr V Seshiah Diabetes Care and Research Institute, Chennai and Lakshmi Nursing Home, Alwaye, Kerala.