

THE ASSOCIATION BETWEEN SEVERITY OF IMPAIRED GLUCOSE TOLERANCE IN GESTATIONAL DIABETES WITH AGE, BMI AND ETHNICITY

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Background

- Gestational diabetes (GDM) has been shown to cause adverse fetal outcomes including macrosomia, shoulder dystocia and stillbirth.
- The multinational Hyperglycaemia and Pregnancy Outcome Study (HAPO, 2008) has shown there is a linear relationship between oGTT result and fetal growth.
- Investigating epidemiological risk factors is essential to ensure appropriate high-risk groups are being screened.

Methods & Materials

- A retrospective case note review was undertaken of all patients with newly diagnosed GDM ($n=321$) over a 2-year period at the West Middlesex University Hospital.
- The 75g oGTT results were recorded along with relevant demographic data including parity, age, BMI and ethnicity.
- Statistical significance was ascertained using one-way ANOVA and regression analysis

Results

- Asian ethnicity had the highest fasting plasma glucose ($\mu=5.49$; $n=208$), and 2-hour plasma glucose ($\mu=9.32$; $n=208$).
- One-way Anova revealed a statistically significant difference between Caucasian, Black, Asian and Oriental ethnicities with fasting glucose ($p=0.008$) and at 2 hours ($p=0.046$).
- Regression analysis revealed a significant direct association between BMI and fasting glucose ($p=0.002$; $R=0.169$).
- On simple scatter plot analysis, an inverse correlation was evident between age and fasting plasma glucose level, although this was not significant on regression analysis (Figure 1)

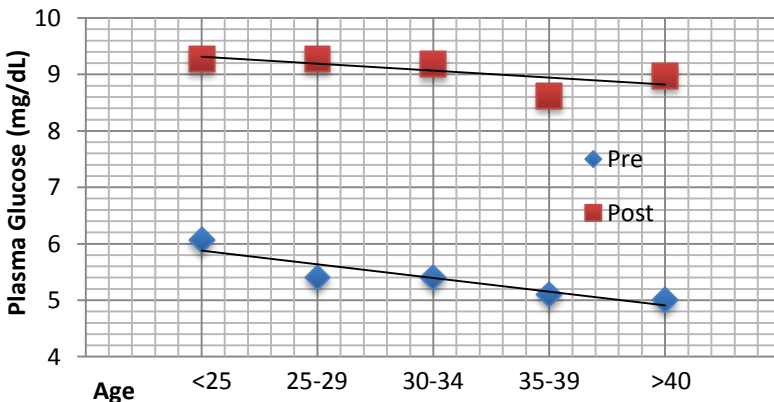


Figure 1 – Scatter plot displaying relationship between age and plasma glucose pre and post 75g oral glucose

Discussion

- This study highlights the variation in glucose tolerance between different ethnicities. It also substantiates the known relationship between BMI and fasting plasma glucose.
- Increasing age has historically been associated with insulin resistance and is a known risk factor for GDM. Interestingly, this study suggests that fasting glucose amongst GDM patients is inversely related to age, perhaps owing to lifestyle factors and differing perceptions amongst younger patients.