FLAT ORAL GLUCOSE TOLERANCE TEST REVISITED
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Introduction
Gestational diabetes mellitus (GDM) that is defined as glucose intolerance of variable severity with onset or first recognition during pregnancy has a strong association with adverse pregnancy outcomes. The Oral Glucose Tolerance Test (OGTT) is considered as the current ‘gold standard’ for the diagnosis of GDM. A flat plasma glucose concentration curve is one of the major problems encountered while interpreting OGTT results. It is reported when the glucose concentration at 1 hour is less than 1 mmol/L above the fasting value. In an attempt to interpret the flat OGTT, we decided to implement testing plasma insulin for all flat responses.

Methods
Between January and June 2015, 75g 2 hour OGTTs were performed on 1786 pregnant women aged 16-46 years. 206 flat responses were identified.

Results
Based on the insulin response, the OGTT have been divided into 4 subgroups. In Group A (n=111), OGTT showed early insulin release consistent with normal glucose metabolism. Group B (n=57) showed a similar insulin release but further rise of insulin at 2 hours. In comparison, in Group C (n=30), there was relatively less initial insulin release at 1 hour but a further release at 2 hours, consistent with delayed glucose absorption. In the small Group D (n=8) both insulin and glucose concentrations were low, suggestive of poor glucose absorption.

Conclusion
Reflex insulin testing allowed us to identify that 54% of the women did not require a repeat OGTT. However, groups B and C showed evidence of delayed absorption and group D with poor absorption required retesting.