

OP-37: Fasting plasma glucose and two-hour postprandial plasma glucose as first-stage screening tests for gestational diabetes mellitus

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Objective: To compare the usefulness of fasting plasma glucose (FPG) and 2-hour postprandial plasma glucose (PPPG) as first stage screening tests for gestational diabetes mellitus (GDM).

Method: 271 pregnant women who were referred to the Reproductive Biology Laboratory, Faculty of Medicine, Colombo for oral glucose tolerance tests (OGTT) were recruited for the study. An accurately timed 2-hour post-lunch PPPG was performed within 3 to 7 days following the OGTT, after obtaining informed consent. The WHO 75g 2-hour OGTT (1999 criteria) was used as the reference standard.

Results: Out of 271 women 75 (27.7%) had GDM according to 2-hour OGTT using the WHO criteria (FPG >126 mg/dl or 2 hour value >140 mg/dl). The correlation between the 2-hour OGTT against FPG was 0.78 and 2-hour OGTT against 2-hour PPPG was 0.62. Proportion of the area under the receiver operating characteristic curve (ROC curve) for FPG was 0.82 and 0.73 for 2-hour PPPG. For FPG at 80 mg/dl the sensitivity and specificity was 91.9% and 48.7% respectively. At 85mg/dl sensitivity was 82.4% while specificity increases to 67.0%. Two-hour PPPG of 85 mg/dl had a sensitivity of 90.5% and a specificity of 24.4% respectively and the values at 90 mg/dl were 85.1% and 40.6%.

Conclusions: Fasting plasma glucose is a better screening test for gestational diabetes mellitus than post-prandial plasma glucose. Fasting plasma glucose also has practical advantages and a threshold of 80 mg/dl appears to be optimal.