

Abstract

Background:

There has been a debate on whether glucose challenge tests in the non-fasting state are an effective screening or diagnostic test for gestational diabetes mellitus (GDM). The 75 gram fasting oral glucose tolerance test (OGTT) is the gold standard to diagnose GDM. However, non-fasting 75-gram one step oral glucose challenge test proposed by Diabetes in Pregnancy Study Group India (DIPSI) with the 2-hour cut-off value of $\geq 140\text{mg/dL}$ has also emerged as a diagnostic technique. The aim of this study was to investigate the sensitivity and specificity of DIPSI compared to GTT.

Methods:

Pregnant women in period of gestation between 24-28 weeks were recruited by simple random sampling method. Non fasting 75g DIPSI were performed in all, followed by a fasting 75g OGTTs within a week time. National Institute for Health and Care Excellence (NICE) 2015 and World Health Organization (WHO) 2013 diagnostic values of OGTT were used as reference tests to diagnose GDM.

Findings:

According to the WHO and NICE criteria 20% (33/165) and 23% (38/165) of pregnant women had GDM, compared to 22.4% (37/165) detected by DIPSI. Sensitivity of DIPSI compared to WHO and NICE criteria was 64% and 76% while specificity was 88% and 94%. The area under the ROC curve for the ability of 2-hour value of GCT to predict GDM detected by DIPSI was 0.8 (SE 0.4) compared to WHO and 0.868 (SE 0.38) compared to NICE.

Conclusion: DIPSI with 2-hour cutoff value $\geq 140\text{mg/dL}$ lacks sensitivity to diagnose GDM recognized by standard OGTT. However a well-validated two-stage procedure using the

DIPSI 75g OGCT in the non-fasting state as the initial screening test, followed by fasting OGTT for definitive diagnosis in those who screen positive, is an adequate alternative for diagnosing GDM for low resource settings.