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To evaluate the different diagnostic criteria of gestational diabetes mellitus (GDM) in Indian women and to study their correlation with perinatal morbidity

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OBJECTIVES

High prevalence of diabetes and genetic predisposition to Metabolic syndrome places Indian women at risk to develop gestational diabetes mellitus (GDM) and its complications. Literature defines multiple criteria for GDM but does not identify a threshold of maternal glycemia beyond which this risk begins. This prospective study compares available diagnostic criteria for GDM in Indian women and their correlation with perinatal morbidity.

METHODS

948 consecutive voluntary non-diabetic pregnant women were recruited for the study. 723 of these (mean age 23.45 years; 75.7% <25 years) who reported for the follow up were screened for GDM at 24-28 weeks gestation by ACOG guidelines and WHO criteria. HbA 1c (HPLC) and fasting as well as postprandial plasma insulin levels (Immuno-radiometric) were also analysed. Pregnancy outcome was known for 291 of these. Concordance of risk factors and perinatal complications was analysed with respect to GDM by various criteria.

RESULTS

Prevalence of GDM at 24-28 weeks gestation was found to be 9.7% by WHO criteria; 6.36 by Carpenter and Coustan; and 3.5% by O'Sullivan's. Marginally higher prevalence was observed with higher age, past history of abortion and family history of diabetes mellitus ($p>0.05$). None of these women had HbA 1c $>6\%$. Relative risk of abnormal delivery (Pregnancy outcome) in GDM was 1.93, 1.35 and 1.17 by O' Sullivan's, WHO and Carpenters criteria, respectively ($p>0.05$). Abnormal deliveries were marginally higher in women with high post-glucose load insulin levels. Mean weight of the newborns was essentially the same in GDM and Non-GDM women by any of the criteria. 1hr and 2hr post glucose values were more sensitive in diagnosing GDM than fasting and 3hr values. Fasting values had poorest specificity with 2.5% of non- GDM women having values above the cut-off. Combinations, permutations and medications of these criteria did not improve their predictive value for abnormal delivery over that of O'Sullivan's criteria.

RECOMMENDATIONS

From the above study it is quite difficult to lay down a cut off value for HbA1c in Indian women above which we can say that the maternal & neonatal complications start because the group had very few number of high risk patients. Moreover, none of the GDM by any criteria had HbA1c value higher than reported cut off of 6.0%. So may be it is not a sensitive test for the diagnosis of GDM, in young Indian women.