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Diagnostic Significance of Individual Glucose Values in 75 g Oral Glucose Tolerance Test in a Group of Pregnant Women with Gestational Diabetes Mellitus

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Background: Gestational Diabetes Mellitus (GDM) is a common health complication among pregnant women. Diagnosis of GDM is based on the values of Oral Glucose Tolerance Test (OGTT), which includes plasma glucose concentration of fasting (12 hour), 1st hour and 2nd hour samples following a standard oral glucose load.

Objective: To assess the diagnostic significance of individual glucose values in 75g OGTT in a group of pregnant women

Methods: The study was conducted in antenatal clinics at Teaching Hospital Mahamodara. A total of 150 pregnant women during 24-28 weeks of gestation were enrolled in the study. Data collection was carried out via an interviewer-administered questionnaire followed by retrieval of laboratory data on OGTT of the study subjects.

Results: Seventeen pregnant women (11.33%) were diagnosed as GDM by OGTT based on the World Health Organization criteria for diabetes in pregnancy. The diagnosis was based on individual values of fasting or 2nd hour glucose concentrations or by increased levels in more than one of those parameters. However, none of the mothers were diagnosed solely based on the 1st hour glucose values. Further, the findings on OGTT revealed significant positive correlations between fasting, 1st hour and 2nd hour glucose values (r^2=0.486, r^2=0.511, r^2=0.750, p=0.000) in the selected study population. GDM was associated with risk factors such as previous history of diabetes mellitus (r^2=0.142, p=0.084) or GDM (r^2=0.102, p=0.213), maternal overweight (r^2=0.014, p=0.998) and excessive sweet consumption (r^2=0.198, p=0.015).

Conclusions: Present findings revealed that, measurement of only 2nd hour glucose value is not sufficient for accurate diagnosis of GDM. Considering the diagnostic significance of both fasting and 2nd hour glucose values compared to the 1st hour glucose value in the diagnosis of GDM, a modified OGTT including fasting and 2nd hour glucose estimations could be used for accurate diagnosis of GDM.

Keywords: *Gestational diabetes mellitus, Oral glucose tolerance test, Pregnant women, Risk factors, World Health Organization diagnostic criteria*