

GDM: first trimester diagnosis

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Objective

The aim of this study is to examine the performance of 75 gr OGTT for early diagnosis of gestational DM and propose new cut offs for 75 gr OGTT with the intention of GDM diagnosis in the first trimester of pregnancy.

Methods

350 patients who were admitted to Inonu University School of Medicine Obstetrics and Gynecology Outpatient Clinic for the purpose of first trimester screening between April 2012- January 2015 were enrolled prospectively in this study. Gestational diabetes mellitus diagnosis were performed in the first trimester of pregnancy (11-14 weeks) with 75 gr oral glucose tolerance test (OGTT) based on International Association of Diabetes and Pregnancy Study Groups (IADPSG) one-step diagnostic approach. The diagnosis of GDM were established when any single threshold value on the 75-g, 2-hour OGTT was met or exceeded (fasting value, 92 mg/dL; 1-hour value, 180 mg/dL; and 2-hour value, 153 mg/dL). Patients who had negative 75 gr OGTT in the first trimester were tested again in the second trimester (24-28 weeks). One-way ANOVA analysis was used to compare the three groups. Bonferroni test was used in multiple comparisons. The detection of optimum cut-off values in the prediction of GDM were estimated using receiver operating characteristic (ROC) curves analysis and performance of screening was assessed by comparison of area under ROC (AUROC) curves.

Results

In this study period, first trimester gestational DM screening were performed in 350 patients. In total 51 patients were diagnosed GDM. 41 (80, 3%) of these patients were diagnosed in the first trimester and the remaining 10 (19, 7%) were diagnosed in the second trimester. The median age of early onset GDM group were detected 32, 80±6, 98 which was significantly higher than non GDM group ($p=0, 011$). There were no remarkable change in fasting glucose cut off value that 92 mg/dl were 66, 6% sensitivity and 99, 3% specificity (AUROC 0, 892, 95%CI 0, 855-0, 923, 0, 0265 standard error) for the diagnosis of GDM in the first trimester. The cutoffs for a positive 75 gr OGTT were reduced from 180 to 173 mg/dl for 1 h post- (AUROC 0, 908, 95%CI 0, 873-0, 936, 0, 0298 standard error), from 153 to 129 mg/dl for 2 h post-glucose load (AUROC 0, 861, 95%CI 0, 515-0, 775, 0, 0377 standard error).

Conclusion

In this study we demonstrated that performing 75 gr OGTT based on International Association of Diabetes and Pregnancy Study Groups (IADPSG) one-step approach were detect 80, 3% of GDM during the first trimester of pregnancy. For increasing the diagnostic performance of 75 gr OGTT in the first trimester of pregnancy the currently used cut offs could be decreased. These new cut offs could provide early detection of GDM and contribute decreasing the adverse effect of hyperglycemia by the beginning of preventative measures in the earlier period of pregnancy.