

Significance of Oral Glucose Challenge Test at first antenatal visit for screening for Diabetes Mellitus

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Abstract

Objectives: To study the significance of oral glucose challenge test as early screening for diabetes before 20 weeks of pregnancy

Methods: Two hundred seventeen consenting pregnant women attending antenatal clinic for first visit at gestation earlier than 20 weeks were on registration, administered a 1-hour 50g oral glucose challenge test. Women with abnormal test (plasma value of $\geq 140\text{mg/dL}$) were subjected to 3-hour 100g oral glucose tolerance test. Reevaluation with OGTT was done at 24-30 weeks of pregnancy in women with normal OGCT and those with abnormal OGCT but normal OGTT in early pregnancy.

Results: Overall incidence of abnormal OGTT was 8.2 per cent. Early OGCT identified 44.4 per cent, higher among women with high risk pregnancies. There was no significant difference in maternal and neonatal outcomes among groups with detection of abnormal OGTT before 20 weeks and those after 24 weeks pregnancy.

Conclusions: OGTT performed in first half of pregnancy will help to detect the abnormality early and permit further evaluation and intervention resulting in improved perinatal outcome.

INTRODUCTION

Gestational diabetes mellitus (GDM) is defined as carbohydrate intolerance of varying degrees of severity with onset or recognition during pregnancy (1). It does not recognize the possibility that unrecognized glucose intolerance may have antedated or begun concomitantly with pregnancy.

Prevalence of GDM may range from 1-16 per cent of all pregnancies, depending on the population studied and the diagnostic tests employed (2). Screening programs coupled with intervention strategies (diet or diet plus insulin) have reduced the perinatal morbidity and mortality associated with GDM. However, despite these interventions, the perinatal morbidity for GDM is still twice as that for mothers with normal carbohydrate tolerance during pregnancy (1). A possible explanation for the persistent higher perinatal morbidity for GDM may be the late

diagnosis. Current recommendations are to perform the oral glucose challenge test (OGCT) at 24-28 weeks of pregnancy. However, this leaves a short time of 12-14 weeks to institute appropriate interventions. In spite of reports claiming 40-66 per cent identification of abnormal glucose tolerance if carried out early in pregnancy (3, 6), there have been conflicting reports on the usefulness of screening for GDM at first antenatal visit (4, 5).

Since the key issue in the successful management of GDM is the early diagnosis and treatment, the present study was designed to determine the significance of studying the behavior of OGCT before 20 weeks of gestation.

SUBJECTS AND METHODS

Pregnant women registering for antenatal check before 20 weeks were administered 50g of glucose orally regardless of time of previous meal and an hour later venous blood was collected for glucose determination (Oral Glucose Challenge

higher number of cases of neonatal hypoglycemia in early GDM group, Bartha et al₆ found comparable neonatal outcomes as that with traditional diagnosis. It is presumable that early onset GDM might be Type II pregestational diabetes.

Although course and pregnancy outcomes were similar in the two groups studied, the diagnosis of abnormal glucose screen test in 44 percent of women with gestational diabetes is in itself a significant finding. These cases could be pregestational type II diabetics. It is possible that the early identification of these cases resulted in an intensive antenatal supervision and reduced rate of diabetes related complications. However, a larger multicentric study is required to conclude.

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