

## Correlation between Abnormal Glucose Challenge Test and Pregnancy Outcomes

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### Abstract

**Introduction:** Gestational diabetes is the most common metabolic disorder in pregnancy. Glucose Challenge Test (GCT) is done for all pregnant women during the 24<sup>th</sup> to 28<sup>th</sup> weeks of gestation. If the GCT value is more than 130 mg/dl a Glucose Tolerance Test (GTT) is asked and if GTT is impaired, gestational diabetes mellitus (GDM) is diagnosed and she will receive treatment accordingly. Some studies have illustrated that impaired GCT can cause unfavorable pregnancy outcomes. Therefore, the goal of this study was to determine the pregnancy outcome in pregnant women with abnormal GCTs.

**Materials and Methods:** This study was done on all pregnant women attending Babol Shahid Yahyanezhad Hospital for prenatal care during 1999 to 2009. GCT was done for all the participants during the 24th to 28th weeks of gestation. Pregnancy outcomes of 225 pregnant women with abnormal GCTs and normal GTTs were compared with those of 225 pregnant women with normal GCTs as the controls. The individuals were compared for pregnancy outcomes such as macrosomia, premature rupture of membranes (PROM) and the need for a cesarean section (C/S).

**Results:** The average birth weight of the neonates were  $3.5 \pm 0.5$  kg and  $3.3 \pm 0.4$  kg ( $p < 0.001$ ) in the cases and controls, respectively. Twenty-five neonates in the case group (12.1%) and eight neonates in the control group (3.6%) had macrosomia ( $p = 0.003$ ). Frequency of PROM was 17.85% (40) in the cases and 8.9% (20) in the controls ( $p = 0.008$ ). The cases had a higher frequency for preeclampsia 4.4% (10) than the controls 1.8% (4), ( $p = 0.17$ ). And pregnancy in the cases lead to a greater number of Cesarean sections, 42.2% (95) in comparison to the controls, 28% (63), ( $p < 0.001$ ).

**Conclusion:** Prevalence of macrosomia, PROM and C/S were higher in pregnant women with abnormal GCTs. Due to the aforementioned unfavorable conditions that bear the risk of a poor perinatal outcome, early diagnosis and proper follow up of women with GDM is suggested during the prenatal period.

**Keywords:** Gestational diabetes mellitus, Glucose challenge test, Glucose tolerance test, Macrosomia, Perinatal outcome, Preeclampsia, Pregnancy, Premature rupture of membranes.

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