



## Is there a place for oral glucose tolerance test at term for macrosomic fetuses?

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### Objective

Gestational diabetes is associated with increased maternal and fetal morbidity. Due to the increasing intolerance to insulin as pregnancy progresses, pregnant women with normal glucose tolerance at 24-28 weeks gestation, may develop gestational diabetes as pregnancy advances. The use of oral glucose tolerance test at term has been questioned. The aim of this study was to compare obstetric outcomes of women with normal glucose tolerance in the mid trimester who carry macrosomic fetuses and have normal versus pathologic oral glucose tolerance test (OGTT) at term.

### Methods

A retrospective cohort study including all women giving birth at a single tertiary center between January 2012 to January 2017. Inclusion criteria included women with singleton pregnancy, 37 weeks of gestation and above, with normal glucose challenge test (GCT) at 24-28 weeks gestation, who performed 100g OGTT at term, due to LGA fetus based on departmental guidelines. Exclusion criteria included non-vertex presentation, previous uterine scar, placenta previa, diabetes mellitus or past third or fourth degree perineal tear. OGTT was considered abnormal according to either Cousten and Carpenter criteria or the National Diabetes Data Group (NDDG). The results of the OGTT were available to the staff prior to the delivery. Clinical characteristics and obstetrical outcomes were compared between patients with and without pathological OGTT.

### Results

Database included 34, 897 women, of them 1131(3. 2%) met inclusion criteria. 150 (13. 2%) and 981 (86. 7%) women were included in the abnormal and the normal OGTT groups, respectively. The women in the abnormal OGTT group were older (34 vs. 33 years old;  $p=0.001$ ), with higher glucose levels on GCT in the mid trimester (126 vs. 110 mg/dL;  $p=0.001$ ) and lower estimation of fetal weight (3655 vs. 3800 mg;  $p=0.001$ ). The total rate of cesarean section was more than doubled for the abnormal OGTT group ( $n=37(24.7\%)$  vs.  $n=103(10.5\%)$ ;  $p=0.001$ ) with significantly higher elective cesarean sections ( $n=21(14\%)$  vs.  $n=56(5.7\%)$ ;  $P=0.001$ ). 878 (89. 5%) vs. 113 (75. 3%) women gave birth vaginally in the normal vs. abnormal OGTT groups, respectively. In a sub analysis of these groups, no difference was observed between the groups in the rate of shoulder dystocia [ $n=14(1.6\%)$  vs.  $n=2(1.8\%)$ ] post-partum hemorrhage [ $n=13(1.5\%)$  vs  $n=4(3.5\%)$ ] or 3rd and 4th degree perineal tear [ $n=13(1.4\%)$  vs.  $n=1(0.9\%)$ ].

### Conclusion

Abnormal OGTT at term was found to be related to higher rates of elective cesarean deliveries, with no difference in obstetrical complications among women who delivered vaginally. This findings challenge the need for OGTT at term to women with macrosomic fetuses.