

Abnormal glucose screening by normal glucose tolerance pregnancy outcome

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ABSTRACT

Objective: To study the pregnancy outcome of patients with abnormal glucose screening test followed by normal glucose tolerance test.

Methods: In Sultan Qaboos University Hospital, Sultanate of Oman, a study was conducted to compare the complication of pregnancy, fetal weight, growth, mean weight and neonatal morbidity in women with abnormal glucose screening test that was performed from between July 1999 and June 2000. Screening test postnatal files from each group was analyzed. The Chi square test, and test for comparison of proportions were used.

Results: Although women with abnormal glucose screening test were older, there was no evidence in this study that increasing parity is a risk factor for abnormal glucose screening test. Candidiasis and polyhydramnios was significantly more frequent in the group with abnormal glucose screening test. *Saudi Med J 2002; Vol.*

The association between (OGTT) if the first test is above intolerance and poor fetal outcome has been recognized for many years. Gestational diabetes but not (GD) defined as a disturbance of glucose tolerance and hist varying severity, with onset during pregnancy¹ is currently recognized. In many countries by first screening of pregnancy women are considered 24-28th week of gestation. Increased incidence of maternal screening test (GST) or glucose tolerance test (GTT) maternal and performing an oral glucose tolerance test (OGTT) concept

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glucose abnormality and the fetus is likely to be abnormal was 1
 GCT is a risk factor for macrosomia, details method patients,
 screening and diagnosis re women 2 weeks had abnormal C
 compliance with diet, 2 drinks 15 weeks decrease weight, det
 compliance to be in a fasting state testing, results of glu
 Also in practice, correct timing of the test is important (C
 which is of critical importance in interpretation of polyhydra
 results is difficult to ensure glucose screening presence
 involves compliance with premenstrual fasting, taking a pa
 glucose drink. Various alternative oral tests have been used these v
 in different centres (Glucola in Denmark, Glucotrol in Italy, their a
 beans, and so forth), which makes compliance better. W
 O'Sullivan et al¹⁰ reported the prevalence excluded. The
 among pregnant women was a screening plasma with no
 values below 7.9 mmol/L to be considered abnormal. In a study
 threshold of 7.8 mmol/L we found no abnormal C
 the cases of GD whilst avoiding unnecessary harm to woman v
 our patients. After a study was done in those of Sulthan et al.
 Qaboos University Hospital in Oman, 7.8 mmol/L was taken as the screening value on the
 due to a high percentage of the population with abnormal screen
 OGTT value when the cut point was 7.2 mmol/L was used
 applied.¹¹ A study in a Turkish population reported by
 the underestimation of GD book in 91 of the population patients,
 if the cut-off value was 140 mg/dl or 7.8 mmol/L between >2
 balance between the number of positive screening weeks
 results with the inherent new weeks of gestation. A statistical
 OGTT and the number of positive results, 1 and 2 tests
 diagnosis) was optimal with a positive value of 155
 mg/dl or 7.5 mmol/L.¹² Compared to random plasma
 glucose, the GSI showed that patients are likely to perce
 have fewer false positive results. abnormal GSI were above 30

to 13% of the women with nor
 Methods. In SQUH, the abnormal lab diagnosis there
 was based on GSI with 50 patients, whereas as for the abno
 the plasma glucose value is more than 11 mmol/L. Eleven pei
 patient was subjected to a 100 g oral glucose load in the
 glucose load with fasting abnormal was 7% glucose the gre
 value of 5.8 mmol/L and 7.8 mmol/L. Using the cut-off test for
 The OGTT was performed during the first trimester as for
 with high carbohydrate administration was suspended
 performed for all pregnant women as shown in table 2 of parit
 weeks of gestation or later to prove attend increasing parit
 booking in our hospital. If risk factors are present, the signifi
 patient was subjected to OGTT as soon as possible. If a signifi
 normal they undergo the screening test. At 30 weeks of gestation
 weeks. If patients with normal screening test accompanied to
 macrosomia (big baby, epidural analgesia) or polyhydramnios (big
 ultrasound) or polyhydramnios (high gestation) group v
 age, then an OGTT was performed. High was 1996 freq
 to June 2000, 1056 women had been subjected to the comp
 screening test. Of this number 222 (21%) women had a
 a positive test, (namely GSI polyhydramnios, macrosomia, flu
 mmol/L). Of these 222 women 172 (77%) abnormal GSI co
 abnormal glucose tolerance test were treated as (Table 3),
 and the remaining 150 women (68%) were treated as normal.
 as normal. The incidence of abnormal GSI in our women wi
 mainly low risk women was 8% underweight or elective ca
 patients booked in SQUH who were referred to the hospital with e

Table 1 - Results of GST in relation to age **Table 4 - Results of GST in relation to mode of delivery**

Age	Abnormal GST N	Normal GST N
<20 years	2	7
>20-30 years	66	80
>30-40 years	32	13
Total	100	100

Mode of delivery	Abnormal GST N	Normal GST N
Normal delivery	78	83
EI LSCS	7	2
Em LSCS	9	7
Ventouse	6	8
Breech	0	0
Total	100	100

Using χ^2 test, it is found that abnormal GST was dependent on increasing age (level of significance 5%).
 N - number, GST - glucose screening test.

The mode of delivery was not affected by the mode of delivery (level of significance 5%).
 N - number, EI LSCS - elective-lower segment Caesarean section, Em LSCS - emergency-lower segment Caesarean section, GST - glucose screening test.

Table 2 - Results of glucose screening test in relation to parity

Parity	Abnormal GST N	Normal GST N
Nullipara	20	32
Para 1-5	69	61
Para >5	11	7
Total	100	100

There is no evidence that increasing parity is a risk factor for abnormal GST (χ^2 test level of significance 5%).
 N - number, GST - glucose screening test.

Table 5 - Results of GST in relation to birth weight

Weight in grams	Abnormal GST N	Normal GST N
<2500	6	9
2500 - <3500	67	78
3500 - 4000	16	9
>4000	11	4
Total	100	100

There was significant increase in macrosomia in women with abnormal GST (level of significance 5%).
 N - number, GST - glucose screening test.

Table 3 - Results of GST in relation to complications of pregnancy

Complications	Abnormal GST N	Normal GST N
Candidiasis	17	7
UTI	1	5
Polydramnios	7	3
Glycosuria	0	0
Total	100	100

The proportion of women with candidiasis was significantly compared to 602 gm in the normal group (level of significance 5%). UTI - urinary tract infection (level of significance 5%).
 N - number, GST - glucose screening test.

Table 6 - Results of GST in relation to placental weight

Weight in grams	Abnormal GST N	Normal GST N
<500	7	13
500-800	80	80
>800	13	7
Total	100	100

The mean placental weight of women in the normal group was 602 gm in the normal group (level of significance 5%).
 N - number, GST - glucose screening test.

cesarean section (LSCS) in the group with abnormal G5T mainly for macrosomia and complications by polyhydramnios, for example, emergency CS and risk of menacromeriest, the were not significantly different (Table 4). Studies¹⁷ had groups were comparable in regards to differ abnormal G5T risk pregnancy. The number of vaginal and cesarean ris with normal G5T was higher than abnormal. Compared to weight of infants, 13% of infants weighed more than 3500gm in the group with treatment G5T abnormality with were 4 cases with birth weight more than 4000gm in the group with abnormal G5T screening. However, 10% of infants weighed more than 4000gm and were cost a 11 cases of macrosomia, or infants were below 4000gm with than 4000gm. (Table 5). Our pregnancy study: and to ma comparing the weights of infants of both groups, a scre was found that the mean weight of infants of mothers with abnormal G5T was higher than infants of mothers with normal G5T (3077gm). level of significance 5%. Our data suggest that a test though t comparison of the proportion of infants that weigh more than 4000gm or more in the metabolic may cause an increase macrosomia was significantly higher in the mother at with abnormal G5T. Analysis of placental study¹⁸ has plac showed that in the women with abnormal G5T 11% had placenta weighing more than 800gm, compared to 7% in the group with normal G5T. Mean weight of placenta was higher in the abnormal group (854gm) than in the normal group (654gm) with a significance 5% (Table 6). University of C, and postpartum hemorrhage (blood loss more than 500ml) in the abnormal G5T group and one case in the normal G5T group.

Discussion The results of our study are consistent with the previous studies that abnormal abnormalities of glucose metabolism without a significant risk factor for fetal overgrowth and attendant problems. Leiken et al¹⁹ showed that minor carbohydrate intolerance in subjects with a normal glucose screen but with abnormal OGTT was associated with delivery of macrosomia infants. Even after correcting for other variables, abnormal OGTT correlates with macrosomia. Berkus et al²⁰ found that patients with abnormal 50gm screen values had significantly higher insulin output and abnormal glucose ratio than those with normal OGTT. Landy et al²¹ showed that a glucose screen abnormality was associated with a probable diagnosis of gestational diabetes predictive of neonatal macrosomia and hypoglycemia during this approach in the diagnosis of gestational diabetes without using OGTT. A study by Miello²² showed a relationship between glucose levels in patients with abnormal G5T during a glucose challenge test. An pregnancy (16-20 weeks) had a risk for large for gestational age infants 7 times greater than control group. An abnormal G5T in the late pregnancy (26-30 weeks) increased the risk for macrosomia 18 times.

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