



Review Article

INSULIN RESISTANCE WITH AND WITHOUT GESTATIONAL DIABETES MEELITUS AN ORAL GLUCOSE TOLERANCE TEST

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ABSTRACT

We aimed to compare changes in insulin levels during an oral glucose tolerance test (OGTT) between women with normal glucose tolerance during pregnancy and those with gestational diabetes mellitus. Overall 60 pregnant between 25 and 28 week gestation, 30 with NGT and 30 with GDM. The level of fasting blood glucose, insulin triglyceride and total cholesterol and the insulin level, blood glucose level at 1,2 and 3 hour post oral glucose administration during an OGTT were measured. The findings suggested that insulin sensitivity in women with GDM was significantly lower than that observed in those with NGT. Reducing insulin resistance and blood lipids in women with GDM could potentially improve maternal and fetal outcomes.

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INTRODUCTION

Gestational diabetes mellitus (GDM) is the most common metabolic disorder during pregnancy, and is defined as carbohydrates intolerance with first onset or recognition during pregnancy. The growing foetus needs nutrition and placental hormone and antagonise the action of insulin leading to a state of insulin resistance.

MATERIALS AND METHOD

60 pregnant women singleton pregnancy were selected from the maternity ward. Routine investigation was done for the mothers. All the women were between 25 and 28 week gestation. 30 mothers were diagnosed with GDM and 30 mothers had NGT.

The 100 gms OGTT was performed following and overnight fasting. Peripheral blood sample were collected 1, 2, and 3 hours following administration of oral glucose. Serum glucose, insulin, glycosylated haemoglobin were measured.

All measures were summarised as mean and standard deviation. One-way analysis of variance was used to determine the statistically significant difference between the groups. Co-relation and coefficient were determined using Pearson's method. $P < 0.05$ was considered as statistically significant.

RESULTS

There is no difference in the age of the women, gestational age, gravid, Para, pre pregnancy body mass index and HbA1C was found between those with GDM and NGT. However insulin resistance in the GDM group was significantly higher

than that observed in the NGT group ($p = 0.021$). Although there was no significant difference in 3 hours blood glucose level between 2 groups. ($p > 0.05$). Fasting and 1 hour, 2 hour blood glucose levels in women with GDM were significantly higher than those with NGT ($P = 0.025, P < 0.0001$) and $p = 0.022$.

DISCUSSION

The present study reports that changes in the insulin level both in those with GDM and those with NGT following an OGTT at 25-28 week gestation, demonstrates that, although fasting insulin levels in the GDM group were higher than those seen in the normal pregnancy group. In both subject groups, insulin level 1 and 2 hour post glucose were significantly higher than that observed in the fasting state.

CONCLUSION

It follows that both appropriate guidance on diet as well as on exercise, which can maintain normal blood glucose level. Thus serving to reduce glycemic load should be included in the treatment of women with GDM to meet the needs of normal energy metabolism in pregnant women.

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