SUMMARY and CONCLUSION

Introduction :

Gestational diabetes mellitus (GDM) , is defined as carbohydrate intolerance of varying severity with the onset or first recognition of diabetes during pregnancy resulting in hyperglycemia , a consequence of either inadequate insulin production , inadequate insulin secretion , or both **(London and Mestman , 2000) .**

Week et al., (2000) Reported an incidence between 1-3 % of all pregnant patients show glucose intolerance most of them with genetic or metabolic predisposition who are incapable of compensating adequately to diabetogenic effect of pregnancy that is, patients with gestational diabetes. A smaller group is formed by women who had diabetes diagnosed before pregnant.

Management of these diabetic infants should be initiated before birth by frequent prenatal evaluation of the pregnant women with overt or gestational diabetes. A symptomatic infant should have a blood sugar determination within 1 hour of birth and then every hour for the next 6-8 hours if clinically well and then every hour for the next 6-8 hours if clinically well and normoglycemic. Oral or gavage feeding initially with sterile water or 5% glucose water followed by milk formula, should be started at 2-3 hours of age and continued at 2-hours intervals. Blood glucose values under 30 mg/dl should be treated, even in asympotomatic infants, with intravenous infusions of glucose sufficient to keep the blood levels well above this level. The infant should be transferred to an incubator and his respiratory and cardiovascular functions monitored carefully **(Sperling, 1995).**

Aim :

Assessment of blood glucose level in high risk newly born infant of diabetic parturient mothers , to evaluate blood glucose changes which may occur following delivery and which may develop into hypoglycemia.

Objectives of the study are :

1- To compare the blood glucose level in diabetic and nondiabetic mothers at delivery .

2- To compare the blood glucose level in newly born babies in diabetic and nondiabetic mothers after birth .

3- To describe certain factors associated with parturient mother and fetus blood glucose level .

Subject and Methods

Settings :

This study was conducted in the obstetric units , labor ward of Zagazig University hospital was chosen for the (study group) and labor ward of Banha University hospital for the(control group) .

Sample :

A total number of 168 parturient women was selected and included in this study according to the sample characteristics , the women was attending from the above two setting and were selected randomly purposive for conduction of this study .

Subjects were divided into two groups :-

1- Study group : were diabetic parturient (n = 94) and divided into **two groups :**
   - **a-** Controlled diabetic group (n = 30)
   - **b-** Uncontrolled diabetic group (n = 64)

2- Control group : were normal parturient (n = 74) .

Tools of Data Collection :

Data collection tools were categorized under the following heading :

1- **An interviewing schedule include .**
2- **Maternal assessment sheet .**
3- **Pediatric neonatal assessment sheet include .**
4- **Testing blood glucose :** For the mother and baby .

The actual work of the current study started by an initial pilot study . A pilot study was performed in the obstetric and labor departments of Zagazig and Banha University hospitals (from 1 to 31 may , 2000) . The pilot study was applied on ten mothers from both groups (normal and study groups) and this number were excluded from the study sample . According to the result of pilot study , some items for the interview schedule were modified .

Results :

The results of this study were classified and categorized under the following headings :

1- Characteristics of the sample .
2- Blood glucose level in diabetic mothers before birth .
3- Blood glucose level of newborn at birth .
4- Factors associated with mother and fetus blood glucose level .

The main findings of this study can be summarized as follow :-

- Parturient women in the uncontrolled diabetic group were more likely (254.4 ± 64.7) to have , hyperglycemia than the controlled diabetic and normal groups .

- Diabetic groups , (controlled and uncontrolled) were more likely [56.7 % and 57.8 % respectively] to have cesarean delivery than the normal group (32.4 %) .

- There was a highly statistically significant difference between the three studied groups of the parturient women and family history of diabetes mellitus ($p < 0.001$) .

- Parturient women in the controlled and uncontrolled diabetic groups [30.0 % & 95.3 % respectively] were more likely to be obese .

- More than , two thirds (64.1 %) of uncontrolled diabetic groups and one third (33.3 °A) of controlled diabetic group had polyhydraminous compared to only 1.4 % among the normal group .

- There was a positive correlation between the mother blood glucose level and the blood pressure of the parturient diabetic women .

- The present study result indicates that , mothers blood glucose level was positively correlated with fetal weight (0.47) and placental weight (0.57) . This in similar to the finding of

Akinbi , (1996) who added that , birth weight is reduced in G.D.M. when dietary treatment is instituted and effect on weight gain is achieved . Therefore repetitive blood glucose monitoring and rapid treatment even for mild hyperglycemia are imperative during the whole period of pregnancy .

There was a highly statistically significant difference between the three studied groups of the pregnant women and Apgar score ($P < 0.001$)

- Lawest mean of Apgar score , was noticed among uncontrolled diabetic group of the first and fivth minutes , [4.3 ± 2.1 and 7.1 ± 2.6 respectively] , than those of the normal groups , [6.5 ± 2.1 and 4.2 ± 1.8 respectively] .

- There was highly statistically significant difference between three studied groups of parturient women in relation to medical history ($P < .001$) . (96.7 %) with diabetes mellitus and 61 pregnant uncontrolled diabetic women (95.3 %) with hypertension and obesity . (X2 =132.11 &112.7 &102.45 & 110.01) .
- There was a highly statistically significant difference between three studied groups of pregnant women and antenatal care ($P < 0.001$) 17 (56.7 %) of controlled diabetic group with moderate antenatal care and 60 (93.8 %) of uncontrolled diabetic group with no attendance level of antenatal care .
- There was a highly statistically significant difference in relation to - general examinations of the three studied of group pregnant women ($P < 0.01$) . The highest mean score of examination was (95.8 ± 7.4) was

in relation to assessment of blood pressure among uncontrolled diabetic group .

- There was a highly statistically significant difference among the three studied pregnant groups and placental weight ($P < 0.001$) . The highest mean score was (632.9 ± 130.3) among uncontrolled diabetic group in the item related to placental weight .

- There was a highly statistically significant difference between the three studied groups of the parturient women and anthropometric measurements ($P < 0.001$) .

- The highest mean score was (3251.5 ± 481.6 , 4148.7 ± 682.0 , 4207.5 ± 576.5 respectively) among controlled and uncontrolled diabetic groups in the item related to weight (gm) of baby, so liability of the weight to be more among diabetic than among normal .

- There was a highly statistically significant difference between the three studied groups of the parturient women and blood glucose level at birth ($P < 0.001$) . The highest mean score was (67.3 ± 16.4) of the normal group . Mean blood glucose level was more than two thirds among normal newborn compared to controlled and uncontrolled diabetic group [47.4 ± 21.1 and 30.4 ± 12.4 respectively] .

- Mother systolic blood pressure is negatively related to the fetal blood glucose at birth (Coefficient = 0.38) , mother blood glucose is also negatively related to fetal blood glucose level (Coefficient =43.06)

- Mother systolic blood pressure is positively related to the fetal weight (Coefficient = 9.52) , while fetal blood glucose at birth is negatively related to the fetal weight (Coefficient = 6.12) .

- The mother blood glucose is positively related to the fetal length (Coefficient = 0.01) .

- The mother blood glucose is positively related to the placental weight at birth (Coefficient = 0.58) , fetal weight at birth is also positively related to the placental weight (coefficient = 0.05) .

- Fetal blood glucose is positively related to the maternal blood loss during labor (Coefficient = 1.38) . The fetal weight at birth is also positively related to maternal blood loss during labor (coefficient = 0.03) . Simillary the placental weight is also positively related to the maternal blood loss during labor . (Coefficient = 0.49) .

From the Present Study We Could Conclude That :

Throughout good glycemic control in the preconception period and throughout pregnancy in women with gestational diabetes is important to minimize the risk of neonatal hypoglycemia after birth , and so gives the pregnant diabetic mother the same chance for having a healthy baby as the rest of normal population .