

Study of Birth Complications in Diabetic Mothers

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ABSTRACT

The current study was being performed to evaluate the birth complications in diabetic mothers; including both maternal and foetal complications; miscarriages. The nature of study was observational cross-sectional study. The study was being taken place at different hospitals, clinical settings, and maternity homes of Lahore during September 2016 - November 2016. The demographic data, family history, socio-economic history, indications, examination findings, results, lab findings etc were recorded. Total 200 pregnant diabetic patients were evaluated for this study. The age limit for this study was 18-40 years. The patients were being analyzed for their FBS/BSR or HbA1c findings and the type of diabetes was being recorded. Out of 200 patients, 81% had GDM while the remaining patients were being presented with pregestational diabetes (type I 5%, type II 14% patients). Most of the GDM cases were being diagnosed during 5th to 8th week of pregnancy. Out of 200 pregnancies, 20.5% (41) of these patients had normal pregnancies, and had no major foetal complications except uncontrolled sugar level in mothers. Remaining 79.5% (159) pregnancies/deliveries were associated with some major complications including respiratory distress, macrosomia, hypoglycemic babies, CVS malformations and still births/miscarriages. The ratio of normal vaginal delivery to CS was found out to be 29% to & 76%. The major indications for these CS deliveries were placental abruption (19.74%), dystocia (14.47%), uterine rupture (13.16%), breech position (6.58%), fetal distress (46.05%) and to some extent previous CS. The miscarriages were being associated with hypertension (41.5%), polyhydramnios (22%), Hughes syndrome (12.2%), and uncontrolled sugar level (24.3%). In our study population TT immunization status was good i.e. 76%. Diabetes is still a major problem of birth complications and miscarriages. Public awareness program is required to educate the people about reproductive health and to motivate them to undergo BSR/FBS during pregnancy prior to 24th gestational weeks to diagnose for GDM.

INTRODUCTION

"Diabetes mellitus (DM), commonly referred to as diabetes, is a group of metabolic disease in which there are high blood sugar levels over a prolonged period."

DM is a chronic disorder characterized by hyperglycemia and the late development of vascular and neuropathic complications. Regardless of its cause, the disease is associated with a common hormonal defect namely insulin deficiency that may be absolute or relative in the context of coexisting insulin resistance. The effect of insufficient insulin plays a primary role in the metabolic derangements linked to diabetes; hyperglycemia, in turn, plays an important role in disease-related complications (Inzucchi & Sherwin 2011).

DISCUSSION

This study was conducted to determine the occurrence of GDM and the birth complications in diabetic mothers. In the estimation of the prevalence of GDM during different gestational weeks, it was found out that although GDM manifests in all trimesters of pregnancy, but in majority of the cases GDM occur in early gestational weeks. Screening for GDM is usually performed around 24–28 weeks of gestational age. In a recent study a total of 4151 consecutive pregnant women irrespective of gestational weeks attending antenatal health posts across Chennai city underwent a 75 g OGTT (oral glucose tolerance test) recommended by WHO and diagnosed GDM if 2hr PG value ≥ 140 mg/dl. Observation in this study was that 38.7% women developed GDM even prior to 24th week of gestation (Seshiah et al. 2007). Our results are very much similar to this study. So the OGTT must be performed in pregnant women prior to 24 weeks of gestation for better hyperglycemic control and to reduce the risk of birth complications.

During pregnancy, out of all types of diabetes most prevailing type is GDM. In the current study, 162 (81% of the total cases) women were presented with GDM, while with type I only 5% and with type II 14%. So the risk of GDM is more in Pakistan. A recent study analyzed 1,729,225 Canadian women and found that the prevalence of gestational and pregestational diabetes in 1996 was 2.7% and 0.4%, respectively (Wen et al. 2000). In another study, rates of gestational diabetes (Class A1 combined with Class A2) and pregestational diabetes were 2.0% and 0.3%, respectively (Sheffield et al. 2002). Our results were similar to these studies in a sense that the ratio of gestational diabetes is more as compared to pregestational diabetes among pregnant women in Pakistan.

The maternal diabetes is associated with a large number of complications in foetus and neonate. Patients who cannot control their diabetes with diet and exercise only, require insulin, which leads to state of hyperinsulinemia in the foetus of such mothers. This and many other reasons lead to the foetal complications. Postnatal hypoglycemia, respiratory distress, macrosomia, CVS malformations and still births are major complications in the babies born to the diabetic mothers. The current study has shown that these complications are frequently occurring in the neonates and foetus of diabetic mothers. In recent years a study was performed to determine the range of complications occurring in infants of diabetic mothers. A total number of 40 babies were included in this study. 35% newborns presented respiratory distress and 8% were having CVS malformations. Hypoglycemia was noted in 50% (Alam et al. 2006). Another study was being performed to compare the prevalence at live birth and the spectrum of cardiovascular malformations in infants born to diabetic mothers with that in infants of non-diabetic mothers. This study concluded that maternal diabetes is associated with a fivefold increase in risk of cardiovascular malformations. Transposition of the great arteries, truncus arteriosus, and tricuspid atresia are overrepresented to produce a substantial excess of these malformations (Wren et al. 2003). All these previous studies strongly support our results.

CONCLUSION

Diabetes is still a major problem of birth complications and miscarriages in Pakistan. In the current study we concluded that during pregnancy GDM is the most prevailing type of diabetes and it is associated with major birth complications including respiratory distress, hypoglycemic babies, macrosomia, CVS malformations and even miscarriages. Most of our patients were being diagnosed with GDM before 24th week of gestation. So a public awareness program is required to educate the people about reproductive health and to motivate them to undergo BSR/FBS during pregnancy prior to 24th gestational weeks to diagnose for GDM. This will lead to the better glycemic control during pregnancy and decreased incidence of birth complications and miscarriages as according to our current study the major reason of miscarriages in diabetic mothers are hypertension and uncontrolled sugar level. From the current study we also concluded that the women being vaccinated with TT, are still at risk of GDM.

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