

A study of prevalence gestational diabetes mellitus and pregnancy out come at tertiary health care center

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Abstract

Background: Gestational diabetes mellitus (GDM) is a common metabolic abnormality during pregnancy which if untreated may lead to maternal and perinatal complications. Pregnancy is a complex endocrine metabolic adaptation and diabetogenic condition involving impaired cellular function and moderate elevation of blood glucose levels particularly following ingestion of the meal. **Aims and Objectives:** to study prevalence of Gestational diabetes mellitus and pregnancy out come at tertiary health care center. **Methodology:** This was a cross sectional study carried out in the department of OBGY during the one year period i.e. January 2017 to January 2018, all the ANC registered women were screened for Gestational diabetes mellitus by Glucose Tolerance test (GTT) those patients who showed Positive GTT were included into study. All details of the patients like, Age, BMI, Parity, Maternal complications, Neonatal complications etc. were noted. The data was entered to excel sheet and percentage and proportions were calculated. **Result:** In our study we have found that the prevalence of GDM in our study was found to be 1.89%. The average age of the patients was 27 ± 2.32 Yrs. , BMI was 26 ± 3.21 most of the patients were multi gravid as average parity was 2.2 ± 1.23 . The most common maternal complications were Cesarean delivery in 71.43%; followed by PIH in 54.29%, APH in 20.00%, IUGR in 14.29%, Oligohydramnios in 8.57%, IUD in 5.71. The most common neonatal complications were Macrosomia were 40.00%, Hypocalcaemia in 34.29%, Hyperbilirubinemia in 31.43%, Preterm in 25.71%, Polycythemia in 22.86%, Congenital anomaly in 14.29%, Respiratory distress in 11.43%. **Conclusion:** It can be concluded from our study that the prevalence of GDM was 1.89% , the most common maternal complications were Cesarean delivery followed by PIH , APH, IUGR, Oligohydramnios, IUD and neonatal complications were Macrosomia, Hypocalcaemia, Hyperbilirubinemia Preterm etc. **Key Word:** Gestational diabetes mellitus (GDM), Maternal complications, Neonatal complications.

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INTRODUCTION

Gestational diabetes mellitus (GDM) is a common metabolic abnormality during pregnancy which if untreated may lead to maternal and perinatal complications. Pregnancy is a complex endocrine

metabolic adaptation and diabetogenic condition involving impaired cellular function and moderate elevation of blood glucose levels particularly following ingestion of the meal.

¹ Hormones like estrogen, progesterone, human placental lactogen, cortisone and growth hormones are antiinsulinogenic. These changes are increased in mid-pregnancy period and cause abnormal glucose tolerance in some woman rendering them prone for GDM. The prevalence of diabetes is increasing globally and these numbers also includes women with GDM. GDM is important in that it poses a risk to the pregnant woman and her baby. Maternal complications of GDM are preeclampsia, polyhydramnios, elevated rates of operative delivery and preterm labor. GDM is associated with the higher incidence of Type 2 DM later in life.³ The major morbidities associated with infants of diabetic mothers

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include respiratory distress, macrosomia, polycythaemia, hypoglycaemia, hypocalcaemia and congenital malformations. Perinatal outcomes associated with poor glycemic control in mothers are associated with perinatal mortality as high as 42.9%.⁴ So we have studied the prevalence Gestational diabetes mellitus and pregnancy outcome at tertiary health care center

METHODOLOGY

This was a cross sectional study carried out in the department of OBGY during the one year period i.e. January 2017 to January 2018, all the ANC registered women were screened for Gestational diabetes mellitus by Glucose Tolerance test (GTT) those patients who showed Positive GTT were included into study. All details of the patients like, Age, BMI, Parity, Maternal complications, Neonatal complications etc. were noted. The data was entered to excel sheet and percentage and proportions were calculated.

RESULT

Table 1: Distribution of the patients as per the prevalence of gestational diabetes

Prevalence	No.	Percentage (%)
Total ANC patients registered	18200	100
Patients of GDM	35	1.89

The prevalence of GDM in our study was found to be 1.89%

Table 2: Distribution of the patients as per the various parameters

Parameter	(mean \pm SD)(n=35)
Age	27 \pm 2.32
BMI	26 \pm 3.21
Parity	2.2 \pm 1.23

The average age of the patients was 27 \pm 2.32 Yrs., BMI was 26 \pm 3.21 most of the patients were multi gravid as average parity was 2.2 \pm 1.23 .

Table 3: Distribution of the patients as per the maternal complications

Maternal complications	No.	Percentage (%)
Cesarean delivery	25	71.43
PIH	19	54.29
APH	7	20.00
IUGR	5	14.29
Oligohydramnios	3	8.57
IUD	2	5.71

The most common maternal complications were Cesarean delivery in 71.43%; followed by PIH in 54.29%, APH in 20.00%, IUGR in 14.29%, Oligohydramnios in 8.57%, IUD in 5.71

Table 4: Distribution of the patients as per the neonatal complications

Neonatal complications	No.	Percentage (%)
Macrosomia	14	40.00
Hypocalcaemia	12	34.29
Hyperbilirubinemia	11	31.43
Preterm	9	25.71
Polycythemia	8	22.86
Congenital anomaly	5	14.29
Respiratory distress	4	11.43

The most common neonatal complications were Macrosomia were 40.00%, Hypocalcaemia in 34.29%, Hyperbilirubinemia in 31.43%, Preterm in 25.71%, Polycythemia in 22.86%, Congenital anomaly in 14.29%, Respiratory distress in 11.43%.

DISCUSSION

Why should we be concerned about GDM? GDM not only influences immediate maternal (preeclampsia, stillbirths, macrosomia, and need for cesarean section) and neonatal outcomes (hypoglycemia, respiratory distress), but also increases the risk of future Type 2 diabetes in mother as well as the baby. A recent meta-analysis showed that women with gestational diabetes have a greatly increased risk of developing Type 2 diabetes (relative risk 7.43, 95% confidence interval 4.79–11.51).¹² In a recent study from North India, women diagnosed to have GDM were subjected to an oral glucose tolerance test (OGTT) 6 weeks after delivery, as per standard recommendations. A disturbingly large proportion of GDM women had some persistent glucose abnormality after birth. Impaired fasting glucose (IFG) was seen in 14.5% and impaired glucose tolerance (IGT) in 4.8%, 8% had both IFG and IGT, and 6.4% had overt Type 2 diabetes.¹³ These figures are a wake-up call to place GDM at the highest priority in our public health system. Global data show that children of mothers with uncontrolled diabetes – either pre-existing or originating during pregnancy – are four to eight times more likely to develop diabetes in later life compared to their siblings born to the same parents in a non-GDM pregnancy.¹⁴ Diabetes has become a global pandemic because of aging population, sedentary life style, urbanization, and increasing incidence of obesity. Prevalence of diabetes is on the rise in developing countries such as India and China. As the incidence of diabetes is rising in epidemic proportion,² more women of childbearing age are at increased risk of diabetes during pregnancy. In fact, a high prevalence of gestational diabetes mellitus (GDM) of the order of 18% has been reported from India.² Women with GDM are at high risk for developing diabetes later in life. Thus, GDM provides a unique opportunity to study the early pathogenesis of diabetes and to develop interventions to prevent the disease. Abnormal metabolic environment due to

hyperglycemia has a profound impact on maternal and fetal outcome. Indians belong to higher risk for developing diabetes due to their ethnicity. GDM has been found to be more prevalent in urban areas than in rural areas.⁶ In the random survey performed in various cities in India in 2002-03, an overall GDM prevalence of 16.55% was observed.⁷ In another study done in Tamilnadu, GDM was detected in 17.8% woman in urban, 13.8% in semi urban and 9.9% in rural areas.⁸ Priyanka Kalra *et al* found the prevalence of GDM to be 6.6% western Rajasthan women.⁸ Rajesh Rajput *et al* found the prevalence of GDM to be 7.1% in a tertiary care hospital in Haryana.¹¹ Clinical risk factors for GDM are maternal age ≥ 30 , family history of DM, previous history of GDM, obesity (BMI ≥ 27 kg/m²), previous history of macrosomia, previous history of unexplained fetal death and glycosuria.¹¹ In our study we have found that the prevalence of GDM in our study was found to be 1.89% it was lesser as compared to other studies this could be due difference the study population. The average age of the patients was 27 ± 2.32 Yrs, BMI was 26 ± 3.21 most of the patients were multi gravid as average parity was 2.2 ± 1.23 . The most common maternal complications were Cesarean delivery in 71.43% ; followed by PIH in 54.29%, APH in 20.00%, IUGR in 14.29%, Oligohydramnios in 8.57%, IUD in 5.71. The most common neonatal complications were Macrosomia were 40.00%, Hypocalcaemia in 34.29%, Hyperbilirubinemia in 31.43%, Preterm in 25.71%, Polycythemia in 22.86%, Congenital anomaly in 14.29%, Respiratory distress in 11.43%. These findings are similar to Krishna Dahiya¹⁵ they found Prevalence of GDM was 7%. Age ≥ 25 years, obesity, multigravidity and family history of diabetes mellitus were major risk factors for developing GDM. Maternal and fetal outcomes were poor in GDM group as compared to the control group. In GDM group common maternal complications were polyhydramnios and recurrent vaginal infections. Rate of caesarean section was higher in GDM group. Babies born to GDM mothers had higher incidence of metabolic complications and macrosomia.

CONCLUSION

It can be concluded from our study that the prevalence of GDM was 1.89%, the most common maternal complications were Cesarean delivery followed by PIH, APH, IUGR, Oligohydramnios, IUD and neonatal complications were Macrosomia, Hypocalcaemia, Hyperbilirubinemia Preterm etc.

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