Original Articles

A Study of Maternal and fetal out Come in Cases of Gestational Diabetes Mellitus

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ABSTRACT

Content : Gestational diabetes mellitus (GDM) is defined as Carbohydrate/Glucose intolerance of varying degrees of severity with onset or first recognition during pregnancy". Pregnancy itself is a Diabetogenic State. GDM complicates 7% of the pregnancy. There is much higher rate of maternal and fetal compromise in a diabetic pregnancy as compared to normal pregnancy.

Aims : This Study is carried out to study proportion of gestational diabetes in pregnancy and its fetal and maternal outcome.

Setting and Designs : This Prospective study was conducted among 32 cases of gestational diabetes mellitus in Department of Obstetrics and Gynaecology ,Civil Hospital , Ahmedabad.

Results and Conclusions : In this Study , Prevalence of GDM was 0.205%, Most common maternal complication was PIH among37.5% of GDM pregnancy and Most common fetal complication was Prematurity among 18.8% of GDM pregnancies.

INTRODUCTION

Gestational Diabetes Mellitus (GDM) is defined as: carbohydrate/glucose intolerance of varying degrees of severity with onset or first recognition during pregnancy. Pregnancy It self is a diabetogenic state. GDM complicates 7% of the pregnancy[1]. There is much higher rate of maternal and fetal compromise in a diabetic pregnancy as compared to normal pregnancy.[2]

Placental Lactogen, estrogen, progesterone and cortisol also there is increased destruction by kidney and placenta to increase in insulin resistance. All in all leading to physiological insulin resistance of late pregnancy.[3]

The adverse intrauterine environment causes epigenetic changes in the fetus that may contribute to metabolic disorders, the so-called vicious cycle of diabetes[4].

The mainstay of GDM treatment is dietary and lifestyle advice, which includes medical nutrition therapy, weight management, and physical activity[5]. Women monitor their fasting and post meal glucose levels and adjust their individual diet and lifestyle to meet their glycemic targets. This pragmatic approach achieves the glycemic targets in approximately two-thirds of women with GDM5. However, despite the importance of medical nutrition therapy and its widespread recommendation in clinical practice, there are limited data regarding the optimal diet for achieving maternal euglycemia[5–8]. It is also unknown whether the dietary interventions for achieving maternal glycemia are also effective for reducing excessive fetal growth and adiposity[9].

Different dietary strategies have been reported including low glycemic index (GI), energy restriction, increase or decrease in carbohydrates, and modifications of fat or protein quality or quantity[10].

Risk factors for gestational diabetes are family history of diabetes, obesity, BMI, history of GDM (recurrence rate of 30 to 50% in the subsequent pregnancy), elderly gravida, > 25 years, smoking, sedentary lifestyle. GDM complicates 7% of the pregnancies , therefore it is important to study its feto-maternal outcome.

Therefore, detection of GDM becomes an important health issue. Detection and treatment of GDM not only reduces the risk for fetus but also provides an opportunity to warn the mother to adopt preventive measures like controlled diet, exercise, and achieve ideal body weight to haltor delay the process of onset of overt diabetes. Insulin production and insulin sensitivity is normal in early pregnancy, but as pregnancy advances there is increased production of insulin. Therefore it is important to study its feto- maternal outcome.

Aims :

1 To Study the proportion of Gestational diabetes in Pregnancy.

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2 To Study maternal outcome in terms of mode of delivery, intrapartum and postpartum complication and fetal outcome in terms of maturity, occurrence of congenital anomalies and neonatal complication in cases of gestational diabetes.

Study Place :

This study was conducted in Shalin Hospital Ahmedabad.

Study Duration :

The study was carried out between the period of November 2018 to November 2019.

Inclusion Criteria :

All cases of pregnancies having gestational diabetes were included.

Study Design :

It is a prospective observational study, of 32 cases of gestational diabetes mellitus out of total 15,626 delivered cases in Shalin Hospital, Ahmedabad.

Materials and Methods:

Screening was done at 24 to 28 weeks of gestation, WHO has recommended 75gm2- hour OGTT. GDM is diagnose d if 2hour plasma glucose is> 140mg/dl.

OBSERVATION AND DISCUSSION

- **Prevalence of gestational diabetes:**

Total No of Deliveries in the Study Period	15,626
Cases of GDM	32
Prevalence	0.205%

- **Maternal complication in GDM**

Complication	Number	(%)
Hypertension	12	37.5
Polyhydramnios	6	18.8
Preterm Labour	6	18.8
Post part um Haemorr hage	4	12.5
Septicemia	1	3.1
Diabetic Ketoacidosis	0	0
Wound Gap	4	18.8
Vulvo-vaginitis	4	18.8
Thrombo phlebitis	1	3.1
IUFD	5	15.6

- **Neonatal out come**

Maturity	Number	Percentage(%)
Full-term	24	75
Preterm	8	25
Livebirth	27	84.4
Stillbirth	5	15.6
Expired	1	3.0

- **Neonatal complication**

Complication	Number	(%)
Percentage	6	18.8
Macrosomia	4	12.5
RDS	5	15.6
Hypoglycaemia	7	21.8
Hyper calcemia	1	3.0
Hyper billirubinemia	17	53.1
Congenital anomaly	2	6.2
NICUadmission>24hour	10	31.2
Neonatal death	1	3.0

· RELATION OF AGE AND GESTATIONAL DIABETES MELLITUS

AGE (YEARS)	NUMBER (N=32)	PERCENTAGE	
<=20	4	12%	37%
21-24	8	25%	
25-29	11	34%	63%
30-34	7	22.8%	
>=35	2	6.2%	

In the study maximum number of gestational diabetes mellitus was detected in the age group 25 - 29 years, which is, 11 in number. 7 cases were detected in the age group of 30-34 years and 2woman was aged 37 years. Overall, 63% of patients were above age of 25 years.Average age in our study is 26.26 years.Thus, increased maternal age is a risk factor for gestational diabetes mellitus.

· RELATION OF RESIDENCE AND GESTATIONAL DIABETES MELLITUS

	NUMBER (N=32)	PERCENTAGE
URBAN	25	78%
RURAL	7	22%

In the study out of 32 patients which were detected to be positive for gestational diabetes mellitus, 25 patients belong to urban area, which is approx 78% and 7 patients belong to rural area, which is approx 22%.

· DISTRIBUTION OF CASES ACCORDING TO GRAVIDA STATUS

As evident from below data 25% patients were primigravida while 75% patients were multigravida

GRAVIDA	No. (N=32)	PERCENTAGE	
Primi	8	25%	25%
Second	14	43.7%	75%
Third	6	18.7%	
Four and above	4	12.5%	

· PAST HISTORY OF GDM

PAST H/O GDM	NUMBER (N=32)	PERCENTAGE
YES	6	18.7%
NO	26	81.3%

6patients that are approx 18.7% patients had past history of GDM, which is risk factor for occurrence of GDM.

CONCLUSION

- Total 32 patients of gestational diabetes were analysed.
- Proportion of GDM in our study was 0.2%.
- 22.8% were in the age group30-34 years. 71% patients belonged to age group less than 30 years, and 29% were in the age group of more than 30years.
- 12.5% were diagnosed in first trimester. 25% in second, and 62.5% in third trimester.
- Most common association of GDM in pregnancy was PIH, seen in 37.5% patients. Wound gap and vulvo vaginitis was present in 18.8% and septicemia in3.1%.
- 25%neonateswerepreterm
- 15.6% babies were still born. Congenital anomaly was found in 2 babies. Perinatal mortality was 22.2%.

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