



GESTATIONAL DIABETES MELLITUS: EXPLORING THE PREVALENCE OF GESTATIONAL DIABETES MELLITUS IN THE CASES REPORTED AT ANTENATAL CLINIC OF A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: The aim of the study was to study the prevalence of Gestational Diabetes Mellitus in the cases reported at antenatal clinic of a tertiary care teaching hospital. **Methods:** In this observational cross-sectional study, we included 65 patients with gestational diabetes mellitus. The study was conducted from 12th of February 2024 to 12th of May 2024 at the Department of Forensic Medicine & Toxicology, S.N. Medical College, Agra. **Results:** Total 65 cases of Gestational Diabetes Mellitus were studied. It was observed that Gestational Diabetes Mellitus were common in the age group of 30-39 years (53.8%) and patients of third trimester and multigravida were most commonly involved, i.e., 44.6% and 92.4% respectively. Past history of Gestational Diabetes Mellitus was present in 40% of the cases, 67.8% of the cases required delivery by Caesarean section and the prevalence of Gestational Diabetes Mellitus was found to be 7.06%. **Conclusion:** Gestational Diabetes Mellitus (GDM) is a major contributor to maternal and infant mortality. Early diagnosis, effective management, and education among patients are essential to improve outcomes and reduce related risks.

KEYWORDS : Gestational Diabetes Mellitus, Insulin resistance, Risk factors of Gestational Diabetes Mellitus.

INTRODUCTION

Gestational Diabetes Mellitus (GDM) is characterized by carbohydrate intolerance of varying severity, first identified during pregnancy. It is distinct from pre-existing diabetes and primarily involves glucose intolerance resulting from insufficient pancreatic beta-cell compensation for pregnancy-induced insulin resistance. This condition poses significant risks to both maternal and infant health. These risks necessitate early detection, frequent monitoring, and effective management to mitigate adverse outcomes. The potential candidates for GDM include women with a family history of diabetes, previous delivery of a macrosomic baby, unexplained perinatal loss, or recurrent vaginal infections during the current pregnancy. Other risk factors are obesity and maternal age over 30 years. The physiological changes of pregnancy, such as increased insulin resistance and altered glucose metabolism, further complicate the condition. Effective management of GDM is crucial to reduce its associated mortality. This involves early diagnosis through glucose tolerance tests, regular antenatal visits, and tailored treatment plans including diet, insulin therapy, and careful monitoring of both mother and foetus.

Aim & Objective

The aim and objective of the study was to analyse the clinical profile of Gestational Diabetes Mellitus like gestational age, gravida status, past history, and Mode of delivery in relation to GDM,

METHODS

Current study design was observational cross-sectional type in which total 65 patients were studied during the period of 3 Months i.e., 12th February 2024 to 12th May 2024 in the Department of Forensic Medicine and Toxicology, S.N. Medical College, Agra. Their details were collected and their age, gestational age, gravida status, past history of GDM, and mode of delivery were taken into consideration for the study. An observational analysis was made based on these parameters.

Inclusion Criteria

All the pregnant females with Gestational Diabetes Mellitus reported at antenatal clinic were included in the study.

Exclusion Criteria

All the pregnant females without Gestational Diabetes Mellitus were excluded from the study.

Observations

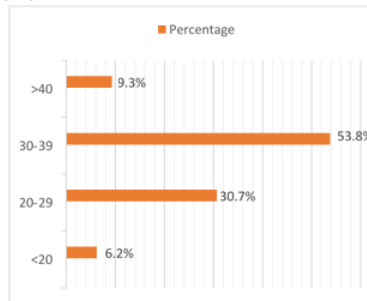


Figure 1. Age distribution of the patients in gestational diabetes mellitus

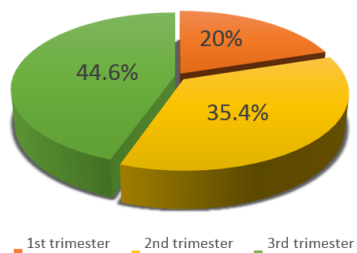


Figure 2. Percentage of cases according to gestational age

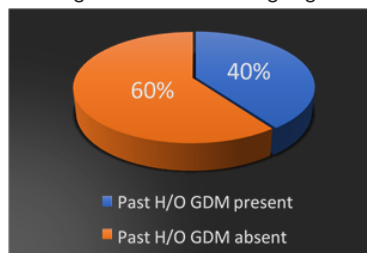


Figure 3. Percentage of Past H/O GDM in multigravida patients

Table 1. Distribution according to gravida status of the patients

Gravida	N	%
Primi	5	7.7
Second	9	13.8
Third	16	24.7
Four and above	35	53.8
TOTAL	65	100

Table 2: Mode of delivery in cases of gestational diabetes mellitus (N=65)

Mode of Delivery		N	%
Vaginal Delivery	Normal	16	24.6
	Instrumental	5	7.6
Caesarean Section Delivery	Emergency	32	49.3
	Elective	12	18.5
TOTAL		65	100

Table 3: Indications of caesarean section in gestational diabetes mellitus. (N = 44)

Indications	N	%
Previous CS	16	36.3
Cephalo Pelvic Disproportion	6	13.6
Foetal distress	4	9.2
Uteroplacental insufficiency	4	9.2
Uncontrolled GDM	6	13.6
Induction failure	6	13.6
Pre-mature Rupture Of Membrane + oligohydramnios	2	4.5
TOTAL	44	100

RESULT

Out of total 920 deliveries from 12th of February 2024 to 12th of May 2024, total 65 patients of gestational diabetes were studied. According to the World Health Organization (WHO), the prevalence of gestational diabetes mellitus (GDM) is 12.5%. While, According to a 2019 study, the prevalence of gestational diabetes mellitus (GDM) using the International Association of Diabetes and Pregnancy Study Groups (IADPSG) diagnostic criteria is 10.6%. And the prevalence of gestational diabetes mellitus in the present study was found to be 7.06%.

In the present study, 6.2% of the patients of gestational diabetes belonged to age less than 20 year (4 cases), 30.7% of the patients belonged to age group 20-29 years (20 cases). The maximum number of patients, that is, 53.8% were in the age group of 30-39 years (35 cases). And 9.3% were in the age group of more than 40 years (6 cases). [Figure 1]

It is observed in the present study that, 20% of the patients of gestational diabetes mellitus were diagnosed in first trimester (13 cases), 35.4% were diagnosed in the second trimester (23 cases) and 44.6% in third trimester (29 cases). Thus, even if screening test is negative, re-screening for gestational diabetes should be done at 28 weeks again. [Figure 2]

Out of all 60 multigravida patients 40% of the patients had past history of gestational diabetes (24 cases) and 60% of the patients were not having past history of diabetes (36 cases). Thus, past history of GDM is a risk factor for recurrence of gestational diabetes mellitus in next pregnancy. [Figure 3]

In the present study, 7.7% of the patients were primigravida (5 cases), 13.8% of the patients were second gravida (9 cases), 24.7% of the patients were third gravida (16 cases), and 53.8% were fourth gravida or above (35 cases). It was observed that gestational diabetes mellitus was more frequent in multipara patients, hence parity is an important risk factor for development of gestational diabetes mellitus. [Table 1]

In the present study it was observed that, 24.6% of the patients

were delivered through normal vaginal delivery (16 cases), 7.6% of the patients required instrumental vaginal delivery (5 cases), while 49.3% of the patients were delivered by emergency caesarean section (32 deliveries); 18.5% of the patients underwent elective caesarean section (12 deliveries). [Table 2]

In the present study it was observed that most common indications for caesarean section in patients with gestational diabetes mellitus were previous 1 or more CS which includes 36.3% of the cases, i.e., (16 patients), 13.6% of the cases, i.e., (6 patients) each were having cephalopelvic disproportion, uncontrolled GDM and induction failure, 9.2% of the cases, i.e., (4 patients) each had foetal distress and uteroplacental insufficiency, 4.5% of the cases, i.e., (2 patients) had Premature rupture of membranes (PROM), a cause of low amniotic fluid levels, lead to oligohydramnios. [Table 3]

DISCUSSION

According to the American diabetes association (ADA), GDM complicates approximately 7% of all pregnancies, whereas its total incidence is estimated up to 17.8%, but in our study, the prevalence of GDM is found to be 7.06%.

In a study by Oros et al [1], prevalence of GDM was 11.3% in age group of >35 years which was comparable to the present study in which incidence of gestational diabetes mellitus was 53.8% in age group of 30-39 years.

In the present study, 7.7% patients were primigravida, 13.8% patients were second gravida, 24.7% patients were third gravida, and 53.8% patients were fourth gravida and above. Study was compared to study of Vinoth et al [2]. And it was observed that pregnancy with diabetes was more in multigravida, i.e., 69.3% patients. In the study by Ye Wenrui et al [3], caesarean section was required in 60.4% cases of gestational diabetes mellitus and in the present study incidence of caesarean section was 67.8%.

In our study, third trimester had maximum no. of cases, i.e., 44.6%, which was comparable to the study by Berntorp et al [4], in which 28.5% of the cases were in 3rd trimester.

CONCLUSION

The exploration of Gestational Diabetes Mellitus (GDM) and its prevalence has revealed a complex interplay of factors that contribute to maternal and foetal mortality. The increasing prevalence of GDM globally, particularly in certain high-risk populations, underscores the urgency of addressing this health issue. The complications associated with GDM are multifaceted, affecting both the mother and the foetus.

In light of these findings, it is clear that comprehensive management strategies are needed to mitigate the impact of GDM and reduce the associated maternal and foetal mortality rates. These strategies should include early screening and diagnosis, individualized treatment plans, regular monitoring, and patient education.

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